

Keeping you On Track.....



Insurance products available

- ✓ Accident damage On Track
- ✓ Rally damage On Event
- ✓ Storage and transit
- ✓ Liability
- ✓ Personal accident
- ✓ Track day



- ✓ Competitive premiums
- ✓ A-Rated Insurers
- ✓ Fast claim payments
- ✓ Simple quote form
- ✓ Bespoke cover
- ✓ Knowledgeable staff

Complete an online quote request form at

www.ryanmi.com

Email us: info@ryanmi.com Call us: +44 (0) 1799 524202

Ryan Motorsport Insurance Limited is an appointed representative (557405) of Independent Broking Solutions Limited who are authorised and regulated by the Financial Conduct Authority. Its Financial Services registration number is 312026.

FREE ENGINEERING SUPPLEMENT

World Endurance
Alonso closes on crown at Spa



AUTOSPORT

BRITAIN'S BEST MOTORSPORT WEEKLY

9 MAY 2019

Young guns who will be F1's next superstars

'I've got my work cut out to stay ahead of them'

Lewis Hamilton



VERSTAPPEN

NORRIS

LECLERC

RUSSELL

PLUS
Steve McQueen's lost racing film

MOTORSPORT TRAVEL, RACE TICKETS, HOSPITALITY

Travel the World with our Escorted Tours and UK Travel Team

Select Motor Racing.com



ESCORTED TOUR PACKAGES
TO ALL FORMULA ONE EVENTS



2019 BOOK NOW

- ◇ By Air with Airport & Circuit Transfers
Extended holiday options
- ◇ Holiday Coach Tours
- ◇ Team Factory Tours
- ◇ Select VIP F1
Track Experiences
- ◇ F1 Testing
Team Packages

TRAVEL WITH SMR Join the family!
Run by Fans for Fans

WE OFFER TRAVEL PACKAGES TO

ENDURANCE RACING

- ◇ Le Mans 24hr
- ◇ WEC Spa 6hr
- ◇ Blancpain Spa 24hr
- ◇ WEC 1000km - Sebring 12hr
- ◇ Indy 500

HISTORIC RACING

- ◇ Mille Miglia
- ◇ Spa Classic
- ◇ Goodwood Festival of Speed
- ◇ Goodwood Revival
- ◇ Monaco Historic
- ◇ Le Mans Classic



Call your UK Travel Team: +44 (0) 1451 833 721
Book Online enquiry@selectmotorracing.com





The next generation battling to topple Lewis

Every now and again a wave of driving talent arrives in Formula 1. Robert Kubica, Nico Rosberg, Lewis Hamilton and Sebastian Vettel made their grand prix debuts within a year and a half of each other. Three went on to win world titles and one should have done but for the infamous rally crash that has led to a remarkable comeback.

As Edd Straw points out in our cover feature on page 16, the next wave is now arriving. Charles Leclerc, Lando Norris and George Russell are leading it and will be aiming to take Hamilton's mantle at the top of the sport over the next few seasons. Max Verstappen will be in that fight too, of course, though he is already so established as an F1 top-liner that it's easy to forget he is only 21, the same age as Leclerc and Russell.

Hamilton is aware of the new challengers he is likely to be facing and seems to relish the possibility of fighting the next generation. Let's hope one or more of them can get into title-fighting contention before Hamilton decides to retire and the current young guns become the established superstars.

Once that happens there will surely be another wave building in the junior categories, including FIA Formula 3. The revised championship kicks off in Spain this weekend and on p24 Jack Benyon takes you through the key changes and the drivers who are likely to set the pace in 2019.

Another category hoping to act as a launchpad for future stars is the W Series and the all-female championship got under way at Hockenheim last weekend. Lucy Morson's report of Briton Jamie Chadwick's victory can be found on p46.

At the other end of a career, Fernando Alonso looks set to finally become a world champion again – alongside Sebastien Buemi and Kazuki Nakajima – following another World Endurance success at Spa (report on p36). Some waves last longer than others.



Kevin Turner
Editor

kevin.turner@autosport.com

NEXT WEEK
16 MAY

Our F1 team reports from the Spanish GP. Can Ferrari rediscover its testing form?



COVER IMAGES

Motorsport Images/JEP, S Bloxham; Red Bull

PIT & PADDOCK

- 4 Formula 1 set for Zandvoort return
- 6 2021 F1 rules move nearer
- 8 Audi keen on Super GT programme
- 10 Spanish Grand Prix preview
- 11 Opinion: Edd Straw
- 13 Opinion: Matt James
- 15 Feedback: your letters

INSIGHT

- 16 **COVER STORY**
The battle to topple Hamilton
- 24 F3 preview: a new era begins
- 30 McQueen's lost racing film

RACE CENTRE

- 36 Alonso edges closer to WEC crown at Spa
- 43 World of Sport: Blancpain GT; DTM; Australian Supercars; W Series; IMSA; Super GT; Formula Regional European Championship; MotoGP

CLUB AUTOSPORT

- 62 Sharp in historic switch with BMW
- 64 Green targets comeback after smash
- 67 More Tuscan celebration races possible
- 68 National reports: Donington Park; Silverstone; Mallory Park; Knockhill; Castle Combe
- 74 50 years of Formula Ford at Combe

FINISHING STRAIGHT

- 78 What's on this week
- 80 From the archive: 1985 Sanremo Rally
- 82 Pit your wits against our quiz

SUBSCRIPTION OFFER

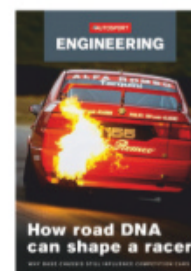
- 48 Try six issues for £1 each

VISIT AUTOSPORT.COM

For other ways to read Britain's best motorsport weekly

FREE INSIDE

ENGINEERING SUPPLEMENT



How much does a road car influence the competition machine on which it's based? We talk to leading engineers to find out.



DUTCH GP SET TO RETURN TO

FORMULA 1

The success and popularity of Red Bull Formula 1 driver Max Verstappen is set to trigger the return of the Dutch Grand Prix, with Zandvoort poised to replace Barcelona on the 2020 Formula 1 calendar.

Momentum has been building, in the wake of Verstappen's recent success, for the world championship to return to the Netherlands for the first time since 1985 (above). A senior source has confirmed that a contract has been agreed between F1 and the Zandvoort promoter, but as of last week it had not yet been signed. If, as expected, Barcelona drops off the calendar, it would allow Liberty to put Zandvoort into the early-May slot ahead of Monaco.

Barcelona is one of five circuits with expiring contracts at the end of 2019, along with Silverstone, Hockenheim, Monza and Mexico City. All face financial challenges, but Barcelona is widely regarded as the most vulnerable after losing government support, and the Spanish GP would drop off the calendar if a Dutch round joins.

Officials at Zandvoort have one year in which to transform its circuit, currently hosting almost exclusively national and regional-level events, into an F1-standard venue. Last month, Zandvoort CEO Robert van Overdijk said the track held a "1-0 lead in stoppage time" in its bid to get onto the schedule, having first secured an exclusivity agreement with F1 that expired at the end of March.

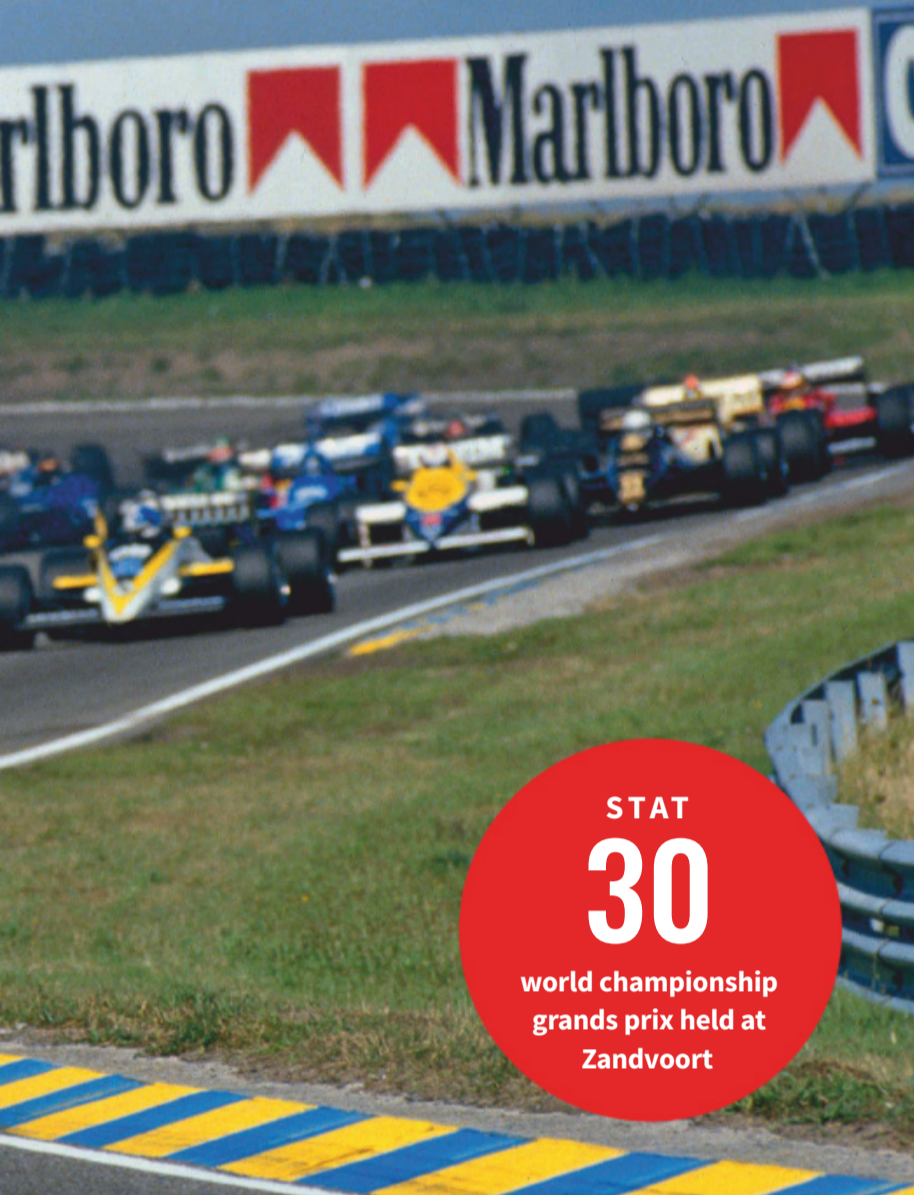
But negotiating the deal's final details will only

be the end of one phase of reviving the race. Previously home to 30 world championship grands prix, Zandvoort's only non-domestic events this year are the World Touring Car Cup and Blancpain GT, following the loss of the DTM and European Formula 3. Major work has been undertaken since the last of its F1 races, but Zandvoort remains very underdeveloped compared to the venues with which it would share the 2020 F1 calendar.

Unsurprisingly, the key area organisers must address if it is to become an appropriate F1 circuit again in barely a year is the track itself. The late Charlie Whiting said last year that Zandvoort would need "relatively minimal" changes to host F1 again but that there was "great potential" for the circuit.

As well as a longer start/finish straight for DRS purposes, it is understood that three corners would need extra runoff: Tarzanbocht (the first corner), Scheivlak (a fast right-hander) and Kumho (the penultimate right-hand turn). Tarzan and Kumho have large gravel traps on the outside, while Scheivlak also has one behind a narrow stretch of grass. Verstappen has also said that the layout would need some changes to allow the cars to follow better.

As well as transforming Zandvoort into a Grade 1 circuit that can host F1, further upgrades will need to be made to its facilities. The pit buildings and media centre have been updated but they are unlikely to be of an appropriate quality. Temporary stands will likely be erected as there is only one permanent grandstand on the start/finish straight,



STAT
30
world championship
grands prix held at
Zandvoort

F1 CALENDAR

plus the dunes that line the circuit.

To deal with logistical challenges, organisers are working on a ticketing plan that stops individual visitors travelling to the circuit by car. The idea is to encourage arrival by public transport or bike, or persuade spectators to stay locally to the circuit.

Serious investment will be required after the national government opted against supporting the race financially, although €4m of local funding has been secured. MotoGP and DTM host venue Assen had also been lobbying for the right to revive the Dutch GP and had been considered a ready-made back-up should Zandvoort fail to find the funding.

But the Netherlands' sports council published an open letter to the Dutch parliament, minister of sport and vice-minister of economic affairs – as well as the cities, circuits and provinces of Zandvoort and Assen, plus Formula One Management. Informed by conversations with both circuits and FOM, it stated that Assen is not an option, and implored the national government to get behind a Zandvoort F1 race.

That has not happened, and securing the necessary budget is one of several hurdles for Zandvoort bosses to clear with only one year until the race would be taking place. “In the Netherlands we are used to organising big events within a limited period of time,” said van Overdijk. “Organising is in our DNA, in almost every industry. So I’m not worried about that at all.”

SCOTT MITCHELL AND ADAM COOPER



Work begins on Hanoi track for Vietnam GP

FORMULA 1

The first images of the new permanent facility for the Vietnam Grand Prix, set to make its debut on the Formula 1 calendar in 2020, have been exclusively revealed in Autosport sister magazine *F1 Racing*.

Computer-generated images of the pit building display how the new facility will look. Situated in an area 20 minutes from downtown Hanoi, in the Nam Tu Liem district, work is being undertaken to clear an area and construct a brand-new permanent pit and paddock.

Two-thirds of the track will use public roads already in place, while the high-speed twisty final section of the lap and the start/finish straight are being built from the ground up. The circuit is characterised by wide long straights – the longest of which is 1.5km – connected by roundabouts into long braking zones and tight hairpins. The intention is to create a street circuit with overtaking opportunities more akin to Baku than Monaco.

“There was a close cooperation with the team at Formula 1 and the organisers at Hanoi to design the circuit,” says Carsten Tilke, the managing director of Tilke who is also responsible for the day-to-day operations of the company. They had a lot of input and we had many discussions about how we could create a good circuit, not only from a driving perspective but to offer a lot of overtaking too.

“Of course, we are fixed to some given streets – which are basically the straights – but through simulation tools we have been able to create the best track possible.”

The corner at the end of the long 1.5km straight will feature grandstands on both sides of the track to create what Tilke describes as a “stadium” section. The plans for the track are based on a spectator attendance of up to 100,000.

The section Tilke is most excited about is the final part of the lap, which allowed his design team to be free-thinking as there are no existing roads forcing compromises. He describes it as very technical, as well as high-speed, with little runoff and no margin for error.

“The whole track has a nice combination of fast corners and long straights, so it will be difficult to find a good set-up for the teams,” he says. “Our simulations have shown it will offer good racing and plenty of overtaking options. It will be difficult to get a good lap time as it will be very easy to make a mistake, so hopefully the drivers will like the challenge.”

Tilke’s architects and engineers have 18 months to get the track finished from scratch, and in early April five engineers moved to Hanoi to work full-time on the project. “The design and planning process is quite far down the line,” said Tilke. “Almost everything is ready, but the construction has only just started. The groundbreaking ceremony was in late March and now we have to get a lot of machinery on site.

“We have been given until the start of next season for Hanoi to be ready.”

JAMES ROBERTS



FOR MORE
SEE THE MAY ISSUE OF
F1 RACING MAGAZINE



F1 closes on removal of 'elephants' to finalise 2021 rules

FORMULA 1

The negotiations over Formula 1's 2021 overhaul still have "a few elephants in the room" but are drawing towards an October conclusion in a bid to make things fairer for all teams.

Teams have been left to consider the framework for sweeping regulatory, financial and governance changes laid out by F1 and the FIA in a key meeting at the end of March.

Although the FIA's stipulated June deadline is unlikely to be met, with an October compromise looking probable, team bosses believe the end is finally in sight. "It feels like we're converging," said Red Bull team boss Christian Horner. "There are still a few elephants in the room. Hopefully over the next few months something can get sorted."

As Autosport revealed earlier this year, teams have pushed for a delay in publishing the new 2021 regulations because of fears that going too early with them could hand a huge advantage to the bigger squads.

If the rules were finalised by June, as they need to be under the FIA's own International Sporting Code, then the better-funded teams could immediately start early work on their designs. Conversely, smaller teams could struggle to find the resources for advance 2021 preparations at a time when

their focus is already taken up with 2019 development and work on 2020 designs.

To get the date moved back from June requires unanimous support from the teams, and there was some scepticism about whether a mooted December option could still benefit the top teams just as much because their resources mean they could do more in a shorter timeframe. Following discussions at the recent Azerbaijan Grand Prix with teams and F1 chairman Chase Carey, the idea of an October compromise for the regulations has found some consensus.

Horner (above), who initially proposed the December delay, thinks the October date would work for both big and small teams. Mercedes boss Toto Wolff said there were valid arguments on both sides of the debate, but pledged that his team would not block the October plan if the rest of the pitlane was agreed on it.

"Personally I'm in two minds, but I probably would want to support Chase and Ross [Brawn, F1 sporting boss] and Nikolas [Tombazis, FIA single-seater chief]," said Wolff about the idea of a delay until October.

Horner said that "amongst the teams there has been unanimity", claiming that Renault was unsure but "got there in the end".

SCOTT MITCHELL

Alonso: I'll be back in World Endurance

WORLD ENDURANCE CHAMPIONSHIP

Fernando Alonso has insisted that he is only taking a "short break" from the World Endurance Championship. The two-time Formula 1 world champion may be leaving Toyota's WEC squad at the end of the 2018-19 season, but he's vowed to return to the series sooner rather than later.

"In the medium term and long term, 100% I will come back to WEC, because it is a series I really enjoy," he said in the wake of last week's announcement that he will not be staying in the championship for 2019-20. "I like the type of racing here, I like the unpredictability of the racing with all the traffic, and I like the team spirit of sharing a car with team-mates."

Alonso also shed light on his decision to leave Toyota after one season in which he sealed the Le Mans 24 Hours leg of the triple crown he so craves at the first time of asking last year. He wanted to leave himself free to take up other opportunities that may arise for 2020, and couldn't commit to Toyota for a season that won't finish until June next year.

"To commit to the new season until June 2020 was closing [the door] on some of the opportunities that may come later in the year," he explained. "Being free of any obligations is the best way I could approach those opportunities."

Exactly what Alonso is holding out for isn't clear. He isn't ruling out an F1 return or a full season in the IndyCar Series after his second crack at the Indianapolis 500 this month. "It could be F1 in 2020, it could be IndyCar, it could be a different series outside of all this," he said.

Alonso once again raised the prospect of competing in motorsport disciplines new to him. He said he had "two or three ideas in my mind" that would "continue this challenge of mastering different types of motorsport". One of those is the Dakar Rally. Alonso is known to be in talks to contest next year's rally-raid in Saudi Arabia with Toyota after testing one of its Hilux contenders in March.

GARY WATKINS

➔ P36 WEC SPA REPORT





NASCAR The NASCAR Cup contenders had to wait a day before they finally ran their race at Dover, which was rained off on Sunday and held on Monday instead. Martin Truex Jr (19) charged from the back of the grid – after a scrutineering failure – to take his second win of the season in his Joe Gibbs Racing Toyota. Truex passed Alex Bowman on the final lap of the second stage, Bowman going on to take second from Kyle Larson. **Photograph by Jarrett/NKP**

Teams fear hybrid rules being left too late

WORLD RALLY CHAMPIONSHIP

What is it about gravel and electric? They just don't mix. At least not for now. World Rallycross has failed to secure the necessary support to electrify its future and now the World Rally Championship is, apparently, struggling to meet the looming deadline that is a hybrid 2022 WRC.

WRC rally director Yves Matton (right, top) has confirmed that hybrid will be the way forward, and told Autosport he intends to decide technical regulations next month.

"It's too early to tell you exactly what 2022 will look like," said Matton. "Normally in June we will introduce the first principles and, at the end of the year, the intention is to have a technical regulation published with all the technical principles. After that we still need some time to fine-tune this. The idea is for the teams to be able to start working on their cars at the start of next year."

But that timeline is unpopular with the teams. One senior source told Autosport: "If we'd been doing this ourselves, we would have been a year ahead of where we are now. There's simply not enough detail. OK, next

month we hope for something on paper, but this is really on the limit for 2022."

Autosport understands that the FIA will supply common parts including motors and batteries for 2022. The intention is for hybrid to function on road sections and in service; that's the first level of regulations, while a second tier of rules will follow further down the road incorporating the potential to use a hybrid boost in the stages and in competition.

Toyota chief engineer Tom Fowler admitted his concerns lay with reliability for 2022. "It's going to be a very difficult technical challenge to get hybridisation into the sport," he said. "We see such a variation in conditions in the championship and we all know how big a topic reliability is."

"Even with an internal combustion engine driving four wheels that has been the same for decades, we still have issues. As soon as we go to a whole new technology and start to drive up mountains in extremely high and extremely low temperatures with a hybrid system, it's going to be a massive challenge."

DAVID EVANS





Audi wants to send DTM cars to Super GT

SUPER GT

Audi is making very positive noises about sending its RS5 DTM car to Japan's Super GT series – if differences in sporting regulations can be ironed out.

Audi sports boss Dieter Gass says he is keen to take advantage of the unification of DTM and Super GT under the Class 1 regulations, and that the marque's Japanese importer wants a programme. But while the DTM runs on control Hankook tyres, Super

GT features a tyre war between Yokohama, Bridgestone, Michelin and Dunlop.

"The major worry is the tyre situation," said Gass. "That means if you want to go there and be at a competitive level, potentially you need to do quite some significant testing. Which puts us in a difficult situation with the German regulations, because testing is not allowed. So there are a few open questions that need to be fixed before we can really think about that. But the interest is there."

SUPER GT LIVE ON MOTORSPORT.TV

Motorsport.tv kicked off its live-streaming of the Super GT Championship with last Saturday's Fuji round. It's available for free across the globe – with the exception of Japan, Malaysia and Thailand – and Motorsport.tv is providing live commentary in English and French of every remaining race, which can be watched later on-demand.

MARCUS SIMMONS

➔ P49 SUPER GT FUJI

Le Mans pits revamp for centenary

LE MANS 24 HOURS

The giant edifice of the Le Mans pits complex is set to undergo a major transformation over the next four years, with the building redeveloped in time for the centenary year of the Le Mans 24 Hours in 2023.

The current structure, built for the 1991 edition of the 24 Hours, is not going to be ripped down. Rather the plan of race organiser the Automobile Club de l'Ouest

is to redevelop what exists and, most likely, increase the number of pit boxes.

"The plan is to take the existing building, keep the walls and do something new inside," said ACO sporting director Vincent Beaumesnil. "It would take too long and be too expensive to create a completely new building."

The exact plans have yet to be defined, stressed Beaumesnil. "We have defined different targets with regard to the garages

and everything else inside the building," he said. "At the moment it is all under evaluation and we have yet to define the budget."

Exactly how many cars the reworked pits complex will accommodate is not clear. The ACO had already declared an intent to allow more cars to start the 24 Hours before it announced plans for a pair of temporary garages for this year's race, bringing the grid up to 62.

GARY WATKINS



SBLOXHAM
motorsport
IMAGES



Aston up for Silverstone

BLANCPAIN GT ENDURANCE

Aston Martin and the R-Motorsport squad are in bullish mood ahead of this weekend's Blancpain GT Series Endurance Cup encounter at Silverstone as they attempt to pull off a repeat of their victory in the corresponding fixture last year. They believe that the new-for-2019 Vantage GT3 that led the Monza series opener last month should be a more competitive proposition at the British track than its predecessor.

Jake Dennis, Nicki Thiim and Matthieu Vaxiviere claimed victory on home ground 12 months ago aboard the outgoing V12 Vantage GT3 contender, which lacked the downforce of its successor. That's why Aston is hopeful of being right in the mix during Sunday's three-hour race with the new car after an encouraging outing at Monza.

"The V12 Vantage lacked a bit of downforce and that's something we have addressed with this car," said Aston Martin Racing technical director Dan Sayers, who led the development of both the new V8-powered GT3 and its GTE-class cousin that races in the World Endurance Championship. "It's a very different beast and of all the circuits Silverstone, with so many fast corners, should be one of our best."

R-Motorsport, which is jointly run by the British Arden and Jota teams, led the race at Monza with the car shared by Dennis, Thiim and Marvin Kirchhofer. A puncture and a drivethrough penalty for a pitlane infraction ultimately removed the car from contention, though the Garage 59 entry driven by Jonny Adam, Come

Ledogar and Andrew Watson notched up a top-10 finish for the new Vantage.


The Astons went into the series opener with what Maxime Martin, who shares the sister car with Vaxiviere and Matt Parry, called a "not so good" Balance of Performance. "The organisers are always a little bit conservative before they see what you can really do with a new car," said Martin. "We were a little bit on the back foot at Monza, I think."

The new Vantage will run 20kg lighter this weekend than at the first round and also has a more favourable turbo-boost curve, which means more power. The Porsche 911 GT3-R that won in the wet-dry race in Italy is also lighter by 20kg, whereas the Bentley Continental GT3, for example, is 15kg heavier.

But it's not a like-for-like comparison. Silverstone is what series organiser SRO calls a category C track, whereas Monza is category A, and the BoP is calculated to reflect the different characteristics of the different types of circuit.

Jota boss Sam Hignett warned that there can be no guarantees of victory in one of the most competitive sportscar series in the world. "There are so many strong cars that you can be right there on pace, but still end up P15 in qualifying – it can really be that close," he said. "You need the stars to align and put together the perfect weekend to win in the BGTS, but I would say that we are more positive going into this weekend than we were last year."

GARY WATKINS

 **motorsport.tv**
Livestream this race at Motorsport.TV
Race Sun 1445

IN THE HEADLINES

F1 Q4 PLAN LOOKS TO BE OVER

Plans for a tweak to Formula 1 qualifying to increase it from three stages to four appear to have finally bitten the dust. Sporting regulations for 2020 have been published with the current system in place, instead of the mooted four stages, under which four cars would have been eliminated after each of Q1, Q2 and Q3. Simulations had led teams to conclude that, without an extra tyre allowance, Q4 would be an anti-climax.

WILLIAMS TO GET COMPENSATION

Azerbaijan Grand Prix officials have confirmed that Williams will get compensation for the damage caused to George Russell's car when it hit a loose drain cover in free practice in Baku. Promoter Arif Rahimov said: "We have checked again our insurance policy and it is fully covered. Our legal department is talking to Williams' legal department and they will be reimbursed in full."

ALESSANDRO BONACINI 1980-2019

Experienced sportscar driver Alessandro Bonacini died last week in a helicopter crash. The 38-year-old Ferrari regular won the 2016 Blancpain GT Series Endurance Cup pro-am title with Kessel Racing and was also a race winner in the GT4 European Series in 2014.

VENTURI ENTERS EXTREME E

Venturi Automobiles, the parent company of the Venturi ABB FIA Formula E squad, has become the first entrant for the Extreme E electric off-road SUV series. Venturi will take delivery of its XE machinery in March 2020, when Spark Racing Technologies – recently announced as the championship's base-chassis supplier – will deliver the 12 cars that will enter the first XE season. This is slated to get under way in January 2021.

AF CORSE TO RUN IN LMP2

AF Corse is heading back to the prototype ranks in the World Endurance Championship. AF, Ferrari's factory GTE Pro squad, will field an LMP2 Dallara-Gibson P217 from the 2019-20 series opener at Silverstone in September under the Cetilar Racing banner. Cetilar, a brand of the Italian PharmaNutra drugs company, is swapping allegiance from Villorba Corse, with which it has raced in the European Le Mans Series since 2015. Drivers are sportscar stalwart Andrea Belicchi, Giorgio Sernagiotto and PharmaNutra managing director Roberto Lacorte.

CHANGES FOR DUTCH SQUAD

LMP2 team Racing Team Nederland is likely to switch from Dallara to ORECA chassis for the 2019-20 WEC. It is also set to move its team to the French TDS Racing squad, after running with Dayvtec in the 2018-19 series.

F1 SPANISH GRAND PRIX PREVIEW



LENGTH 2.892 miles NUMBER OF LAPS 66



Spanish Grand Prix
Circuit de Barcelona-Catalunya
12th May 2019



2018 POLE POSITION
Lewis Hamilton 1m16.173s

POLE LAP RECORD
Lewis Hamilton 1m16.173s (2018)

RACE LAP RECORD
Daniel Ricciardo 1m18.441s (2018)

UK START TIMES

Friday 10 May

FP1 1000
FP2 1400

Saturday 11 May

FP3 1100
QUALIFYING 1400

Sunday 12 May

RACE 1410

CATCH THE RACE LIVE

SKY SPORTS F1
BBC RADIO 5 LIVE
SPORTS EXTRA

HIGHLIGHTS

CHANNEL 4 1900

TYRE ALLOCATION

HARD

MEDIUM

SOFT



C1



C2



C3



C4



C5



INTERMEDIATE



WET

CHAMPIONSHIP

Drivers

1	Bottas	87
2	Hamilton	86
3	Vettel	52
4	Verstappen	51
5	Leclerc	47

Constructors

1	Mercedes	173
2	Ferrari	99
3	Red Bull	64
4	McLaren	18
5	Racing Point	17



MOTORSPORT IMAGES/HONE

TRACK STATS

Previous winners

2018	Lewis Hamilton	Mercedes
2017	Lewis Hamilton	Mercedes
2016	Max Verstappen	Red Bull
2015	Nico Rosberg	Mercedes
2014	Lewis Hamilton	Mercedes
2013	Fernando Alonso	Ferrari
2012	Pastor Maldonado	Williams
2011	Sebastian Vettel	Red Bull
2010	Mark Webber	Red Bull
2009	Jenson Button	Brawn



Barcelona's beautiful Montjuic Park hosted four GPs. Here's Jean-Pierre Beltoise, third for Matra in 1969

MOTORSPORT IMAGES

Barcelona masters

Average points per race at Barcelona from the current F1 drivers. Races before 2010 converted to current points system.	Vettel	13.09
	Hamilton	12.50
	Verstappen	10.00
	Ricciardo	8.43
	Bottas	8.33
	Raikkonen	8.19
	Kubica	7.00
	Sainz	5.50
	Perez	3.25
	Grosjean	3.00



That 'Rosberg moment'

Valtteri Bottas has made an impressive start to the season, but the switch from being Lewis Hamilton's wingman to his title rival requires another crucial step

EDD STRAW

Something Lewis Hamilton said after finishing second to Mercedes team-mate Valtteri Bottas in the recent Azerbaijan Grand Prix was very telling. It proved that, while the Finn has made a strong start to the season, the reigning world champion doesn't see him as a serious title threat. If – and it's a big if – he ever does, it will become very obvious.

"Selfishly, I could have pushed a lot harder and Valtteri would have lost positions and I would have gained positions," said Hamilton. It's true that he could have forced Bottas wide earlier in the first corner and hung him out to dry, which is exactly what he would do to a title rival. That's why Bottas needs what might be termed his 'Rosberg moment'.

Hamilton will still be absolutely certain that he has Bottas covered despite being a point behind in the championship. While he was outqualified by Bottas in Baku, historically it's not a Hamilton circuit. Even then, despite a bad first sector on his final Q3 run, Hamilton was set to beat Bottas until a moment in Turn 16. It was a similar story in China, where Bottas took his other pole. As for the Australia race reverse, it was the consequence of the start, compounded by Hamilton's floor damage.

This run of form is not really about Bottas usurping Hamilton as the Mercedes leader. That would be a Herculean task, for Hamilton is one of the all-time greats at the peak of his powers.

"It's a credit to his fortitude that he's picked himself up, dusted himself down and started so well"

But having ended last season seemingly a busted flush, one who cut a desultory figure and couldn't wait for 2018 to end, this is about Bottas re-establishing himself. It's a credit to his fortitude that he's been able to pick himself up, dust himself down and start the year so well. That's a quality he shares with the aforementioned Nico Rosberg.

While all three of Bottas's Mercedes seasons have started positively, things are a little different this year. He has come in with a harder edge, determined to do things his way. There's also been a change in personnel around him, with Rosberg's former race engineer at Mercedes and Williams, Tony Ross, joining the Mercedes Formula E programme. To replace him, Riccardo Musconi moved over from Hamilton's car, where he was performance engineer.

Bottas knows he has a tenuous grasp on his Mercedes seat – the presence of Esteban Ocon in the garage is a constant reminder of that. What will be decisive is that he sustains this form and doesn't repeat the declines of 2017 and 2018.

"I've been maybe a bit more direct and more, let's say, aggressive in the sense of how big changes we've been making in practice and what kind of set-up directions we've been taking," said Bottas in Baku of his 2019 approach. "As the years go by, you gain confidence in knowing exactly what you need from the car and how you feel the car will be quicker for you. I've definitely improved in that sense.

"I also have a new core engineering team, with a new race and performance engineer. That also brings many different ideas to the table and a different way of thinking, which then makes me also think different things on the set-up – what will work with me and for the car. So there's been big development there from my side, and something I'm to keep learning and keep carrying on for the season."

Bottas does get the best out of slightly different car characteristics to those Hamilton favours, which is why he's generally performed better early in the season while the car is still being dialled in. Hamilton is at his best when able to late-brake, rotate the rear aggressively on entry and pivot around a strong front end, which isn't Bottas's forte. Hence when the front end is weaker, such as on the lower-grip smoother circuits where Bottas excels, he can be as quick and sometimes quicker. That doesn't mean Bottas sets his car up for less grip, but can tinker with the balance and the dynamics on entry to get the car to respond his way on entry and hustle into the turn.

If Bottas sustains his performance, what he then needs is the Rosberg factor. Neither Rosberg nor Bottas has a reputation for being the most effective wheel-to-wheel racer on the grid. Rosberg had to push himself to find that extra level of aggression, and Bottas is in a similar position. Rosberg used that to rile Hamilton in battle at times, for example when they collided at Spa in 2014. That's one way Bottas could have his Rosberg moment, announcing himself as a title contender by forcing contact on track.

But that's the high-risk strategy, albeit one that could follow from a subtler 'Rosberg moment'. The moment, if it ever comes, that would herald the breakthrough will be when Hamilton feels obliged not to give Bottas what may be termed generous space in battle. If that happens, Hamilton's on-track demeanour will make it unmissable.

But until that happens, Bottas will always be cast as wingman. And whether that's enough to hang onto his seat, only Toto Wolff really knows. ❁



Winning teams test at Portimão Circuit.

What's your kind of team?

Portimão Circuit is one of the most challenging racing tracks in the world, demanding extra skills from both driver and machine. If you add the amazing all year round weather, it isn't hard to find out why it is the perfect testing platform for many racing teams. And why most of these teams become championship winners.

FIA/FIM HOMOLOGATED RACING TRACK | GO-KART TRACK | OFF-ROAD TRACK



- 24h TESTING
- ACCOMMODATION
- CATERING
- TRANSFER





When new rules aren't new

The rules of combat haven't changed in the BTCC this year, but the arrival of a document has made many people think they have – and is causing paddock ructions

MATT JAMES

Subjectivity can be a cruel mistress, but it is often the way any driver, or fan, judges their motorsport. In the bumper-to-bumper cauldron of the British Touring Car Championship, who is at fault for incidents can be a moot point.

Who was to blame? Why *did* it happen?

But there are steadfast regulations that mean contact is probably better-researched, analysed and assessed than in any other category outside Formula 1. There are a raft of onboard monitors that check a driver's every move, and all of these are accessible to officials afterwards. The regulations stipulating onboard cameras and the data traces that are available to the BTCC officials make sure of that.

But there are also the basics – the rules of combat – that are pointed out to every driver in every drivers' briefing. This year for the first time, though, they have been written in black and white, and every competitor has a copy.

One of the central tenets of this is that if a driver gains an 'unfair' position through contact, they are at liberty to restore order themselves. Simply back off and give the place back. Imagine asking a driver to do that... It will never sit well in the self-centred world of a racer.

Stephen Jelley was on course for Team Parker Racing's best-ever result in race three of the BTCC opener at Brands Hatch at the start

“Having the rules in black and white seems to have had a profound effect on the drivers”

of April when he collided with Matt Neal's Team Dynamics Honda Civic going into Graham Hill Bend, delaying them both.

But Jelley, and more importantly team boss Stuart Parker, knew the rulebook. Jelley explains: “In the drivers' briefing, they had reiterated the rules and actually given us a document with driving guidelines on them – which is the first time we have had that. I knew, because it was the first round, that they would be hot on it.

“In my mind, I knew I had to [give the place back],” adds Jelley. “A driver knows when a move is fair and is not. And I knew in my heart it was the right thing to do to not risk a penalty. In my mind, landing a good result at the front was worth more than risking it all to argue the case with the officials afterwards.”

Jelley eventually finished third anyway, but he had done something unusual. It is not often that a driver – certainly

in tin-tops – volunteers to give up position.

But this seems to have laid down something of a marker. The rules, although not different, are front and centre of drivers' minds right now. They are a key talking point at this stage of the season.

Take, for example, Andrew Jordan's accident at Donington Park last month, which left the WSR BMW 330i M Sport driver in hospital. He had gone into the Old Hairpin toe-to-toe with Rob Collard's Power Maxed Racing Vauxhall Astra. The two collided and it sent Jordan's machine spinning in front of the pack. The resultant side impact on the driver's door left the Pirtek man perplexed and wondering where the line is. Collard protested his innocence in the move, but it sent tongues wagging again.

Jordan said: “[The BTCC officials have] said it is a racing incident, which I find quite funny because the written thing that we got said that you had to be at the B-pillar of the car ahead [if you are going to overtake]. I've got a rub just in front of my right-rear wheel. Last time I checked that wasn't the B-pillar.”

That incident is under appeal because WSR and Jordan think there is more to be investigated. The results will be known after the circus reconvenes at Thruxton on 18–19 May.

But, as series chief executive Alan Gow points out, these are not new rules. They are known to each driver through the messages they get from the clerk of the course at the start of every meeting. “Nothing we are doing this year is different to what we have told the drivers before,” explains Gow. “Of course, each incident will still be judged on its own merit because there could be other circumstances involved, but we have guidelines that every driver is fully aware of.

“Matt Neal came to us after he had contested the Bathurst 12 Hour earlier this year and showed us what they had been issued with over there in terms of driving etiquette – it was a proper document, so that gave us the idea to do the same thing for the British Touring Car Championship. It has not changed what we do – it just means it's in black and white.”

And that seems to have had a profound effect on the men on the grid. It's the thing on everyone's lips. “Just because you don't see it on TV, it doesn't mean it hasn't happened before,” says Gow.

The now-written-down BTCC driving-standards guidelines also cover several other issues, with a firmly set-down roster for what a driver can do to defend a position, as well as the procedure in qualifying.

While nothing is new in the BTCC for this season (*apart from the BMW 3 Series and Toyota Corolla! – ed*), the onus has now been placed very firmly on the drivers, and the avenues for them to police themselves have been reinforced.

Gentlemen, it's over to you. ✎

"...this is a game worth checking out."

Operation Sports

"...more than enough to please any racing fan."

MyGamer.com

"NASCAR Heat 3 is easily the best stock car racer we've seen in years."

SportsGamersOnline.com



N A S C A R
 **HEAT 3™**

NASCARHeat.com

FREE TRIAL OUT NOW!



NASCAR® is a registered trademark of the National Association for Stock Car Racing, Inc. and used under license. All other car, team and driver images, track names, trademarks and other intellectual property are used under license from their respective owner. © 2018 704Games. 704Games is a trademark of 704 Games Company. All rights reserved.

YOUR SAY

Proposals to alter the format of qualifying are all well and good, but why not do something really radical, rather than make changes for the sake of it?

MICHAEL BRIERLEY

Why tinker when you can shake things up?

Once again, proposals to alter the format of qualifying are all well and good, but why not do something really radical, rather than make changes for the sake of it?

Many agree that short of the old one-hour shootout, currently we have the best format that has been come up with, thus there seems little need to change things. Why not therefore do something different that might give added interest to a race weekend?

Run practice as normal and then have a qualifying race on Saturday afternoon. The grid for this could be decided on reversed championship position, practice times or just anything that mixes things up.

After every lap of said race, the driver running last is knocked out and the order in which they finish sets the grid for the race proper. Potentially, this causes mixed up grids for the main race and in theory forces everyone to drive to the maximum at all points over the weekend.

Spectators would feel like they were getting double value for money and promoters would feel like the whole weekend seems a proper event.

Michael Brierley
Stalybridge, Cheshire

Aren't numbers supposed to be visible?

Back in 2017, I seem to remember the FIA bringing in a ruling whereby the driver's number on a Formula 1 car had to be visible from both the front and the side of the car.

I also seem to recall that Force India (pictured), as it was then, received a penalty because the number on the front of both cars was on the flat top of the chassis/bulkhead area, rather than on the sloping nose, and was therefore not visible in a head-on view. Lo and behold, at the following race both cars had the number fully visible from the front.

Fast-forward to 2019, and both Red Bulls have the front number in exactly the same place as Force India had in 2017, ie on the top of the chassis/bulkhead area, rather than on the sloping nose, and it cannot be seen in a head-on view.



This is perfectly demonstrated in the photograph on page 25 of last week's Autosport, where the #20 car of Haas driver Kevin Magnussen is being passed by the #?? car of Red Bull driver ??.

Haven't yet heard any mention of penalties heading Red Bull's way...

Ian Brown
Fareham, Hampshire

Points make prizes

Adam Cooper's interesting column last week, headlined Making a (Racing) Point, somehow seems to miss the point that you need two quick drivers if your team wants to finish high in the points.

It's very obvious that, likeable chap though he is, Stroll Jr is slow. Stroll Sr must have cash to burn if he does not put the team first over his son.

Get Ocon back in the car and watch the results come in from two drivers, not just Perez.

Mike Kelly
London


HAVE YOUR SAY, GET IN TOUCH


Autosport editorial
Autosport Media UK Ltd
1 Eton Street
Richmond
TW9 1AG

@
E-mail
autosport@
autosport.com


Visit our website
autosport.com


Twitter
twitter.com/
autosport


Facebook
facebook.com/
autosport


Instagram
instagram.com/
autosport


YouTube
youtube.com/
AUTOSPORTdotcom

INSIGHT

BATTLE TO BEAT HAMILTON • F3 PREVIEW • STEVE McQUEEN'S LOST MOTORSPORT MOVIE

THE YOUNG GUN

Charles Leclerc is leading

MAX VERSTAPPEN

AGE 21
STARTS 85
WINS 5
POINTS 721

GEORGE RUSSELL

AGE 21
STARTS 4
BEST FINISH 15TH
POINTS 0

LANDO NORRIS

AGE 19
STARTS 4
BEST FINISH 6TH
POINTS 12



S AIMING FOR LEWIS

a new wave of drivers who have the potential to replace Hamilton at the top of the tree

EDD STRAW

PHOTOGRAPHY  motorsport
IMAGES

CHARLES LECLERC

AGE **21**
STARTS **25**
BEST FINISH **3RD**
POINTS **86**

ALEXANDER ALBON

AGE **23**
STARTS **4**
BEST FINISH **9TH**
POINTS **3**

ESTEBAN OCON

AGE **22**
STARTS **50**
BEST FINISH **5TH**
POINTS **136**



MAUGER



Hamilton already respects Leclerc and praised him in Bahrain

GALLOWAY



Leclerc is learning about racing against Hamilton in 2019



HONE

One of the eternal truths of elite sport is that there's always someone pushing to usurp you. Every empire falls eventually, and throughout the history of grand prix racing the established top guns have faced down the challenge of the thrusting young superstars bidding to oust them. The aim: to delay the inevitable and stay on top for as long as possible. They will lose the fight eventually, age will always see to that, but the true greats dig in and continue to raise their game – for a while at least – before ceding.

In Formula 1 today, Lewis Hamilton is the established star. At 34, he is better than ever and has showed no signs of decline – meaning he could stay on top for years yet and rack up who knows how many wins and championships. His arch rival, in recent years, has been Sebastian Vettel, a four-time world champion who, at 31, apparently has a shakier grip on his place at F1's top table. But, like Hamilton, Vettel has been there, done that and commands leadership of one of grand prix racing's greatest teams. Both are there to be shot at.

For several years already, they have been under pressure from Max Verstappen. An F1 racer at 17, he's a freak of nature who already has five grand prix wins to his name at the age of 21 and should bring up his century of starts later in 2019. Verstappen is in a curious position, an outstanding performer who has proved his ability time and time again to the point where perhaps no driver in history can be so confidently predicted as a future world champion – given the right car (or should that be engine). A Verstappen versus Hamilton title fight would be something to savour.

There has also been the challenge of what might be termed the 'in-between generation', perhaps exemplified by Daniel Ricciardo and Valtteri Bottas – both race winners but neither champions. These are among the drivers who Hamilton has successfully faced a sustained challenge from over the past few seasons.

But this year is different. The arrival of 21-year-old Charles Leclerc at Ferrari means there is a new-generation wave building. The Monegasque's unrewarded 'victory drive' in Bahrain is proof of that, as was Hamilton's exchange with him in the podium antechamber after the race:

Hamilton: *You drove great this weekend man.*

Leclerc: *Yeah.*

Hamilton: *You really drove fantastic man.*

Leclerc: *Until the problem.*

Hamilton: *Hey man, you've got a long old future ahead of you so...*

Leclerc: *I hope so.*

Hamilton: *I know it sucks in this moment, but you've got a long, long way to go.*

Leclerc: *Thank you so much.*

Hamilton knows exactly what it's like to be a young man in a hurry in F1. He was 22 when he got his big break with McLaren, ostensibly

“I SEE MUCH OF MYSELF IN CHARLES. HE'S DOING A GREAT JOB ALREADY SO FAR. IT WILL COME TO HIM”

as a support act to reigning double champion Fernando Alonso. He passed his team-mate at the first corner on his debut, forced a team orders row in his fifth start, won on the sixth and played the key role in Alonso's eventual departure from the team.

“He's a little younger than I was, by a year or so, but absolutely yes,” says Hamilton when asked about the similarities between Leclerc's situation and his own 12 years ago. “I remember wanting to get to F1 as quickly as possible and then when I got there I wanted to win as soon as possible and I wanted to beat the champion that I was racing against. So very similar.

“I see much of myself in Charles. He's doing a great job already so far. With really high expectations at a huge team like Ferrari he's driving very well, so he just has to keep doing what he's doing and it will come to him.”

Hamilton has achieved enough in F1 not to be threatened by the rise >>

F1'S GENERATIONAL BATTLES

During the past four decades, Formula 1 has been the stage for some hugely significant battles of the young taking on the old. These fights can't simply be defined by age, for eras aren't always as neatly divided, but both in retrospect and at the time, these were critical battles for what would ultimately be dominance. But it was never long before a new pretender came along.



HAMILTON VERSUS ALONSO, 2007

While there was only three years between McLaren team-mates Lewis Hamilton (22) and Fernando Alonso (25) in 2007, this was one of the classic tales of an upstart rookie upsetting an established star. Double champion Alonso had his hands full fighting Hamilton, ultimately leaving McLaren after an acrimonious season. Despite missing out on a rookie-season title, Hamilton did pip Alonso in the championship on countback and, since then, has racked up numbers the Spaniard once looked set to achieve himself.



ALONSO VERSUS SCHUMACHER, 2006

Alonso (24) was already a world champion in 2005, but there was an asterisk against that victory as Ferrari and Michael Schumacher (37) were not competitive. In 2006, there was a full-blooded battle between the two of them – one that ended with Alonso as a double champion and Schumacher heading into his first retirement. It seemed the world was at Alonso's feet, with some tipping him to match or even break Schumacher's records.



of drivers like Leclerc, and appears to thrive with the challenge that they present. It's an invitation to keep pushing, continue improving, test yourself against drivers who had a more focused motorsport education and access to techniques and methodologies Hamilton could not have dreamed of when he was making his way up the ranks. It's the circle of life, the young eventually usurp the old, and while Hamilton has plenty of years ahead of him he's certainly in the thick of middle age as a grand prix driver. And yet, at a time when others might have backed off, he continues to get better. The desire is still there to keep challenging himself to take on the upstarts. But does he see that as a motivational force?

"I'm game for new drivers to come through," says Hamilton. "They come through with new techniques, new driving styles, new aggression, so it definitely is refreshing and it's great to see. Each year I just focus on trying to improve myself as a driver and welcome the new ones that come through."

"WE HAVE SOME REALLY GREAT KIDS. I'VE GOT MY WORK CUT OUT TO TRY TO STAY AHEAD OF THEM"

"We have some really great kids that have come through. I don't look at any of them and think that any of them have looked at me and said they want to be me – I've heard some of them talk about other drivers like [Ayrton] Senna and Michael [Schumacher], but obviously I've been where they are and I can empathise with the experience that they are going through and the challenges they will face in their own way as they race throughout the year."

"In the following years I've got my work cut out to try to stay ahead of them, which gets harder and harder every year."

Vettel is in a more difficult position. While Hamilton is the undisputed king of the castle, Vettel won the last of his four world championships in 2013 and is directly in Leclerc's crosshairs. Before Leclerc can take on Hamilton, he has to establish primacy within Ferrari and he has made an encouraging start. The results might not quite be there, but he should have won in Bahrain and has been quicker than Vettel on two race weekends out of four. It's a very positive start and, as Hamilton says, he'll be determined to break his duck as soon as possible.

"It's not an obsession," says Leclerc when asked if he's impatient to get the victory monkey off his back. "My obsession at the moment is to do the best job in the car and to extract the full potential of it. Then I'm sure the results will come. But I'm impatient for this moment to happen – if it will ever happen. I'll work for that, but I'm not obsessed with it. I don't think it would be a good way to approach the weekends, only thinking about the winning. The only thing I'm obsessed with is getting the best out of the car."

So far, that obsession has paid off. During his rookie campaign with Sauber, Leclerc emerged as an outstanding performer in a congested part of the field. While this year hasn't gone perfectly – notably the crash in Azerbaijan Grand Prix qualifying on a weekend when he looked to have the pace to get that breakthrough win – it has been eye-catching. Vettel clearly has a fight on his hands to assert himself decisively over Leclerc – although it would be premature to count him out yet. Vettel is an adaptable and seriously fast racing driver who didn't win four titles by chance and won't want to fade out of F1 without taking a title with Ferrari.

Vettel also knows full well how determined Leclerc will be. After all, Vettel himself has been there, having made his grand prix debut in 2007 as Robert Kubica's BMW Sauber stand-in at the United States Grand Prix. His drive to a points finish there, on top of his impressive testing performances, forced Red Bull to flick Scott Speed from its Toro Rosso line-up and give Vettel the rest of the year. The following season, he took that famous victory in the Italian GP before earning promotion to Red Bull and dominating F1 from 2010-2013.

"I think it's pretty much the same as me," said Vettel of Leclerc earlier this season, after being outpaced by him in Bahrain. "He's a good kid, >>>



SCHUMACHER VERSUS SENNA, 1994

With Nigel Mansell, Nelson Piquet and Alain Prost out of F1, Michael Schumacher (25) took on Ayrton Senna (34) for the world title. While the battle was tragically cut short by the death of Senna three races into the season, Schumacher had made a superb start. How the season would have panned out if Senna had lived is anyone's guess, but in reality this was a seismic generational shift in F1.



SENNA VERSUS PROST, 1988-90

When Ayrton Senna (28) moved to McLaren, he took on established star Alain Prost (33) in a fight for supremacy. Over two increasingly acrimonious seasons, then a third once Prost had been forced to move to Ferrari, the pair butted heads. Senna took two titles to Prost's one over this period, but never quite vanquished his rival – who returned to win the 1993 crown. Once Prost retired, Senna only had three more F1 starts left.



PROST VERSUS LAUDA, 1984-85

Prost (29) should already have won at least one world championship before he took on Niki Lauda (35) at McLaren in 1984. A combination of unreliability and the wily Austrian's experience meant Prost missed out by half a point, but Lauda fell away dramatically in 1985 and the way was clear for Prost to take the first of four titles over a nine-season period.

he's fast, so has all the ingredients and the reason obviously is proved many times before entering Formula 1 why he deserved the place.

"To work with, he's pretty straightforward. I don't know what you guys imagine on the other side, but I haven't come across a driver that was a pain in the arse. I hope I never will, so that's clear. Then, I said I think prior to the season, for sure it's going to be a different challenge, it's a different person. So it's going to be a new challenge."

Vettel also showed he remembers that desperation to establish yourself, to show you can cut it, from earlier in his career. In Bahrain, he summed it up well: "If you want to win you always have to justify yourself, to prove that ultimately you can go faster than the others. I think it's part of competition, part of our lives and what we grew up with. Maybe some more, some less, but all of us have huge ambition to go faster than the other guys around."

But Leclerc isn't the only one knocking on the door. This season in particular there has been an influx of outstanding young talent.

"FORTUNATELY, OCON HAS THE RIGHT BACKER AND IT'S IMPROBABLE HE WON'T RETURN"

This includes the Brit-pack (including Alex Albon, who describes himself as a London-born Thai), spearheaded by a pair of McLaren Autosport BRDC Award winners – George Russell and Lando Norris.

Russell might appear to be in an invidious position, driving the slowest car in the field and with nobody to beat other than Williams team-mate Robert Kubica. He'd be much happier with a more competitive car but, as he has said right from the start of the season, the pressure is off. He is on the books of Mercedes and therefore a credible medium-term option as a driver for the works team, and knows Toto Wolff will be looking closely at the detail of what he's doing rather than the superficial results.

"I'm enjoying the challenge," says Russell of the difficulties he faces. "It's a very different role for me, my sort of task at the moment is to direct the team and point them in the right areas where we need to focus, and I feel quite a lot of responsibility to try to turn the team around and get us back to where Williams belongs. I'm enjoying that aspect of it, but it's just a shame that it's not a quick process. These things just always take time."

Russell's career path means that he's well-adapted to adversity. While the 21-year-old has always been highly rated, there were times when reaching F1 at all seemed a long shot.

"It's not my first difficult year, also my last year in karting was very difficult," he says. "I went to a team that wasn't performing at the time, I saw it was a win-win situation. If I performed it'd look great on me and if I didn't, people would just blame it on the equipment. You can call that character-building seasons, and I also had that in Formula 3.

"My two seasons were far from perfect, and that made me sort of into the driver I am today. I learned a huge amount from those moments. Sometimes, if you have just such a perfect career path, when you do have a difficulty, you don't know how to handle it. I've had a number of difficult moments in my career, so I've sort of got the experience."

At McLaren, 19-year-old Lando Norris has better machinery at his disposal and has also made an impressive start to his F1 career. He has twice been in the points, with a best result of sixth in Bahrain, and looks at home at this level. But going into a struggling McLaren team is no easy gig, especially up against a driver like Carlos Sainz Jr, and by making a good impression early on he has already proved himself capable of performing at the pinnacle, even if he missed out on the F2 title last year. An early impact is always a good sign of a future star, and Norris has certainly ticked that box.

"It's always a bonus to do it," says Norris of getting a big result on the board already. "It's not like I had to do it or something, but if there's an opportunity where it is possible then I've got to make the most of it and make sure that I'm there to maximise that opportunity, which is what I did.

"I couldn't have done much better than sixth. Maybe I could've done if I hadn't dropped back as much in the beginning, I could've been ahead of Vettel if he'd still had the same incident at the end. But apart from that it's good that I've done well. I guess for the people on the outside, but also for my own confidence in knowing I can do a good enough job, which was mainly from the job I did in Bahrain. It's important but it wasn't the end of the world if it didn't happen."

As for Albon, he has had an unusual path to F1 – dropped by the Red Bull programme in 2012, he was picked up by Toro Rosso for this season after it ran out of other options. This, after excelling in F2 last season. There have been a few mishaps, including a massive accident in practice in China, but he's also bagged two points finishes and shown a good turn of pace. Perhaps that's no surprise for a driver who is highly rated by no less than Leclerc himself. And as a contemporary of the Ferrari driver, Albon has the chance this season to force himself into contention for a long-term future in F1.

"He's always been able to do those laps where it's like, 'Whoa, where did that come from?'" said Albon of Leclerc after that sensational pole position in Bahrain. "And I think today was one of those.

"It's cool to see because it shows how strong this generation is and seeing Charles fighting with Seb so early in the season – I thought it might take him longer. I get on really well with Charles, and even in GP3 it was clear he was seriously quick. Fighting with him in 2016 was a confidence boost and did me a lot of favours. It's cool to see where he is."

The other member of this young generation is one who has seemingly lost momentum through no fault of his own. Esteban Ocon could have been driving for three teams this year – Racing Point, Renault or Mercedes – and, after two and a half impressive campaigns with Manor and Force India, it's hugely unlucky that he's 'only' the Mercedes test driver this year.

Racing Point's change of ownership meant he was ousted in favour of Lance Stroll, which was not a big problem as for a long time he was off to Renault. Then, Ricciardo made his shock decision to abandon Red Bull for the French manufacturer and Ocon was frozen out. It *should* be a temporary situation, and he's first in the queue to replace Bottas if Mercedes does not pick up its option to continue with the Finn in 2020. But you are quickly forgotten in F1, even if it would be desperately foolish for grand prix racing to let the prodigiously talented 22-year-old slip its memory. Fortunately, in Mercedes, Ocon has the right backer and it's improbable that he won't return to action next year – it's just a question of where.

So Hamilton and Vettel are fighting on multiple fronts, and that's before you even factor in the drivers who are a little older than this group – Bottas, Ricciardo, Nico Hulkenberg – but still trying to get themselves into the position to challenge for championships.

Casting into the future, it's easy to imagine Ocon, Leclerc, Verstappen and the rest doing battle for world championships having displaced the old guard. And then they, too, will be under pressure from the next generation.

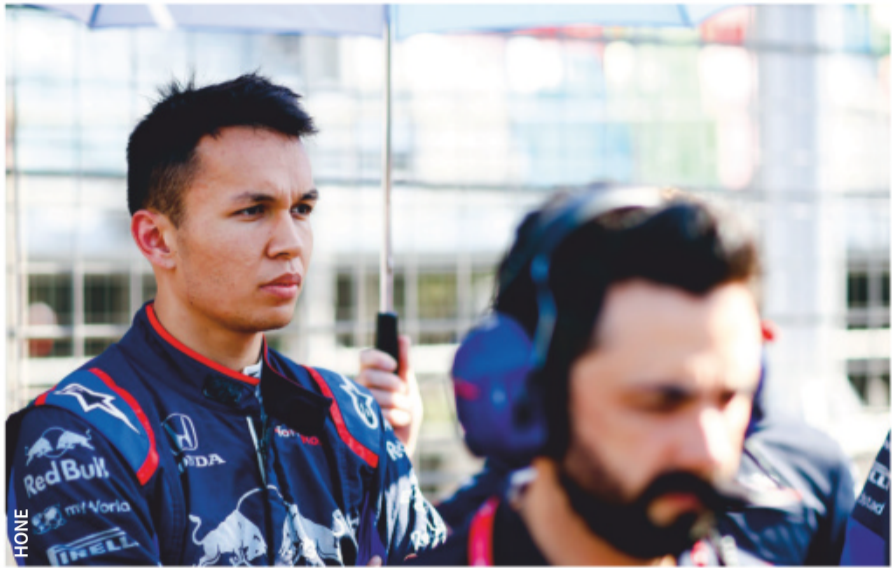
As for Hamilton, he doesn't look likely to run out of steam anytime soon, and by the time his current Mercedes contract is up it's possible he will be a seven-time world champion. Whether or not Hamilton continues beyond 2020, who knows? Hamilton himself has suggested much will depend on the kind of F1 the 2021 regulations will herald.

We can be sure that, provided Hamilton remains motivated enough, he's capable of holding off the charge of the youngsters as he pushes up to the age of 40. But he will fall eventually. The question is, which of these drivers will be the one or ones to topple him? ❄

NEXT WEEK

SPANISH GP REPORT 16 MAY ISSUE

Can Leclerc break his duck and underline Ferrari's testing pace by joining Verstappen as a race-winning member of the new generation? Or will Mercedes continue its record-breaking start?

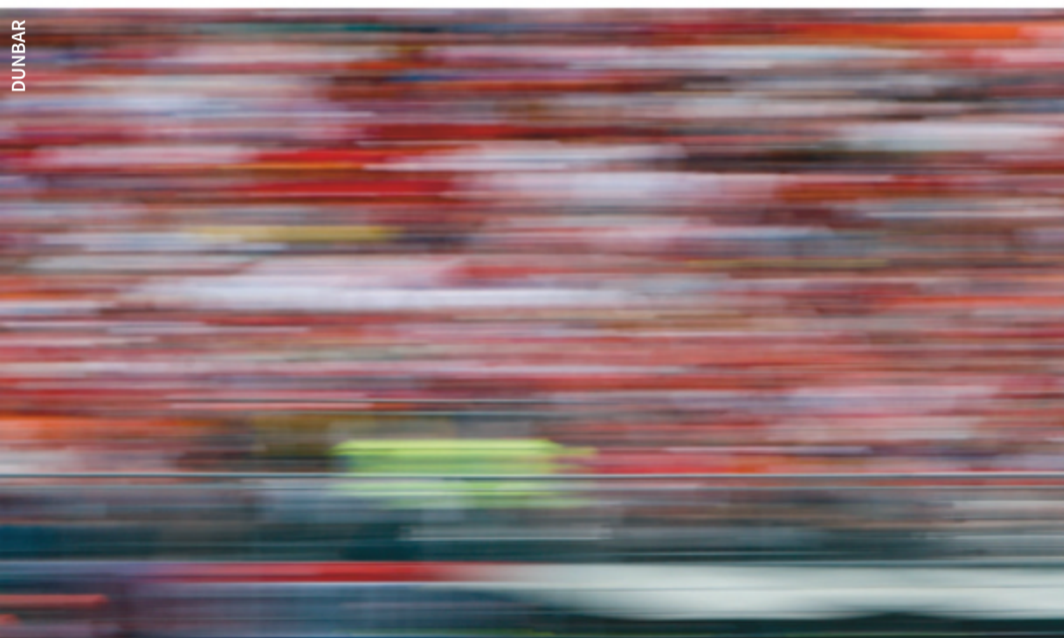


HONE

Albon has grabbed his Toro Rosso chance and is rated by rivals



DUNBAR



DUNBAR



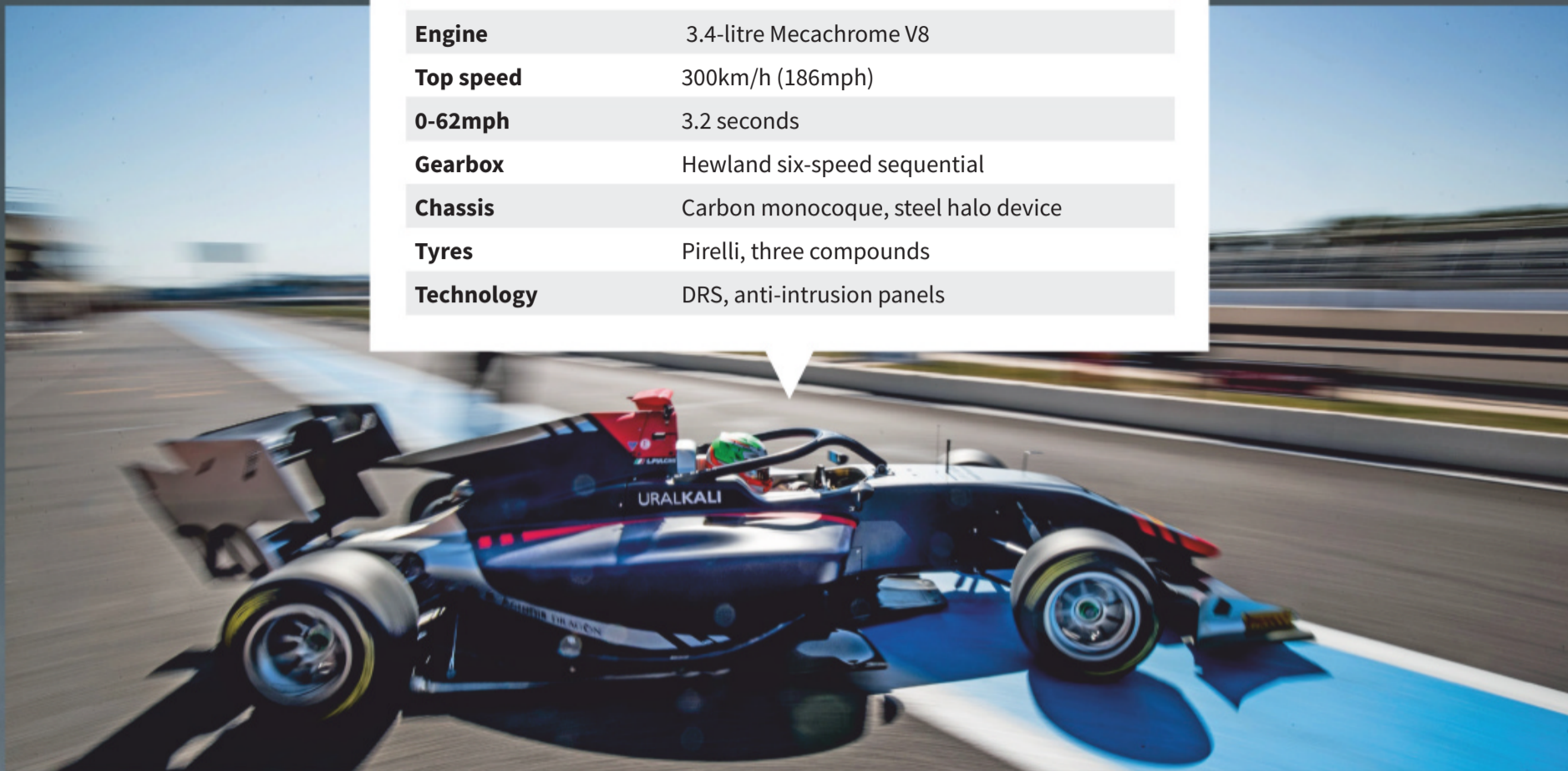
SUTTON



Ocon starred at Force India/Racing Point, but is currently on sidelines

DALLARA F3 2019 TECH SPEC

Engine	3.4-litre Mecachrome V8
Top speed	300km/h (186mph)
0-62mph	3.2 seconds
Gearbox	Hewland six-speed sequential
Chassis	Carbon monocoque, steel halo device
Tyres	Pirelli, three compounds
Technology	DRS, anti-intrusion panels



Formula 3 car is similar to the GP3 racer it replaces



SEASON
PREVIEW

DIFFERENT NAME, SAME TUNE?

GP3 has become Formula 3 for 2019 and it has a new car, so where does that leave the teams and drivers?

JACK BENYON

PHOTOGRAPHY 

The new Formula 3 season, which kicks off in Spain this weekend, is rife with change for junior drivers looking to make the step up to Formula 1.

The Formula 3 European Championship, won last year by Mick Schumacher, has disbanded and merged with the GP3 Series on the F1 package, the aim being to simplify the single-seater ladder. FIA Formula 3 is the outcome, although it would probably be better described as GP3.2.

The engine, gearbox, most of the rear end and a host of other parts remain from GP3 in the new F3 car, as the new series is run by the same organisation headed up by Bruno Michel, who also runs the Formula 2 Championship. GP3's F1-support slot remains too so, for the first time in a long time, F3 teams and drivers will be regularly on the F1 circus's doorstep.

It means that what we actually have is something very similar to GP3, with a new car – complete with a halo – and a few added teams merging from the defunct European series. It raises the

“ONE NAME KEEPS CROPPING UP AS TITLE FAVOURITE. STEP FORWARD 20-YEAR-OLD LEO PULCINI”

question, what is Formula 3 supposed to be? It was always the training ground for the fastest drivers. No overtaking aids like DRS, and reversed grids or degrading tyres for entertainment, like GP3.

While on paper F3 was the far better training ground, one thing the new series has kept is the standard of drivers and teams, and there's no doubt that the eight-round series will be hotly contested. The competition is likely to be closer than the European series thanks to the new F3's single-make, single-engine formula.

The addition of some strong teams will also make a difference as HWA, Hitech Grand Prix, Sauber Junior Team, Carlin and reigning F3 European champion squad Prema Racing all join FIA F3.

Despite the fact that most of the 30 drivers are in with a chance of podiums this year, one name keeps cropping up as the title favourite. Step forward 20-year-old Leo Pulcini.

The 2016 Euroformula Open champion struggled in his maiden >>

Driven does more, with less

Independent testing reveals Driven Racing Oils provides more horsepower with less wear

Detailed surface measurements and used oil analysis results all confirm the Driven system of lubricants reduces wear by 76%, provides 2% more horsepower and lowers temperatures by 11°C compared to conventional, high zinc racing oils.

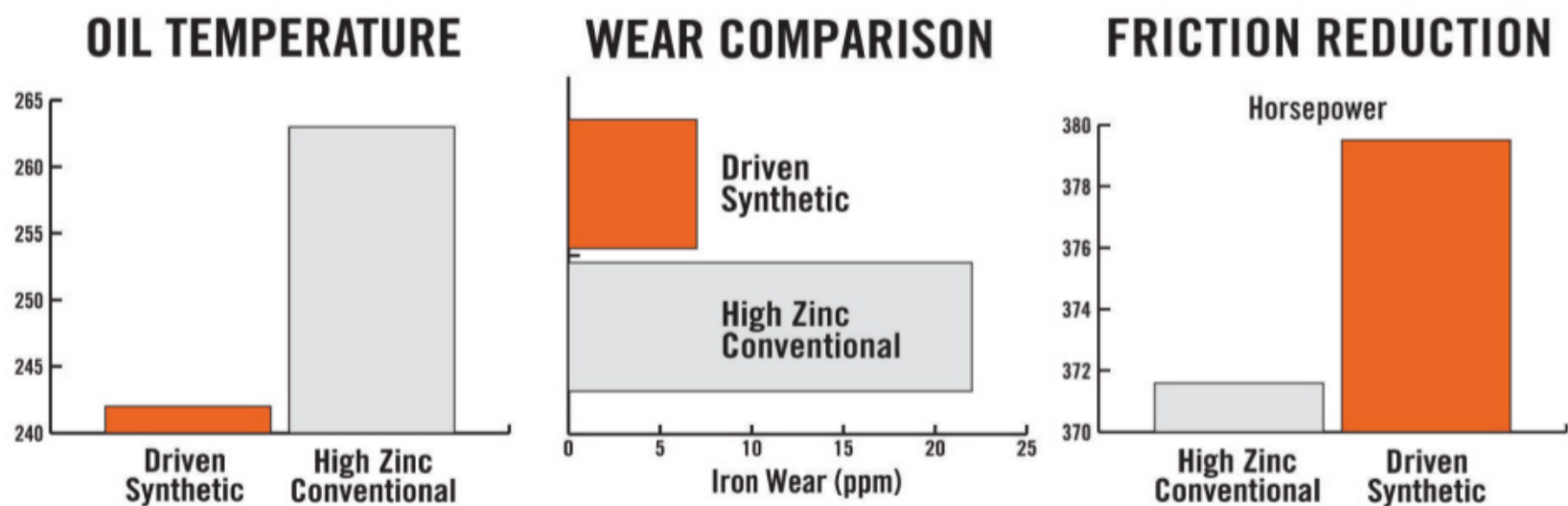
Developed for and used by NASCAR champions Joe Gibbs Racing, Driven Racing Oil provides bespoke products proven to outperform standard synthetic oils and even "high zinc" racing oils. Trusted by professional racing teams around the world for more than a decade, Driven delivers protection and performance you can count on.

The Driven XP range is available in: 0W, 0W-10, 0W-20, 5W-20, 10W-30, 10W-40 & 15W-50 viscosities



'Ed Pink Racing Engines uses Driven Racing Oil in every engine we build. It is the best insurance for long engine life that you can get'

Ed Pink, Hall of Fame Engine Builder



DRIVEN
DRIVEN TO WIN RACING OIL®

www.drivenracingoil.com

European and Middle-East Distributor
Anglo American Oil Company

+44 (0)1929 551557

info@aaoil.co.uk www.aaoil.co.uk

GP3 year with an uncompetitive Arden team, and a switch to Campos Racing in 2018 didn't promise much more, given its results, albeit better than Arden's. But Pulcini put his car on pole for the season opener at Barcelona and took fourth in the championship, which easily could have been third without a mid-season run of bad luck that included retiring with radiator failure after a visor had been ingested by his car's cooling system.

A push to join F2 proved impossible for Pulcini as he – like many others – struggles for budget. But he's in F3 to make the most of it and has switched to single-seater powerhouse Hitech Grand Prix, one of the squads coming over from the European series. The combination has hit the ground running. At the Barcelona pre-season test he was fastest on both days, and the work that he and the team have been doing on track has been noticed.

When asked if the title is possible this year, Pulcini says: "For sure. I just think about myself and my driving, because I'm very confident and very happy with how my team is working. Also, my experience is paying a bit."

His Red Bull-backed team-mate Juri Vips is highly rated, but appeared to struggle to match Pulcini in testing and may need a short period of bedding-in this year. That said, testing isn't the fully finished canvas and he will be one to watch through the year, after taking the fight to Prema (while at Motopark) in European F3 last year.

Prema has impressed with how quickly it's got up to speed despite it – and two of its three drivers – having no experience in GP3. In fact, it was the two drivers without the GP3 background who impressed most, with Ferrari juniors Marcus Armstrong and Robert Shwartzman both topping the times during testing.

Armstrong is arguably the hot tip of the two. He's also picked out Pulcini as the one to watch, but don't be surprised to see the Kiwi at the top of the timesheets from the word go this year.



Pulcini hit the ground running with Hitech and was fastest in testing

GRIFFITHS

“SOMEONE IS NOT GOING TO RUN AWAY WITH IT. THE COMPETITION IS REALLY HIGH”

"I would almost say he is the favourite heading into Barcelona," says 18-year-old New Zealander Armstrong. "He's very experienced and he's fast as well. I think he will be very strong. But there's not going to be a situation where someone runs away with it – the competition is really high. My target is to learn and progress as much as I can this season. It's my third full season in cars. I always want to improve. In terms of results I'm

always extremely ambitious..."

Shwartzman, backed by SMP Racing as well as Ferrari, is not about to roll over and let Armstrong run away with it either. "I think I can be stronger than him," says the bullish 19-year-old Russian. "Of course, I cannot guarantee it – everything can happen in races."

"But I feel confident and I know what I'm capable of. Yes, sometimes Marcus can be faster than me and a bit ahead, but I tend to rely on stability and use it. Moreover, I had better pace and speed during the test session. So, I hope that our battle this season will end in my favour."

The pair will first have to do something that happened only three times in nine seasons in GP3 – become a driver not from ART Grand Prix to win the drivers' title.

ART hasn't had the headline times in testing, but that's usual from the squad that's backed by Alfa Romeo F1 team boss Frederic Vasseur, and which won drivers' (with Antoine Hubert) and teams' championships in GP3 last year.

What it has done is sign a versatile line-up. ART's answer to Pulcini is David Beckmann, who had a slow start to his maiden GP3 campaign in 2018 with Jenzer, but a mid-season switch to Trident was followed by a run of results that would have secured runner-up spot in the championship had the first half of the season gone the same way.

He's joined by Formula Renault Eurocup champion Max Fewtrell, and Fewtrell's >>



Vips is highly rated but may need time to settle in

PORTLOCK



Ferrari Junior Armstrong knows competition is high...

GRIFFITHS



...in particular from Prema team-mate Shwartzman

GRIFFITHS

ENTRY LIST

NO	DRIVER	TEAM
1	David Beckmann (DEU)	ART Grand Prix
2	Max Fewtrell (GBR)	ART Grand Prix
3	Christian Lundgaard (DNK)	ART Grand Prix
4	Liam Lawson (NZL)	MP Motorsport
5	Simo Laaksonen (FIN)	MP Motorsport
6	Richard Verschoor (NLD)	MP Motorsport
7	Lirim Zendeli (DEU)	Sauber Junior Team by Charouz
8	Fabio Scherer (CHE)	Sauber Junior Team by Charouz
9	Raoul Hyman (GBR)	Sauber Junior Team by Charouz
10	Bent Viscaal (NLD)	HWA
11	Jake Hughes (GBR)	HWA
12	Keyvan Andres (DEU)	HWA
14	Yuki Tsunoda (JPN)	Jenzer Motorsport
15	Artem Petrov (RUS)	Jenzer Motorsport
16	Andreas Estner (DEU)	Jenzer Motorsport
17	Devlin DeFrancesco (CAN)	Trident
18	Pedro Piquet (BRA)	Trident
19	Niko Kari (FIN)	Trident
20	Leonardo Pulcini (ITA)	Hitech GP
21	Juri Vips (EST)	Hitech GP
22	Yifei Ye (CHN)	Hitech GP
23	Alex Peroni (AUS)	Campos Racing
24	Alessio Deledda (ITA)	Campos Racing
25	Sebastian Fernandez (VEN)	Campos Racing
26	Marcus Armstrong (NZL)	Prema Racing
27	Jehan Daruvala (IND)	Prema Racing
28	Robert Shwartzman (RUS)	Prema Racing
29	Teppei Natori (JPN)	Carlin
30	Felipe Drugovich (BRA)	Carlin
31	Logan Sargeant (USA)	Carlin

CALENDAR

DATE	EVENT
11-12 May	Barcelona (ESP)
22-23 June	Paul Ricard (FRA)
29-30 June	Red Bull Ring (AUT)
13-14 July	Silverstone (GBR)
3-4 August	Hungaroring (HUN)
31 August-1 September	Spa (BEL)
7-8 September	Monza (ITA)
28-29 September	Sochi (RUS)



fellow Renault junior and 2018 title rival Christian Lundgaard. Fewtrell may have grabbed the headlines by taking the crown, but Lundgaard was the top rookie in a series that usually takes two seasons to win. So their battle will be intense, and Lundgaard appeared to have the upper hand in testing.

The team has lost a number of personnel, including championship-winning engineer Christophe Boittin to HWA (see panel), as a result of the new F3 teams poaching staff with GP3 experience. But that's happened before and the team will no doubt be at the front at Barcelona this weekend.

Of the other existing GP3 squads, Trident failed to set any hearts racing in testing, but that doesn't mean the perennial frontrunner won't be in the mix. It has retained 2018 race winner Pedro Piquet, son of Nelson, who'll be joined by Finn Niko Kari, who spent last year at MP Motorsport. Either driver could challenge at the front,

“IT FEELS LIKE A GP3 CAR STILL - IT'S REALLY RECOGNISABLE WITH THE ENGINE AND THE BRAKES”

while Devlin DeFrancesco has more to learn after switching to GP3 midway through last year.

With so many drivers capable of taking the title, competition is going to be intense. And with the cars so close together, Pulcini reckons there will be one element that's key to the race weekends this year. “I think qualifying will be the most important thing,” he says. “If you do quali well, you have done 80% of the weekend. We are 30 drivers and almost 30 drivers are on a similar pace. If you start in the first five positions you have almost done all the weekend.”

Prema team boss Rene Rosin adds that apparently minor things will be important this season, as there's so little margin for error. There's also less track time in testing and on race weekends in FIA F3 than there was in European F3. So the drivers and teams coming over from the old series will have just one practice session, and onto qualifying before two races.

“It will be a fight already in Barcelona, 30 cars all close to each other,” he says. “You need to get all the small details done if you want everything to go perfectly. You need to nail everything and not do any major mistakes.”

There are also key elements relating to the car that will be important. In the past, DRS has been restricted to six uses in the feature race and four in the sprint, and the leader can't use it. In FIA F3 this year, unlimited use will be allowed, similar to F1 and F2, providing you are within a second of the car in front heading into the DRS zone.

The other change is the Pirelli tyre, which has been modified slightly. It was expected to degrade even more and be harder to manage than in previous years. But Pulcini remembers last year's tyre well, and says: “It's not a big difference. The tyres are almost the same – they have just changed how the tyre has worked in terms of temperature. For me, when we have soft tyres, there will be thermal degradation and not tyre degradation, so we have to control the temperature.”

As the temperatures at the pre-season tests were quite low, managing the tyres could become a much bigger talking point as the heat rises through the season. The GP3 drivers will have the advantage, but the best always adapt and learn quickly.

Fundamentally, the car is very similar to the GP3 racer it replaces. That's the opinion of a veteran at this level, ex-ART driver Jake Hughes, who lines up with HWA this year. “It's the same engine, gearbox, drivetrain, brakes, everything like that,” he says. “It's a different monocoque, front suspension and aero. It feels like a GP3 car still – it's really recognisable with the engine and the way the brakes feel.”



Beckmann has momentum after late-2018 charge



Most of the series' 30-car field have podium potential

“That said, it has stepped up a bit. The car feels like it has more aero in high-speed corners and similar at lower speed. Mid to high-speed it feels more capable. It feels very similar, but it does feel like a step up with the aero.”

That doesn't mean the ex-GP3 teams are going to run away with it. The increase in front-end suspension set-up options means the old squads can't just carry over last year's GP3 platform. So it comes down to which team gets on top of the car the quickest and optimises the set-up for each track. For that, the best teams will always rise to the top. And it's the same for the drivers. They will have to adapt, make changes and deliver in a very small number of laps to be in with a chance.

The field is wide open at the top, and whatever happens it will be an entertaining spectacle, even if it is the F3 purist's worst nightmare. ❄

NEXT WEEK

**BARCELONA FIA F3 REPORT
16 MAY ISSUE**

Who'll throw down a marker at the first round of the new F3 season? The issue will also include WRC and IndyCar coverage.

FIRST STEPS FOR A RACING POWERHOUSE

Of all the new teams that have come on board in F3 for 2019 thanks to the GP3/European F3 merger, arguably the most interesting is HWA.

A team that has competed in DTM with Mercedes for years, it's recently moved into single-seaters, running Mercedes' Formula E programme before the marque enters under its own name next season.

This year marks its first foray into junior single-seaters with its own team, and its performance on track will be intriguing. It has signed Jake Hughes, who contested last year's GP3 Series with ART, and engineer Christophe Boittin – who steered Anthoine Hubert to the GP3 title – to lead its charge. Alongside Keyvan Andres and Bent

Viscaal, Hughes is undoubtedly team leader.

He finished eighth in GP3 in 2018 after struggling to work the Pirelli tyres. But he is as motivated as anyone to help HWA reach the front, as its presence in other series

could open doors for him. “There's a lot on the back of my head that HWA is a massive manufacturer,” says Hughes. “If anyone has ever been to their workshop in Stuttgart, it's very impressive. It feels like a

mid-sized Formula 1 team competing at F3 level. It's very professional, very organised, there's a lot of potential there for someone like me. I'd be lying if I said that wasn't part of the decision.

“I wouldn't be doing this if I didn't think it would be beneficial for my career. Last year wasn't what I expected. I think this is another crack at it but with the potential to go somewhere with them in the future.”

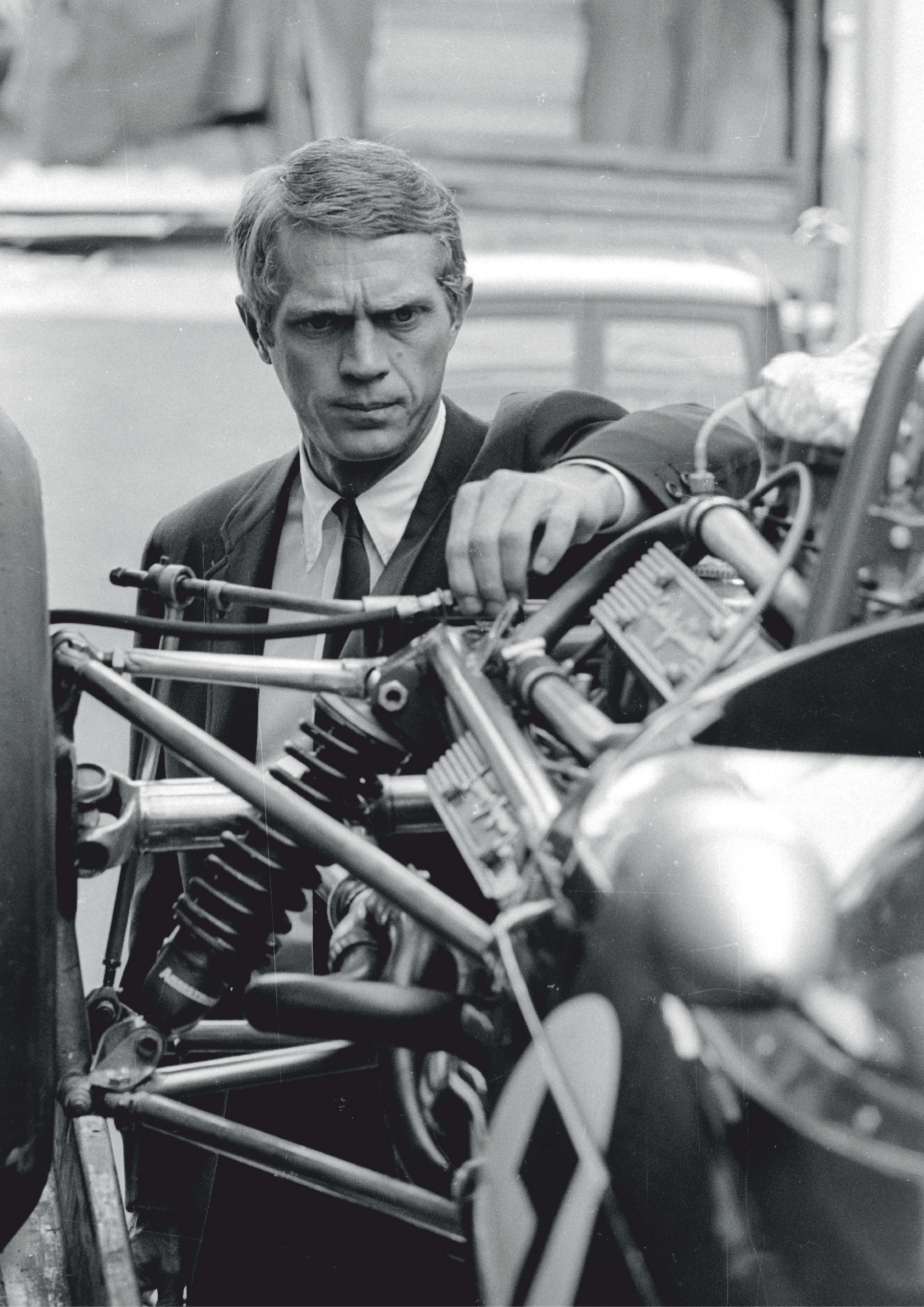
With the addition of Hughes and some key technical staff, HWA has the chance to make a mark in FIA F3 this year. But everything will have to come together perfectly, with the teams so close.

Along with its technical partnership with Arden in F2, could HWA be lining up to provide a ladder to F1, possibly for Mercedes? It's an interesting proposition and, if the answer is yes, then this could be the team that propels a future champion to F1 in years to come.



Hughes hopes hitching his star to HWA will pay off

GRIFFITHS



McQUEEN'S LOST MOTORSPORT MOVIE

You've probably never heard of Day Of The Champion, but recent discoveries show it came close to being Steve McQueen's first racing film

RICHARD WISEMAN

IMAGES OFFSIDE SPORTS PHOTOGRAPHY/GERRY CRANHAM

Think of Steve McQueen, motor racing and movies, and one image springs instantly to mind: the man with the piercing powder-blue eyes in the royal-blue open-face crash-helmet, driving the duck-egg-blue Gulf Porsche 917 at Le Mans. But McQueen's much-admired, single-minded epic – filmed during the summer of 1970 – was in many ways the sequel to a never-released Formula 1 film that Hollywood hadn't allowed him to finish four years previously.

Had things gone according to plan – and Warner Brothers' production plans kept to their original shooting schedule – then the McQueen-starring *Day Of The Champion* would have beaten John Frankenheimer's *Grand Prix* onto the world's cinema screens by a clear six months in 1966. For a variety of reasons – as so often in the movie business – things went awry, and so not a single second of the footage that was shot ever ended up on the silver screen. But this was emphatically not a vanity project; it was the real deal, and McQueen's F1 film came within just a few agonising weeks of actually happening.

Well, that was certainly the tale that apparently sensible people such as Robert Relyea – McQueen's long-time colleague and business partner at Solar Productions – happily told for decades after *Day Of The Champion's* summer-of-'66 shutdown. Further usually reliable sources told suspicious-sounding stories about hundreds of hours of film that ace director John Sturges's hand-picked Warner Bros crew had lensed on location, ahead of the film's anticipated studio scenes, at the Nurburgring, Oulton Park and Goodwood during '65 and '66. But none

of this had ever actually been seen or verified by anybody outside the film project's original production team, or for over half a century. That made it all the more remarkable when – quite by accident, it seems – 40 minutes of it suddenly turned up online, late last year.

What's more, this wasn't scratchy, faded production footage showing 53 years' worth of wear and tear, but rather freshly transferred (and, by the look of things, rescanned to 4K picture quality) 35mm film stock. It's every bit as vivid and powerful – not least to mention beautifully framed – as that shot by Frankenheimer's crew for what is widely regarded as being the best-photographed F1 feature film ever made, *Grand Prix*.

Furthermore, McQueen's team got there a year before Frankenheimer's squad, filming real-life races in 1965 rather than '66, and signing up circuits (Silverstone, Reims and the 'Ring) that then fail to appear in MGM's much-loved, old-school-F1 favourite.

So what can be seen on screen for those fortunate enough to be able to view this long-lost production footage? Well, where to begin...? How about looking over ('technical consultant') Stirling Moss's right shoulder as he tackles the original, fearsome Nurburgring in an F1 car at full racing speed, three years on from the Goodwood shunt that had so nearly killed him. Or, by glancing back at Mike Hailwood as the ace motorcyclist refines his F1-driving craft by attempting to keep up with *Day Of The Champion's* camera car – also possibly driven by Moss. And that's before mentioning helicopter-mounted tracking shots of real-life action from the 1965 German Grand Prix that looks uncannily similar to those that Frankenheimer filmed so memorably at Spa a year later. For once, the >>



A freeze-frame from the film of the start of the 1965 German GP



Hailwood hustles
his Lola around
the Nurburgring

phrase ‘an embarrassment of riches’ is emphatically not an exaggeration.

One person, however, is notably absent from any of this precious found footage. And it’s his non-appearance that helps to explain both why *Day Of The Champion* ultimately failed to make it to the big screen, and also why this astonishing 35mm film has been filed away under lock and key for over 50 years – because his name is Steve McQueen.

Before being thrown off course by a chain of events over which he had no personal control, Hollywood’s then-hottest male lead – in the aftermath of his career-defining role in *The Great Escape* – was the focal point of this entire F1-themed film project. The enormous commercial success of 1963’s box-office blockbuster earned McQueen the star power to create and lead any film project that he so chose. And what most impressed the American actor about the then perilously dangerous world of motor racing was the fact that “it’s one of the very few things in life that you can’t fake”. Hence his sense of a personal mission that, in contrast to then-recent Hollywood racing-themed candyfloss films such as *To Please A Lady* and *The Racers* – which had starred Clark Gable and Kirk Douglas, respectively – the keyword for *Day Of The Champion* was going to be “realism”.

That intensity shines through every frame of the stunning on-location photographs that were taken by ace sports photographer Gerry Cranham in early May 1965; some are published here in *Autosport* having never previously seen the light of day. McQueen – in the company of *The Great Escape* director Sturges and the recently retired Moss – paid an unheralded visit to Alan Mann Racing’s unpretentious workshops at Byfleet in Surrey, close to Brooklands. In addition to preparing trophy-winning touring cars for Ford, AMR also boasted a burgeoning reputation for specialist film work involving building ‘trick’ cars for the big screen. Mann, indeed, had helped to adapt the iconic Aston Martin DB5 for *Goldfinger* and, just a year or two later, would design and build the titular machine at the heart of *Chitty Chitty Bang Bang*.

The given reason for this group recce was to investigate where best to mount 35mm colour film cameras aboard modern-day F1 cars. But the true motivation for McQueen’s visit that day seemed to be (as was also noted during the filming of the later *Le Mans*) that he especially enjoyed the company of mechanics, team managers and racing drivers – none of whom treated him like a star, but merely a fellow enthusiast.

Now aged 90, Cranham’s memories of McQueen remain as sharp as his photography: “My first impressions of him were that he was quiet, shorter than you might have expected and quite stand-offish. Some Hollywood stars make a big deal of being over-friendly with new people – and he couldn’t be bothered with any of that. He clearly didn’t suffer fools. What he seemed most interested in that day were cameras and cars, rather than people.

“A further memory is that – perhaps unusually for an actor – he

spent most of his time that day listening, rather than talking. In fact, it’s entirely possible that he didn’t say anything to me at all! I recall him mainly looking and listening as to where John Sturges was thinking of placing and mounting his film cameras, so as to make the cinema audience most feel that they were also driving a racing car. And he also listened a great deal to Stirling Moss, who he seemed slightly in awe of, when it came to him describing how it actually felt to drive these cars.”

The vast majority of these images – surely all the more vivid for their new crispness in pin-sharp black-and-white – were never transferred from their original contact sheets, and so remained unseen on various storage shelves for almost 54 years, before being freshly digitised in London by Offside Sports Photography just a few weeks ago.

“I was one of the first Fleet Street photographers to have my own agent, and he had a connection with Warner Brothers,” recalls Cranham. “That meant that any time Warners had a movie which was being filmed in England, it was usually me who got the call to take the on-set photos.”

In the spring of 1965, there never seemed any question to Cranham that *Day of The Champion* might not go ahead as planned and, indeed, three months later he received a further phonecall on behalf of Warners, inviting him to pack a bag for the Nurburgring and prepare for on-set photography at the German Grand Prix on 1 August.

“MCQUEEN LISTENED A GREAT DEAL TO STIRLING MOSS, WHO HE SEEMED TO BE SLIGHTLY IN AWE OF”

“This seemed to be like a practice run for the real filming, which I believe was planned for the following year,” adds Cranham. “But it was still fascinating to spend so much time around director John Sturges, who I was enormously impressed by. When he spoke and described a particular scene or shot, you could absolutely see what he was trying to do.”

McQueen wasn’t present at the ‘Ring that weekend – Cranham wondered at the time if he might still be back in Hollywood negotiating his fee. The truth was that he disliked being in or around large crowds. But Moss most certainly was present, driving an adapted prototype Group 7 sportscar that could be fitted with up to three Hollywood-standard film cameras at a time. Warners’ crew, moreover, stayed on for the week after the race, continuing to film specific scenes and set-ups around Europe’s most picturesque racing venue.

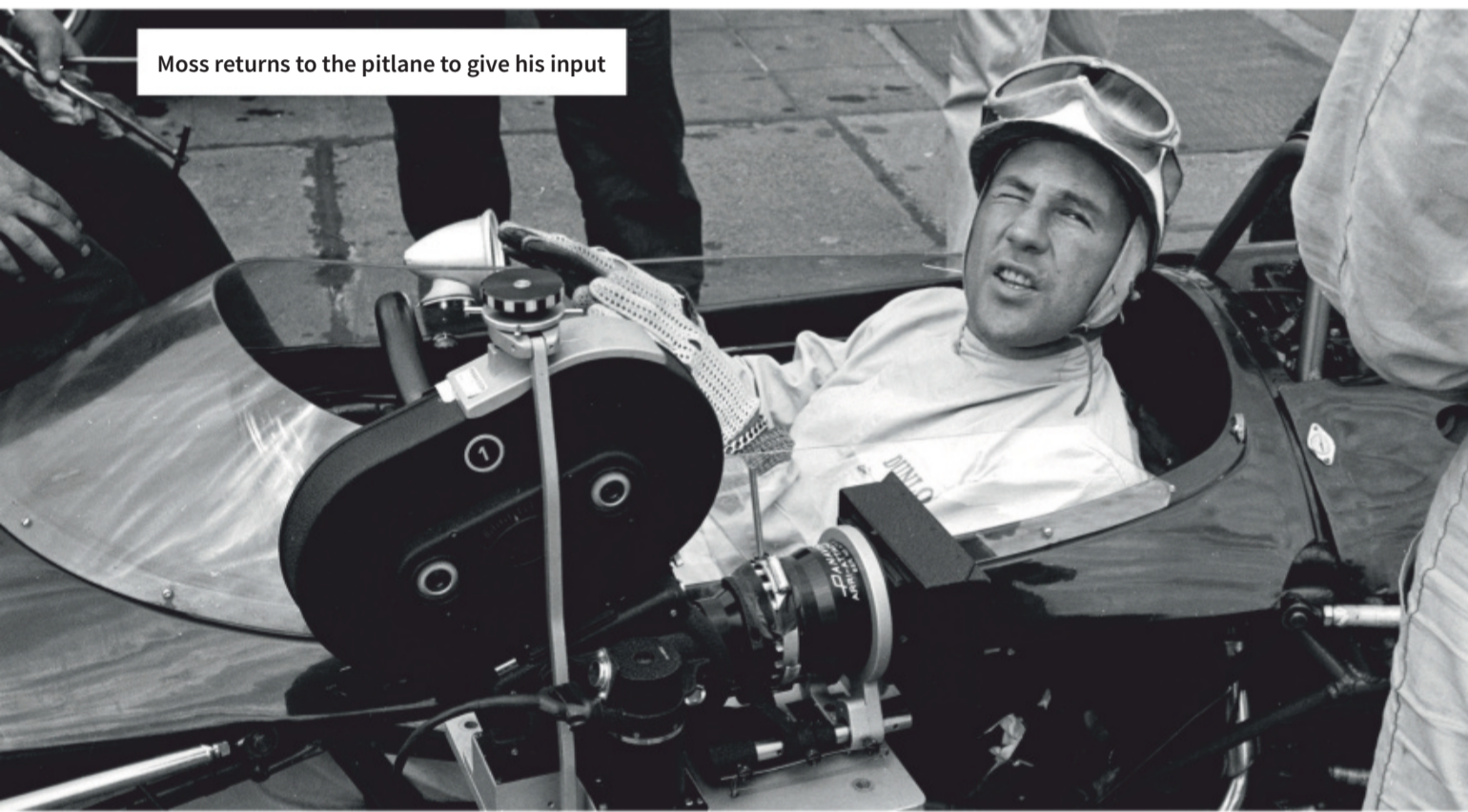
Fast forward 18 months to the spring of 1967, and McQueen received >>



L-R: Moss, Sturges and McQueen



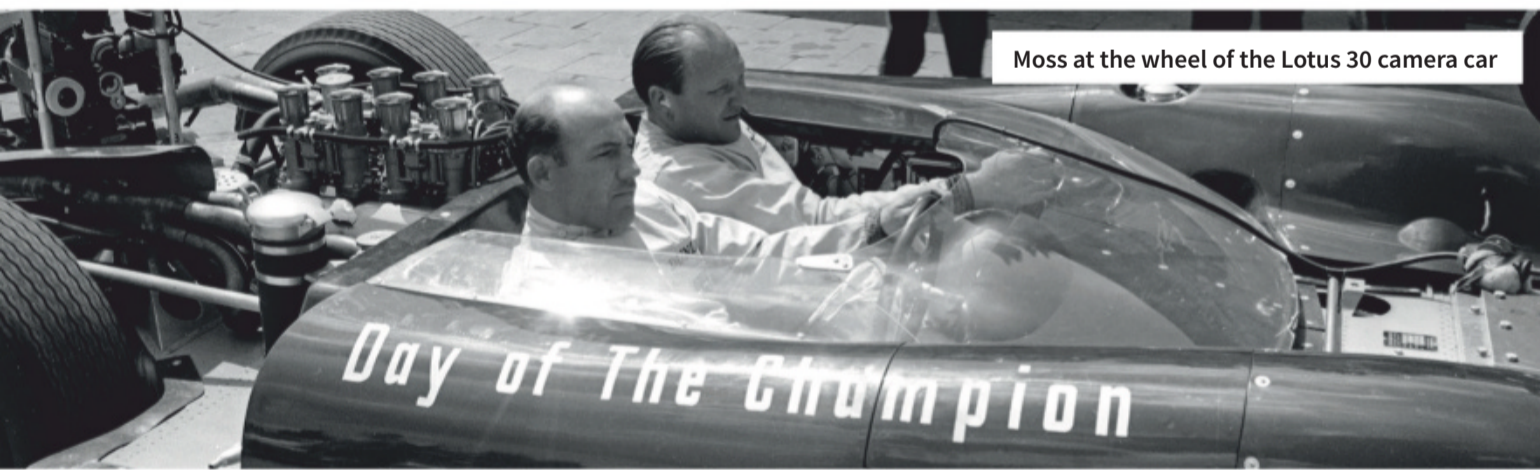
Director Sturges looks on at the action from the famous Karussell



Moss returns to the pitlane to give his input



McQueen's intended driver's seat



Moss at the wheel of the Lotus 30 camera car



McQueen relished Moss's input



McQueen finds the perfect view



Clapperboard confirms major Hollywood project



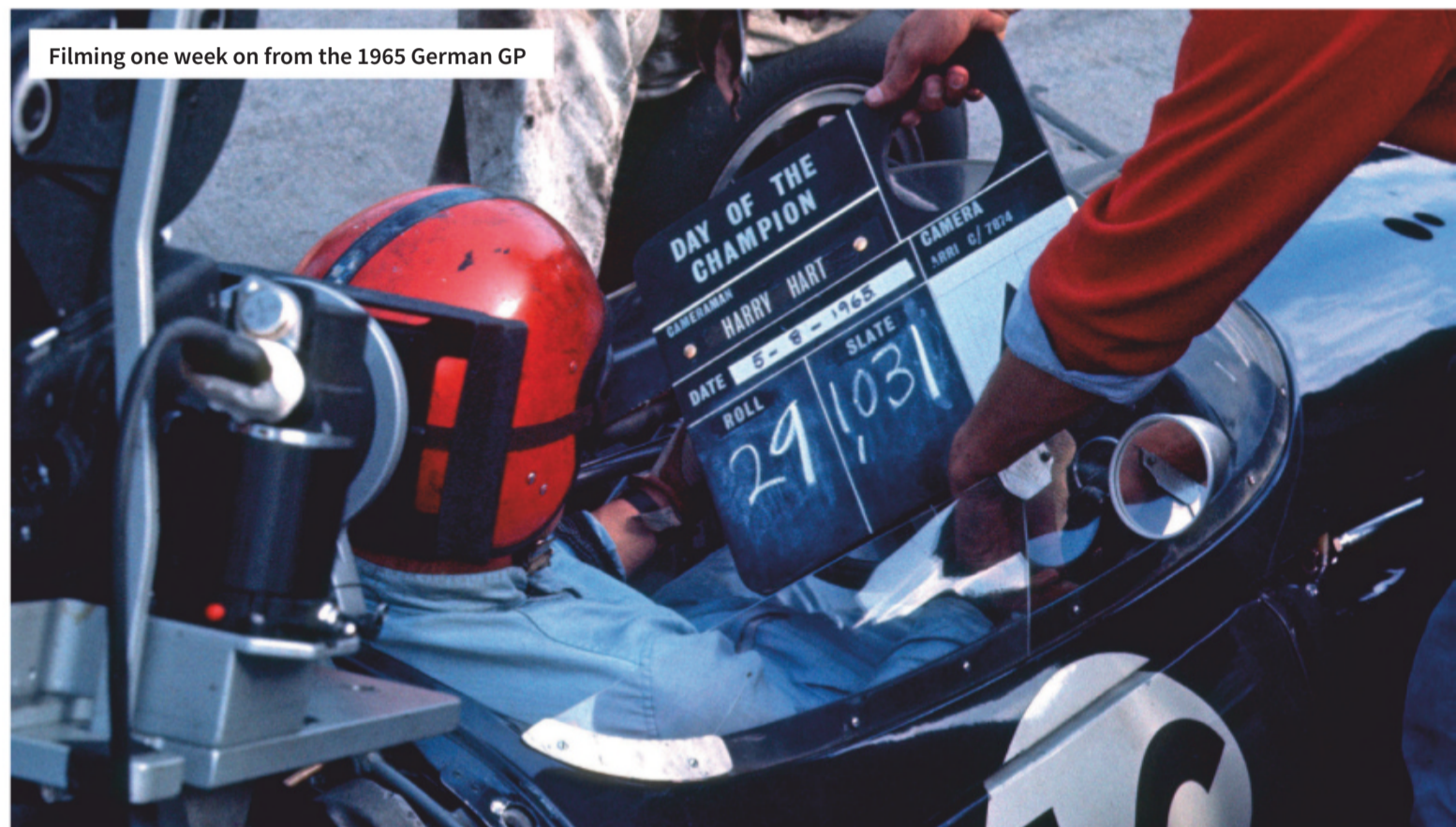
McQueen enjoys a hush-hush visit to Alan Mann Racing



Sportscar-mounted camera work



Hailwood leads Moss as they chase down the camera car to create stunning footage



Filming one week on from the 1965 German GP

Cameras were placed to give audience immersive 'in-car' experience



his only Best Actor Oscar nomination, in recognition of his starring performance in director Robert Wise's epic travelogue adventure *The Sand Pebbles*. But that wouldn't be the reason why he would remember this particular movie, with a wince, for the rest of his sadly brief life. McQueen had become so physically ill during late 1965 and early '66 – with various Far-Eastern-contracted maladies, in a climate and medical culture utterly different to California's – that he later commented: "Whatever sins I may have committed earlier in my life, they got paid back to me double during the shooting of *The Sand Pebbles*."

Consequently, the extensive location shooting for this other-side-of-the-world 1920s war movie went wildly behind schedule and over budget, and delayed his studio scenes for *Day Of The Champion* to such an extent that Jack Warner himself finally pulled the plug on McQueen's passion project during early summer 1966, upon realising that *Grand Prix* was going to comfortably beat his studio's similarly themed movie onto America's cinema screens.

A personal note from Warner to director Sturges stated pointedly: "I would hate like Hell to be given the bird and a huge laugh by all

“THE ACTUAL SCRIPT FOR DAY OF THE CHAMPION COMFORTABLY BEATS GRAND PRIX FOR CINEMATIC CLICHE”

connected with *Grand Prix*". A more soberly worded Warner Brothers internal memo from Burbank, California dated 16 June 1966 simply stated starkly: "All future expenditures connected with *Day Of The Champion* should be terminated immediately."

The coup de grace was completed by Frankenheimer's crack team of editors at MGM, after they somehow – perhaps motivated at least in part by spite – got *Grand Prix* ready for American nationwide release in time for 21 December, despite the fact that they had only wrapped on filming at Monza during the second week of September. Up against such military precision and a driven director in Frankenheimer at the height of his powers, Warners and McQueen surely had no option but to admit defeat and shut *Day of The Champion* down.

Although it might be heresy to say it, MGM's crushing of their rival project at Warner Bros might just have been for the best. Because for all the gorgeousness of the stock footage that was safely shot well ahead of time, the actual script for *Day Of The Champion* – which this writer is fortunate enough, if that's the phrase, to have read –

comfortably beats even *Grand Prix* for cinematic cliché.

Swinging-London-based American F1 racer Mike Pierce loses his nerve after miraculously surviving a fiery Nurburgring accident without injury, before returning to the track to discover that he's somehow lost his edge. However, all the demon driver's former skills somehow return to him when engaged in a knife-edge Monza slipstreamer, which he wins by a whisker.

And there's a further reason for motor racing-loving film fans to be thankful for Frankenheimer's ruthlessness, in that a bruised and brooding McQueen – who always professed to hate the soap opera-infused *Grand Prix*, but privately told his Los Angeles neighbour James Garner that he thought it was a "pretty good picture" – then set to thinking about how to reimagine the whole concept of a racing movie on screen. Attempting to cover an entire season's worth of racing in one film was potentially confusing to the casual viewer, he felt, as were the large number of different driving characters that populated MGM's three-hour-long effort. The answer, McQueen concluded, was to angle the entirety of the narrative around a single driver during just one race – in as close to real time as possible. And so the seeds of what would ultimately become *Le Mans* four years later were sown.

The mystery over *Day Of The Champion*'s recent re-emergence remains just that for the moment, but the recent Netflix-inspired fever of 'found footage' documentaries has seemingly sent every available reel stored in film warehouses across Europe to the nearest transfer facility, in the hope of stumbling across some long-lost 'gold'. And in this case, miraculously, that's just what's been discovered.

But this story may not finally end with what has recently re-emerged, as Warner Bros' original internal memos of developed film reels collectively add up to between 60 and 100 hours' worth of footage, including onboard filming with Jim Clark and lengthy tracking shots of Lorenzo Bandini's Ferrari. And McQueen's long-time business partner Relyea went to his grave six years ago in the certain knowledge, so he said (and wrote in his revealing memoir *Not So Quiet On The Set*) that all those reels were still safely stored in a Californian film depot...

Unsurprisingly – and even if just encompassing what's so far been uncovered – a documentary showcasing motor racing-on-film's equivalent of a miraculous barn find is already said to be in the works; revolving around a McQueen-inspired F1 movie that was never made, and doesn't once feature its own star on screen.

However, rather than simply ending up as a run-of-the-mill mid-1960s star vehicle, *Day Of The Champion*'s curious ultimate fate must now surely rank among Hollywood history's most tantalising what-might-have-beens. ❧



Footage shows Moss had lost none of his touch on his return to the 'Ring

RACE CENTRE

WEC SPA • BLANCPAIN BRANDS HATCH • DTM HOCKENHEIM • W SERIES • IMSA MID-OHIO • MOTOGP JEREZ





It's Fernando Alon-snow

Toyota's WEC leaders Alonso, Buemi and Nakajima lucked in when the sister car hit problems – but also had to deal with the Belgian climate

GARY WATKINS

PHOTOGRAPHY JEP



motorsport
IMAGES

This one had it all. Snow, hail and sleet, multiple safety cars, a rare mistake from Fernando Alonso, and an equally rare (at least in the context of the 2018-19 World Endurance Championship) technical problem for one of the Toyotas. That was the most significant event of last weekend's Spa 6 Hours, because it handed Alonso and team-mates Sebastien Buemi and Kazuki Nakajima race victory and a firm grip on the title.

Their rivals on the other side of the Toyota garage – Kamui Kobayashi, Mike Conway and Jose Maria Lopez – needed a victory in the penultimate round of the superseason to have a realistic chance of taking the title at the Le Mans 24 Hours WEC finale next month. They looked on course to do just that, only for technical gremlins to strike late in the third hour when the #7 TS050 HYBRID was more than 50 seconds up the road.

An issue with a sensor in the hybrid system resulted in a four-lap stay in the garage, which dropped the car outside the top 20. The victory was gone and the eventual sixth-place finish for Kobayashi, Conway and Lopez means they have now fallen 31 points behind the sister car. With just 39 points up for grabs at Le Mans in June, Alonso and his co-drivers will only have to finish seventh, even if their rivals take the 38 points for the win and the one for pole position.

It was, said Alonso, a “big hit in terms of points”. It was also another example of the Belgian bad luck that has blighted the #7 crew. Last year they lost pole position to what was essentially a paperwork issue, started more than a lap down and then Kobayashi, with the faster car under him, had to hold station behind the sister car when team orders were called at the final pitstop.

This time they kept the pole claimed by Kobayashi and Conway with times the better part of half a second up on their opposite numbers, Nakajima and Buemi. They didn't keep the lead for very long when the snow came, but the evidence of the first three hours suggested that they did have the faster car in the dry, and Buemi was happy to admit that.

Conway converted the pole into the lead of the race and gained time when the first snow flurry began after the cars had completed barely two laps. The #8 crew made their



decision to pit for grooved rubber late, which meant the tyres weren't ready when Buemi arrived at his stall, losing him 20 seconds and a position to the #3 Rebellion-Gibson R-13 started by Thomas Laurent.

The safety car that followed meant Buemi quickly made up that time. On a wet track he was able to move into the lead inside a couple of laps and pull away into a seven-second lead before the safety car was deployed again.

Buemi needed fuel while the pits remained closed, which meant he had to make an emergency pitstop for five seconds of fuel. Worse still, a radio problem meant he made his pitstop proper one lap later than Conway after the race had gone green, dropping him just over half a minute behind his British team-mate.

The gap between the two Toyotas had gone out to more than 40 seconds by the time Buemi made it up to second. It was never less than that — and briefly went up to nearly a minute — before the problems struck the #7 car after Kobayashi had taken over. (Alonso's uncharacteristic spin at Pouhon had cost him little, coming as it did just before a virtual safety car).

The two Toyotas went into the Spa race with differing downforce levels on the

Le Mans-spec body kits they were running in preparation for the big one in June. The drivers of the #8 car opted for more downforce, which explained Buemi's pace in the wet after the first restart and why #7 was in the ascendency when the track dried. How the differing strategies would have played out when the snow returned in the latter stages of the race can only be a matter of conjecture.

It is fact, however, that the drivers of the #7 car are no longer realistically in the title hunt as the series heads for the second Le Mans of the superseason. That's bad news for the WEC, but the pace of the privateers was definitely good news — they were closer than ever before over the course of the superseason.

The top two non-hybrid cars, one each from the Rebellion and SMP teams, were only a lap down on the winning Toyota when the race was brought to an end 11 minutes early as the snow returned harder than ever. The gap would have been bigger but for the proliferation of yellows — four full safety cars and two of the virtual kind — but the independents were in a position to capitalise when a Toyota faltered.

Toyota even failed to top the times in one of the sessions of free practice. SMP's pair of AER-powered BR Engineering BR1s were 1-2 in opening free practice, and the Toyota drivers suggested that even if they had pushed they might not have been able to match the times of the Dallara-built contender on the green track.

SMP and Rebellion both ran in high-downforce configuration at Spa, the latter switching to that spec after trying its new Le Mans bodykit in opening free practice. That undoubtedly had some bearing on the reduced gap. Low downforce wasn't what was required on a cold and wet track.





TOYOTA GAZOO RACING

The #3 Rebellion that Laurent shared with Gustavo Menezes and Nathanael Berthon took second spot just ahead of the best SMP BR1 driven by team newcomer Stoffel Vandoorne, Vitaly Petrov and Mikhail Aleshin. There wasn't too much between a pair of cars that swapped positions multiple times through this topsy-turvy race. A drivethrough penalty incurred by Vandoorne – who completed an opening stint of two hours and 45 minutes – for an infraction during a virtual safety car had no bearing on the result, but a gearbox glitch for the BR1 did.

Petrov lost the use of fifth and sixth gears with a couple of hours to go. That meant he was powerless to resist Laurent after the penultimate restart, though the stop-start climax to the race meant Aleshin was only just over six seconds behind at the end.

The second of the BREs driven by Sergey Sirotkin, Egor Orudzhev and Stephane Sarrazin came home fourth after losing its front-right wheel in the third hour. The #1 Rebellion shared by Neel Jani, Andre Lotterer and Bruno Senna had a couple of spins, though fifth place, a lap down on the car ahead, could largely be explained by a series of early strategic errors, not helped by a malfunctioning radio and bad luck behind the safety car.

It would still be a push to say that SMP and Rebellion will be able to mount any kind of real challenge the TS050s at Le Mans next month. The race is going to be about Toyota, even if there isn't a true battle for the drivers' title.

"It's looking like the championship is gone," said Conway. "The sister car would more or less not have to not finish Le Mans, which is not something we want. But we will fight to the end."

LMP2: MALDONADO BRINGS BACK HIS MAGIC



Pastor Maldonado produced a bit of the magic he displayed on the way to his only grand prix win at Barcelona in 2012 to seal a first World Endurance Championship LMP2 victory for himself and DragonSpeed. The ex-Williams Formula 1 driver, who shared the Franco-American team's ORECA-Gibson 07 with Anthony Davidson and Roberto Gonzalez, charged down Nicolas Lapierre's Signatech Alpine entry in the penultimate hour and drove away to what turned out to be a four-second victory.

It was far from plain sailing for DragonSpeed as it followed up on its podiums at Shanghai and Sebring. An airlock in the brakes meant they required bleeding on the grid and then Davidson, who started the car, was tagged by Tom Dillmann in the ByKolles LMP1 early in the race. But it was always there or thereabouts and the combination of an on-fire Maldonado and the wet-weather Michelin tyre, which was superior to the corresponding Dunlop, came together to give DragonSpeed the victory.

"We opted for a very good set-up for the different conditions and the team made all the right calls," said Maldonado, who took over the car in fourth position for the run to the flag. "I was pretty confident with the car and, when the rain came back, I thought this is my time."

Signatech, whose ORECA also uses Michels, ran at or near the front throughout the race with Lapierre, Andre Negrao and Pierre Thiriet thanks in part to a strategic fuel stop when the safety car came out for a second time. The French team ultimately ended up third because the G-Drive ORECA ahead of it when the red

flags were shown needed to stop for fuel.

Jean-Eric Vergne, who shared the TDS-run car with Roman Rusinov and Job van Uitert, was actually on his in-lap when the race was called. G-Drive knew it had to gamble on strategy because it was always playing catch-up after losing time early on when Vergne pitted on three consecutive laps. He needed an emergency splash of fuel when the pits were closed, then went onto inters when he made his stop proper and came straight back in for slicks.

G-Drive would have finished fourth had the race run its full duration, which would have promoted the Jackie Chan DC Racing ORECA shared by Ho-Pin Tung, Stephane Richelmi and Gabriel Aubry to the final podium spot. This was the only Dunlopshod P2 with a realistic shot of winning the class. Tung's spin after he took over the car from Richelmi cost 50 seconds and blighted the #38 machine's challenge.

The sister car driven by Will Stevens, Jordan King and David Heinemeier Hansson was never likely to repeat its Sebring class victory in March after being awarded a two-minute stop-go penalty early in the race. King had moved over on Dillmann at the La Source hairpin, putting the ENSO CLM into the barriers.





Cold and wet conditions
on race day played
into Aston's hands

TRIENTIZ
motorsport
IMAGES

GTE Pro: Lynn's win in the Martin Aston

Aston Martin claimed a second GTE Pro victory of the season at Spa over a weekend when the British marque proved the pace of the latest Vantage GTE in both wet and dry conditions. Maxime Martin and Alex Lynn took the win, their first, by just less than a second at the end of a race in which all five manufacturers in class led.

Martin and Lynn qualified a close second to the Ganassi Ford GT of Andy Priaulx and Harry Tincknell in the dry, but conceded that the cold and wet conditions forecast for race day were their hope of winning the race. The second-generation Vantage loses out over a second stint on a set Michelin slicks, a hangover from the short development curve with the French manufacturer after a late switch from Dunlop. The conditions that prevailed on Saturday meant that was unnecessary.

Martin held the lead briefly at the start of the race and then Lynn took the car back to the top spot in dry conditions early in the

third hour. The around-the-outside move on Richard Lietz at the fast Blanchimont left-hander was even braver than it looked, given that the Porsche driver had put him on the grass as they approached Les Combes earlier the same lap. The Aston moved back into the lead in the closing stages as the other cars ahead of it pitted. Lynn handed over to Martin in what turned out to be the car's final pitstop with an hour and 45 minutes of the full duration to go, and Martin was able to hang on in a stint that, he said, "involved quite a lot of fuel saving".

James Calado brought the #51 AF Corse Ferrari 488 GTE he shares with Alessandro Pier Guidi up from fifth on the five-hour mark to second. He reckoned victory would have been possible but for the red flag. Not only did the Ferrari appear quicker in the worsening conditions, but it had made its final fuel stop 25 minutes after the Aston.

Porsche wrapped up the GTE Pro manufacturers' title at the end of a race it

might have won but for conservative strategy devised with that intent. The factory 911 RSR driven by Lietz and team-mate Gianmaria Bruni crossed the line in third place, but was demoted to eighth with a time penalty for causing a collision earlier in the race.

That promoted the other Porsche driven by Kevin Estre and Michael Christensen to third, which means they are now 36 points ahead of their team-mates with just 39 to play for at Le Mans. They were in contention for much of the way, but a late stop to ensure they weren't tight on fuel as the chequered flag approached blunted their chances.

Neither Priaulx and Tincknell nor team-mates Olivier Pla and Stefan Mücke were quite in the game during the race. The Ford GT had an unhealthy appetite for full wets and couldn't switch on the so-called drying wet. Priaulx and Tincknell ended up fifth after the demotion of Bruni and Lietz.

The MTEK BMW squad came away with fourth place for Augusto Farfus and Antonio Felix da Costa. They were running second early in the final hour when a pitstop that might have paid dividends had the race gone the distance dropped their M8 back.

The Dempsey-Proton Porsche crew of Christian Ried, Matt Campbell and Riccardo Pera took GTE Am honours. Their 911 RSR was another car that was tight on fuel at the end, having pitted with an hour and 25 minutes left on the clock.



Porsche clinched manufacturers'
title and Christensen/Estre
lead the drivers' contest

motorsport.tv
Relive this race at Motorsport.TV

RESULTS ROUND 7/8, SPA (BEL), 4 MAY (133 LAPS – 578.819 MILES)

POS	DRIVERS	TEAM	CAR	CLASS	TIME
1	Sebastien Buemi (CHE) Kazuki Nakajima (JPN) Fernando Alonso (ESP)	Toyota Gazoo Racing	Toyota TS050 HYBRID	LMP1	5h44m41.101s
2	Thomas Laurent (FRA) Nathanael Berthon (FRA) Gustavo Menezes (USA)	Rebellion Racing	Rebellion-Gibson R-13	LMP1	-1 lap
3	Stoffel Vandoorne (BEL) Mikhail Aleshin (RUS) Vitaly Petrov (RUS)	SMP Racing (ART)	BRE-AER BR1	LMP1	-1 lap
4	Stephane Sarrazin (FRA) Egor Orudzhev (RUS) Sergey Sirotkin (RUS)	SMP Racing (ART)	BRE-AER BR1	LMP1	-2 laps
5	Neel Jani (CHE) Andre Lotterer (DEU) Bruno Senna (BRA)	Rebellion Racing	Rebellion-Gibson R-13	LMP1	-3 laps
6	Mike Conway (GBR) Kamui Kobayashi (JPN) Jose Maria Lopez (ARG)	Toyota Gazoo Racing	Toyota TS050 HYBRID	LMP1	-4 laps
7	Anthony Davidson (GBR) Roberto Gonzalez (MEX) Pastor Maldonado (VEN)	DragonSpeed	ORECA-Gibson 07	LMP2	-4 laps
8	Jean-Eric Vergne (FRA) Roman Rusinov (RUS) Job van Uiter (NLD)	G-Drive Racing (TDS)	ORECA-Gibson 07	LMP2	-4 laps
9	Andre Negrao (BRA) Nicolas Lapierre (FRA) Pierre Thiriet (FRA)	Signatech Alpine Matmut	ORECA-Gibson 07	LMP2	-4 laps
10	Stephane Richelmi (MCO) Ho-Pin Tung (NLD) Gabriel Aubry (FRA)	Jackie Chan DC Racing (Jota)	ORECA-Gibson 07	LMP2	-4 laps
11	Matthieu Vaxiviere (FRA) Francois Perrodo (FRA) Norman Nato (FRA)	TDS Racing	ORECA-Gibson 07	LMP2	-5 laps
12	Giedo van der Garde (NLD) Frits van Eerd (NLD) Nyck de Vries (NLD)	Racing Team Nederland	Dallara-Gibson P217	LMP2	-6 laps
13	Jordan King (GBR) David Heinemeier Hansson (DNK) Will Stevens (GBR)	Jackie Chan DC Racing (Jota)	ORECA-Gibson 07	LMP2	-6 laps
14	Romano Ricci (FRA) Erwin Creed (FRA) Nick Boulle (USA)	Larbre Competition	Ligier-Gibson JSP217	LMP2	-7 laps
15	Maxime Martin (BEL) Alex Lynn (GBR)	Aston Martin Racing (Prodrive)	Aston Martin Vantage GTE	GTE Pro	-9 laps
16	Alessandro Pier Guidi (ITA) James Calado (GBR)	AF Corse	Ferrari 488 GTE 'evo'	GTE Pro	-9 laps
17	Kevin Estre (FRA) Michael Christensen (DNK)	Porsche GT Team (Manthey)	Porsche 911 RSR	GTE Pro	-9 laps
18	Antonio Felix da Costa (PRT) Augusto Farfus (BRA)	BMW Team MTEK	BMW M8 GTE	GTE Pro	-9 laps
19	Harry Tincknell (GBR) Andy Priaulx (GBR)	Ford Chip Ganassi Team UK	Ford GT	GTE Pro	-9 laps
20	Sam Bird (GBR) Davide Rigon (ITA)	AF Corse	Ferrari 488 GTE 'evo'	GTE Pro	-9 laps
21	Nicki Thiim (DNK) Marco Sorensen (DNK)	Aston Martin Racing (Prodrive)	Aston Martin Vantage GTE	GTE Pro	-9 laps
22	Gianmaria Bruni (ITA) Richard Lietz (AUT)	Porsche GT Team (Manthey)	Porsche 911 RSR	GTE Pro	-9 laps
23	Martin Tomczyk (DEU) Nicky Catsburg (NLD)	BMW Team MTEK	BMW M8 GTE	GTE Pro	-9 laps
24	Stefan Mucke (DEU) Olivier Pla (FRA)	Ford Chip Ganassi Team UK	Ford GT	GTE Pro	-10 laps
25	Christian Ried (DEU) Riccardo Pera (ITA) Matt Campbell (AUS)	Dempsey-Proton Racing	Porsche 911 RSR	GTE Am	-11 laps
26	Salih Yoluc (TUR) Euan Hankey (GBR) Charlie Eastwood (GBR)	TF Sport	Aston Martin Vantage GTE	GTE Am	-11 laps
27	Luis Perez Compagnon (ARG) Matteo Cressoni (ITA) Matt Griffin (IRL)	Clearwater Racing	Ferrari 488 GTE	GTE Am	-11 laps
28	Thomas Flohr (CHE) Francesco Castellacci (ITA) Giancarlo Fisichella (ITA)	Spirit of Race	Ferrari 488 GTE	GTE Am	-11 laps
29	Egidio Perfetti (NOR) Jorg Bergmeister (DEU) Patrick Lindsey (USA)	Team Project 1	Porsche 911 RSR	GTE Am	-11 laps
30	Paul Dalla Lana (CAN) Pedro Lamy (PRT) Mathias Lauda (AUT)	Aston Martin Racing (Prodrive)	Aston Martin Vantage GTE	GTE Am	-12 laps
31	Michael Wainwright (GBR) Ben Barker (GBR) Thomas Preining (AUT)	Gulf Racing	Porsche 911 RSR	GTE Am	-12 laps
32	Eddie Cheever (ITA) Motoaki Ishikawa (JPN) Olivier Beretta (MCO)	MR Racing (AF)	Ferrari 488 GTE	GTE Am	-13 laps
33	Matteo Cairolì (ITA) Gianluca Roda (ITA) Giorgio Roda (ITA)	Dempsey-Proton Racing	Porsche 911 RSR	GTE Am	-18 laps
34	Tom Dillmann (FRA) Oliver Webb (GBR) Paolo Ruberti (ITA)	ByKolles Racing Team	ENSO CLM-Gibson P1/01	LMP1	-38 laps

Winners' average speed 100.756mph. Fastest lap Conway 1m57.394s, 133.458mph.

LMP2 Maldonado 2m04.155s, 126.191mph. GTE Pro da Costa 2m14.208s, 116.738mph. GTE Am Preining 2m16.802s, 114.525mph.

QUALIFYING

1 Conway/Kobayashi 1m53.747s; 2m13.341s; 21 **Mucke/Pla 2m13.392s;**
2 Buemi/Nakajima 1m54.243s; 22 **Estre/Christensen 2m13.683s;**
3 Orudzhev/Sirotkin 1m54.711s; 23 **Bruni/Lietz 2m13.836s;** 24 **Pier Guidi/**
4 Menezes/Laurent 1m55.640s; **Calado 2m14.060s;** 25 **Bird/Rigon**
5 Petrov/Vandoorne 1m56.018s; 6 **Senna/** 2m14.182s; 26 **Eastwood/Yoluc**
Lotterer 1m56.021s; 7 **Vergne/van Uiter** 2m16.061s; 27 **Cairolì/Gia Roda**
2m00.674s; 8 **Richelmi/Aubry 2m01.225s;** 2m16.171s; 28 **Bergmeister/Perfetti**
9 Stevens/Heinemeier Hansson 2m16.390s; 29 **Campbell/Ried 2m17.005s;**
2m01.558s; 10 **Maldonado/Gonzalez** 2m17.093s;
2m01.816s; 11 **Negrao/Thiriet 2m01.832s;** 31 **Fisichella/Flohr 2m17.173s;**
12 **Dillmann/Ruberti 2m02.246s;** 32 **Griffin/Perez Compagnon 2m17.288s;**
13 **van der Garde/van Eerd 2m03.959s;** 33 **Barker/Wainwright 2m19.225s;**
14 **Vaxiviere/Perrodo 2m04.967s;** 34 **Ishikawa no time.**
15 **Ricci/Boulle 2m06.234s;** 16 **Priaulx/**
Tincknell 2m12.885s; 17 **Martin/Lynn**
2m12.952s; 18 **da Costa/Farfus**
2m12.977s; 19 **Catsburg/Tomczyk**
2m13.313s; 20 **Sorensen/Thiim**

CHAMPIONSHIP

LMP drivers
1 Alonso/Nakajima/Buemi 160; 2 **Lopez/**
Kobayashi/Conway 129; 3 **Menezes/**
Laurent 99; 4 **Mathias Beche 73;** 5
Lotterer/Jani 73; 6 **Aleshin/Petrov 71.**
LMP1 manufacturers
1 Toyota Gazoo Racing 177; 2 **Rebellion**
Racing 116; 3 **SMP Racing 86;** 4 **ByKolles**
Racing Team 22.5; 5 **CEFC TRSM Racing 1.**
LMP2 drivers
1 Negrao/Lapierre/Thiriet 143; 2 **Aubry/**
Tung/Richelmi 139; 3 **Maldonado/**
Gonzalez 117; 4 **Jazeman Jaafar/**
Nabil Jeffri/Weiron Tan 98.
GTE drivers
1 Estre/Christensen 140; 2 **Bruni/Lietz**
104; 3 **Pier Guidi/Calado 98.5;** 4 **Pla/**
Mucke 70; 5 **Priaulx/Tincknell 67;**

6 **Lynn/Martin 65.**
GTE manufacturers
1 Porsche 246; 2 **Ferrari 153;** 3 **Ford 137;**
4 Aston Martin 133; 5 **BMW 101.**
GTE Am drivers
1 Perfetti/Bergmeister/Lindsey 113;
2 Castellacci/Fisichella/Flohr 90; 3
Eastwood/Yoluc 87; 4 **Ried/Campbell 83.**

NEXT EVENT
LE MANS
15-16 JUNE
DON'T MISS OUR
LE MANS PREVIEW
6 JUNE ISSUE

BRITISH GT

AND BRDC BRITISH F3 CHAMPIONSHIPS

18/19 MAY 2019

SNETTERTON



Snetterton



FEATURING SOME OF THE WORLD'S MOST PRESTIGIOUS MARQUES, SUCH AS ASTON MARTIN, LAMBORGHINI, AND MCLAREN TO NAME JUST A FEW!

TICKET PRICES:

- WEEKEND ADMISSION (ONLINE)* £27 • SUNDAY RACEDAY ADMISSION (ONLINE)* £20
- SUNDAY RACEDAY ADMISSION (GATE) £25 • CHILDREN UNDER 13 GO FREE



*Discounted advance tickets available until midday Thursday 16 May. Postage fee applies. Calls will cost 7p per minute plus your telephone company's access charge.

0843 453 9000

SNETTERTON.CO.UK

AYRTON SENNA

Racing is in my blood



★ Trustpilot



21st July

By Rob Watson: **Much better quality than I was expecting (download). Was great to see this excellent video again after so many years.**

DVD: £10.00
Download: £6.99
NTSC: £9.99

Free shipping*

Buy now at **dukevideo.com** or call +44 (0)1 624 640 011

*Free shipping on all orders over £10



Bastian/
Neubauer (89)
kept their nose
clean for race
one victory



Mercedes crews survive the Brands melee

**BLANCPAIN GT SERIES
WORLD CHALLENGE EUROPE
BRANDS HATCH (GBR)
4-5 MAY
ROUND 1/5**

You needed a Mercedes-AMG GT3 to do well at Brands Hatch in the opening rounds of the newly christened Blancpain GT World Challenge Europe. And to keep out of trouble.

A win apiece for rival Mercedes teams Auto Sport Promotion and Black Falcon were the main talking points, but so too was the weather that affected qualifying and the difficulties of overtaking at the narrow Kent circuit, which perhaps contributed to a high level of damage.

Race one began with Black Falcon's Luca Stolz leading from pole, but contact between the Lamborghini Huracan of Andrea Caldarelli and Steijn Schothorst's Audi R8 LMS led to mayhem behind – in the melee Kim-Luis Schramm's R8 plunged into the gravel and collected the stranded Schothorst. Caldarelli was slapped with a 60-second stop-go penalty for causing the collision, which he served, only to pit a lap later claiming there was no point continuing having lost a lap thanks to the reprimand.

That left Stolz ahead of the Huracan of Mirko Bortolotti, but a demon set of laps by third-placed ASP driver Nico Bastian and a quick pitstop allowed co-driver Thomas Neubauer to exit the pitlane in the lead.

Maro Engel, in for Stolz, chased hard but struggled in the dirty air of the leading car, forcing him to settle for second ahead of Bortolotti/Christian Engelhart.

Race two had a jumbled grid thanks to rain at the end of the first flying lap of qualifying, plus Engelhart not setting a time after Bortolotti crashed at the end of Q1.

The race lost Markus Winkelhock to the gravel at the first corner when his R8 picked up a puncture from debris after contact between a pack of cars that claimed Tom Gamble's R8 too. ASP polesitter Fabian Schiller led from Nick Foster's R8 and Engel.

Contact between Frederic Vervisch's R8 and David Perel in the Rinaldi Racing Ferrari 488 caused the Belgian to spin and collect Andrea Bertolini's Ferrari and the Audis of Christopher Haase, Dries Vanthoor and Rik Breukers. A full-course yellow became a safety-car period, with Schiller then being penalised for speeding, later rescinded.

Following the pitstops, Stolz led comfortably from Vincent Abril (in for Raffaele Marciello in their ASP Mercedes), but no sooner had Abril left the pitlane than he felt the clutch slipping. On lap 28 of the 39 he lost drive and was out of the fight.

That promoted Caldarelli/Marco Mapelli to second, from Foster/Schothorst's rebuilt R8.

DAVID ADDISON

motorsport.tv

Relive this race at Motorsport.TV

WEEKEND WINNERS



**GT4 EUROPEAN SERIES
BRANDS HATCH (GBR)**

Race 1 Reinhard Kofler/Patric Niederhauser (KTM X-Bow GT4) *above*

Race 2 Jan Kisiel/Max Koebolt (Mercedes-AMG GT4)



**7 RACE SERIES
BRANDS HATCH (GBR)**

Race 1 Phil Jenkins (Caterham 420R) *above*
Race 2 Steve Day (Caterham 420R)



**PORSCHE CLUB CHAMPIONSHIP
BRANDS HATCH (GBR)**

R1 & 2 Simon Clark (Porsche Cayman S)

POWERED BY
 motorsport
STATS

For full results visit motorsportstats.com

ALL PHOTOGRAPHY: HAWKINS



Rast scrapes through restart chaos, as Wittmann spins...

Audacious Audi sends Rast from back to front

DTM
HOCKENHEIM (DEU)
4-5 MAY
ROUND 1/9

On the face of it, Marco Wittmann made a great start to the new turbocharged era of the DTM to lead the points for BMW after the opening round. And, make no mistake, the new version of the M4 DTM racer is awesomely quick over a single lap. But in reality, the big question for BMW is how to haul in big rival Audi over race distances.

After Wittmann's pole-to-flag win in the wet of Saturday, the RS5 DTMs locked out the podium in the dry on Sunday. That much was hinted at when Audi's Robin Frijns put in a highly impressive



...although Wittmann was supreme on Saturday

ZWEI

'race' run of 15 laps during FP1 on Friday, which, as it transpired, would be the only dry running before Sunday. That stint by the Dutchman had been on average three to five tenths quicker per lap than the similar-length runs by the BMWs, even if it hadn't given him a headline lap time.

The paradox – in typically unpredictable DTM style – was that Audi's Sunday victory came from Rene Rast. That seems an odd thing to say, bearing in mind his six-wins-on-the-trot run at the end of 2018. But this success owed much to an inspired strategy from 16th position on the grid, after a fuel-system problem in qualifying. Rast made an early pitstop under a safety car, and used the fresh tyres to slice through the field from 15th to the lead within five laps. You can't make your mandatory stop in the DTM under caution, so Rast would have to pit again, but he now had the advantage of being able to make his second visit to the pits relatively late in the race, giving him a tyre benefit in the late stages too. It was an inspired call by Team Rosberg that kept giving compound interest – all Rast had to do was pick his way through the pack, although you shouldn't underestimate that task given the traditional chaos on double-file DTM restarts.

New-style DTM, therefore, is all about tyres. Downforce is decreased, power is up to at least 610bhp from the new two-litre

four-cylinder units, yet the beauty is that the Hankook control rubber has remained the same as it was with the old V8 machines. They don't cope so well with the torque of these new engines, with the result that we have utterly modern high-tech machinery sliding around and killing rubber as if they're old Sierra RS500s. It's brilliant!

Even more brilliant if you're driving an Audi. It was Philipp Eng who had used BMW's – and, to be fair, his own – one-lap pace to take a crushing pole on Sunday morning with a lap that demolished the old V8 qualifying records. Wittmann was second on the grid, while top Audi was that of third-placed Frijns, over 0.7s off the pace.

Wittmann's bid to repeat his Saturday glory unravelled when he lost ground after the restart when he made contact with Nico Muller's Audi, and then got punted into a spin by the privateer RS5 of Pietro Fittipaldi. This put him to the back of the field, suckered him into an early 'let's-see-what-happens' pitstop, and then he struggled on his tyres late in the race, although the points for eighth place at least preserved his championship lead.

Eng led until the storming Rast came past, and neither could he hold off Frijns, who put in an incredible 23-lap stint on his first set of tyres without ill-effect. Eng was also jumped by Muller at the pitstops, consigning him to fourth place.

WEEKEND WINNERS

DTM

HOCKENHEIM (DEU)

Race 1 Marco Wittmann
RMG (BMW M4 DTM)

Race 2 Rene Rast (below)
Team Rosberg (Audi RS5 DTM)

AUSTRALIAN SUPERCARS

BARBAGALLO (AUS)

Race 1 Fabian Coulthard
DJR Team Penske (Ford Mustang)

Race 2 Scott McLaughlin
DJR Team Penske (Ford Mustang)



For full results visit motorsportstats.com

Unfortunately for Frijns, he lost 4s at his stop, but charged back to finish on the bootlid of second-placed Muller.

There was another who led this race: Paul di Resta in the R-Motorsport Aston Martin. After qualifying a superb third in the wet on Saturday before retiring with brake problems, di Resta used his nous to dive into the pits after Loic Duval's safety-car-triggering off, but before the SC boards were produced. He could therefore stay out until the finish, but his Vantage was losing 3s per lap to the chasing Rast, so he made a second stop before recovering to seventh, and with another lap would have passed the BMW of Timo Glock, whose tyres were wilting.

As well as his win, Rast was the only driver who could hold a candle to Wittmann on Saturday. Unlike the other Audi drivers who started on fresh wet-weather tyres, Rast found the grip he needed to glide onto the BMW's tail and shadow it until he pulled off the circuit with gearbox problems with five laps remaining. His Audi stablemates Mike Rockenfeller and Frijns therefore moved up to second and third, both bemoaning the performance of their rubber. Glock should have made it two BMWs on the podium, but was turned around at Turn 1 following the start after a nudge from Rast, and spent the race burning back through the order to fourth.

MARCUS SIMMONS

Shackled Mustangs still gallop to Barbagallo brace



AUSTRALIAN SUPERCARS

BARBAGALLO (AUS)

3-4 MAY

ROUND 5/15

The Ford Mustang might have had its wings clipped ahead of the first Perth SuperNight round, but nothing could stop DJR Team Penske's Fabian Coulthard and Scott McLaughlin from flying to a pair of wins.

Amid ongoing discontent regarding the Mustang's ability to produce mid-corner downforce, Supercars elected to give the car a haircut before heading west. That meant less overhang on the bottom of the rear-wing endplates, a lower gurney flap, and a shorter undertray for the six Fords in the field.

Whether it would make a difference on the short Barbagallo Raceway layout was the big question. Friday qualifying answered it emphatically. McLaughlin became the first (and only) Supercar driver to lap under 53 seconds at the circuit, setting a 52.852s followed by a 52.814s to secure pole.

The race, however, didn't quite go the polesitter's way. A sluggish getaway let Coulthard sneak into the lead from the outside of the

front row, while Jamie Whincup and Chaz Mostert also barged past McLaughlin on the opening lap.

The reigning champ quickly overhauled Mostert with a third-lap pass at Turn 7, before undercutting Whincup during the round of stops.

However, he was unable to close down his team-mate, and so Coulthard added to his recent Phillip Island success to take consecutive wins for the first time since early 2017. Mostert came home third to make it an all-Mustang podium.

Whincup, meanwhile, was forced to deny team orders to hang on to fourth spot. Triple Eight asked him to let Shane van Gisbergen, coming home strong on fresher rubber, through to have a crack at Mostert with four laps to go. Sensing that Mostert was too far down the road, Whincup refused to yield, and their team manager Mark Dutton later admitted he made the call too late.

On Saturday, McLaughlin's qualifying lap was slightly slower – a 52.905s – but the gap over the field was immense. He was 0.4s clear of Whincup, in a session where the top 22 were all within a second of pole.

From there he was never going to lose the finale, taking an eighth win of the season in a controlled fashion.

Whincup was good enough for second, making him the only non-Mustang driver to finish on the podium all weekend, while Cam Waters jumped Coulthard during the second round of stops – sparked by a safety car to retrieve Scott Pye's crashed Holden – for third.

ANDREW VAN LEEUWEN





Chadwick took pole by 1.730s and the victory by 1.329s

Chadwick becomes first W Series winner

W SERIES
HOCKENHEIM (DEU)
4 MAY
ROUND 1/6

“I got a good start and was away and gone in the lead, and then I went down to Turn 6 and went to brake what I thought was early – but nearly went and ended up in Berlin!” So joked inaugural W Series winner Jamie Chadwick of the moment she lost the lead on the opening lap of the Hockenheim race. It was the only moment her victory seemed in doubt amid a dominant display.

After seven months of conversation and debate over the introduction of the all-women racing championship, and five months of intensive selection process to set the grid, W Series got under way last weekend facing wet and windy conditions.

Chadwick emphatically stamped her mark on proceedings from the start, having gone fastest in both practice sessions ahead of Emma Kimilainen, and took pole in the slippery conditions on Saturday morning by a margin of almost two seconds.

The BRDC British Formula 3 race winner made a good start, but lost the lead after running wide at the hairpin on the first lap, allowing 2009 Ginetta Junior champion Sarah Moore through to head the pack.

Moore’s control of the race was short-lived, as a safety-car period was triggered when Megan Gilkes – the youngest driver on the grid – was caught out by her inexperience on a damp patch of track on cold tyres and wiped out Kimilainen, who had stalled from fourth on the grid at the start, and ended both of their races.

Kimilainen was left lamenting the effect

the retirement will have on her championship hopes, with W Series’ short calendar meaning the Finn has just five races remaining to cut into Chadwick’s lead.

“It makes it frustrating – today was the worst-case scenario to be honest because this was the one thing I didn’t want: a DNF in a race as the calendar is so short,” she said.

“I’m feeling really confident going into Zolder [for the next round]. My aim is to win every race from here so that I may have any chance of winning the championship.”

Chadwick retook the lead from Moore at the restart and turned her focus to defending from Alice Powell, who was hoping to impress after five years away from regular single-seater racing and a disappointing qualifying in which a late spin left her sixth (and curtailed the session with a red flag).

But soon it was Powell who needed to switch to defending, this time from Marta Garcia, another driver returning to single-seater action. The 18-year-old Spaniard hunted the former GP3 racer down, taking full advantage of a gearbox problem when downshifting that was afflicting both Chadwick and Powell.

Chadwick ultimately crossed the line with a small but healthy lead from Powell, ahead of Garcia, Beitske Visser, Moore and Fabienne Wohlwend, the last three having enjoyed a race-long duel for position.

Miki Koyama impressively charged to seventh, having started 17th, with Tasmin Pepper also surging through the field from 16th to eighth. Gosia Rdest and Caitlin Wood completed the top 10.

LUCY MORSON



Powell (left) and Garcia (right) completed the top three

The Montoya Factor undoes Joest Mazdas

**IMSA SPORTSCAR
MID-OHIO (USA)
5 MAY
ROUND 4/12**

The one ‘intangible’ that stood between Mazda Team Joest and its long-overdue maiden DPi victory in the IMSA SportsCar Championship last Sunday at the challenging Mid-Ohio Sports Car Course was the Montoya Factor. That’s as in ex-grand prix driver Juan Pablo Montoya.

The experienced Colombian struggled when he relieved Dane Cameron aboard Team Penske’s #6 Acura ARX-05 at the first pitstop after 40 minutes but he more than atoned in the late stages – and particularly at a restart following the day’s only full-course caution with 24 minutes remaining in the 160-minute contest. Montoya romped clear of Tristan Nunez’s Mazda RT24-P before measuring his pace to repeat the team’s success from one year ago.

Mazda was left to rue yet another event in which a potential win was agonisingly ripped from within its grasp, but could still claim some bragging rights with the performance of its pair of Multimatic-tuned prototypes. Briton Oliver Jarvis claimed his second pole of the season with a new lap record of 1m10.705s, fully a second below Helio Castroneves’s 2018 qualifying standard. Jarvis also posted a new race lap record on his way to a second-place finish, while the sister car of Jonathan Bomarito and new recruit Ryan Hunter-Reay, who stepped in impressively for the absent (at Spa) Harry Tincknell, completed the podium.

After much of practice had been blighted by poor weather, the sun poked through just in time for the Sunday afternoon start to presage yet another intriguing battle for supremacy. Jarvis narrowly maintained his advantage at the start but was unable to shake off Cameron, who remained hot on



his tail before finding a way through amid heavy GTD traffic on lap eight.

The Californian eked out a lead of almost five seconds prior to the first pitstops, after which Jarvis, who had pitted one lap earlier, was able to sneak past Montoya, also in traffic, on lap 35. Jarvis controlled the middle stages before handing over to Nunez at half-distance.

This time Montoya had the benefit of greater familiarity over his young Floridian rival. Superb in and out-laps, assisted by typically excellent service from Penske, immediately transformed a three-second deficit into a three-second advantage.

Montoya was never likely to be beaten from there, although a full-course caution with just over 30 minutes remaining offered a sliver of hope for Mazda. No such luck. Montoya’s sublime skill on cold tyres – especially on a notoriously low-grip surface – proved the difference as he pulled three seconds clear of Nunez on the first green-flag lap, then extended his margin to over six seconds before easing off to ensure a memorable victory.

Brazilian pair Pipo Derani and Felipe Nasr (Action Express Cadillac) extended their championship lead to four points after finishing in fourth spot, the only other

runner on the lead lap.

Laurens Vanthoor and Earl Bamber maintained Porsche’s stranglehold on GTLM by finishing just over two seconds clear of the Corvette of Jan Magnussen and Antonio Garcia, while Englishman Jack Hawksworth teamed with American Richard Heistand to secure his long-overdue maiden GTD victory for the AIM Vasser Sullivan Lexus team after a thrilling late duel with the Acura of Trent Hindman/Mario Farnbacher.

JEREMY SHAW



Hawksworth/Heistand
Lexus topped GTD battle



WEEKEND WINNERS

W SERIES

HOCKENHEIM (DEU)
Jamie Chadwick

IMSA SPORTSCAR MID-OHIO (USA)

- DPi** Dane Cameron/Juan Pablo Montoya
Acura Team Penske Acura ARX-05
- LMP2** Eric Lux/Matt McMurry
PR1/Mathiasen Motorsports
ORECA-Gibson 07
- GTLM** Earl Bamber/Laurens Vanthoor
Porsche GT Team Porsche 911 RSR
- GTD** Jack Hawksworth/Richard Heistand
AIM Vasser Sullivan Lexus RC F GT3

NASCAR XFINITY SERIES

DOVER (USA)
Christopher Bell
Joe Gibbs Racing Toyota Supra

NASCAR TRUCK SERIES

DOVER (USA)
Johnny Sauter
ThorSport Racing Ford F-150



For full results visit motorsportstats.com

SUBSCRIPTION OFFER

YOUR SOURCE OF EVERYTHING MOTORSPORT

TRY 6 ISSUES OF AUTOSPORT FOR £6



SUBSCRIBE ONLINE www.autosportmedia.com/offer/as2019

OR CALL 0344 848 8817 QUOTE PROMO CODE PASP19GEN

FOR OVERSEAS RATES CALL +44 (0) 1604 251 451

WHY SUBSCRIBE?

SAVE UP TO 63%
on the cover price

ON THE MOVE
read on your iPhone or iPad

FREE DELIVERY
direct to your door

IN EVERY ISSUE

LATEST NEWS
from across a range of series

UNRIVALLED STORIES
from our award winning journalists

EXTENSIVE ANALYSIS
of everything Formula 1

Terms and conditions: Offer valid for new UK subscriptions by Direct Debit only. After your first 6 weeks, your subscription will continue at £35.99 every 13 issues for the print and digital bundle. Digital magazines only available on iPhone and iPad. Direct Debit rates are valid for one year after which they are subject to change. Should you wish to cancel your subscription it will be cancelled on expiry of the current term. You will be emailed instructions of how to gain access to your digital subscription. Savings based on the standard UK cover price. Offer ends 19 June 2019.

Cerumo pair end two-year win drought

SUPER GT
FUJI (JPN)
4 MAY
ROUND 2/8

Yuji Tachikawa and Hiroaki Ishiura took their Team Cerumo-run Lexus LC 500 to victory at Fuji last Saturday, claiming their first Super GT spoils since winning the same event in 2017.

Tachikawa, the 2001 and 2013 champion, started the wet race seventh on the grid. By lap 13 he had carved his way into the lead. But further heavy rain brought out the safety car, and the race was halted for 30 minutes.

After the action resumed, the TOM'S Lexus of Nick Cassidy (sharing with Ryo Hirakawa) and NISMO Nissan of Ronnie Quintarelli (co-driven by Tsugio Matsuda) made it a three-way scrap for the lead. But that soon dropped to two as Hirakawa and the Impul Nissan of James Rossiter touched



Lexus and Nissan fight lasted well into the final stint

at the first corner after exiting the pits, and the subsequent wheel damage forced Hirakawa to stop again.

That teed up a dice that continued well into the third stint, and with 11 laps to go Tachikawa regained the lead as Quintarelli struggled with fading rear grip in the Nissan. Tachikawa stretched his advantage, while Naoki Yamamoto – after a middle stint from Jenson Button – moved into

third in the Team Kunimitsu Honda NSX.

The reigning champions had an eventful race. Having started 12th, Yamamoto spun early on and had to push through from the back. Once he'd handed over to Button, a drying track allowed the ex-Formula 1 champ to continue the recovery before Yamamoto took the final stint and demoted the Lexus of Heikki Kovalainen from third.

JIRO TAKAHASHI

Schumacher beats Fittipaldi as the rain denies Blomqvist

FORMULA REGIONAL
EUROPEAN CHAMPIONSHIP
VALLELUNGA (ITA)
4-5 MAY
ROUND 2/8

The Formula Regional European Championship grew to 14 cars for its second round, but celebrations were dampened by torrential rain that caused the third race to be cancelled.

David Schumacher won race one from the front – pleasing his dad and team boss, ex-Formula 1 racer Ralf – ahead of Enzo Fittipaldi and Marcos Siebert.

It was Siebert's maiden podium, but a decision to gamble on slick tyres meant

he was unable to repeat it in the wet race two, while team-mate Schumacher never looked on the pace.

Having won the first three races of the season at Paul Ricard, Prema Powerteam became the team to beat once again as Fittipaldi and Frederik Vesti surged to the front. But first they had to get by Isac Blomqvist (KIC Motorsport), who had dominated qualifying. Fittipaldi took half the race to manage it, followed a few corners later by Vesti, who then spent several laps pressuring his team-mate.

Fittipaldi's grip on the lead looked increasingly precarious and, although he retained it through a brief off-track excursion, Vesti eventually got by as the track began to dry. Team-mate Olli Caldwell collected his first podium of the season, while Blomqvist fell to sixth and was then denied redemption from pole in race three by the weather.

Joey Mawson picked up two fourths for Van Amersfoort Racing, the first under pressure from Vesti. Matteo Nannini, nephew of 1989 Japanese GP winner Alessandro, also made his debut, racing with dispensation for being underage.

ELLIOT WOOD



Schumacher (27) won from Enzo Fittipaldi in the first encounter

WEEKEND WINNERS

SUPER GT
FUJI (JPN)

Yuji Tachikawa/Hiroaki Ishiura
Team Cerumo Lexus LC 500

FORMULA REGIONAL
EUROPEAN CHAMPIONSHIP
VALLELUNGA (ITA)

Race 1 David Schumacher
US Racing

Race 2 Frederik Vesti
Prema Powerteam

Race 3 Cancelled due to rain

BRAZILIAN STOCK CARS
VELO CITTA (BRA)

Race 1 Thiago Camilo
Ipiranga Racing

Race 2 Ricardo Zonta
Shell V-Power

EUROPEAN RALLY CHAMPIONSHIP
CANARY ISLANDS RALLY (ESP)

Pepe Lopez/Borja Rozada
Citroen Rally Team Citroen C3 R5

POWERED BY
motorsport
STATS

For full results visit motorsportstats.com



Marquez stayed close to pack before unleashing speed

Home win seals Marquez's redemption

MOTOGP
JEREZ (ESP)
5 MAY
ROUND 4/19

Marc Marquez had a point to prove at Jerez, after his golden run of dominance at the Circuit of The Americas in the previous MotoGP round had come to a dramatic end when he crashed out – a mistake blamed on pilot error and a mechanical issue. So bulletproof was he at the venue previously, his mental state was called into question ahead of the Spanish Grand Prix. Now the Honda star had to ensure his rivals knew his confidence had not been dented, and that an exploitable weakness had not developed when he hit the Austin asphalt.

Wary that the opening 10 laps would be a pack race, Marquez ran with the Petronas SRT Yamaha duo of Franco Morbidelli and Fabio Quartararo – who had stripped Marquez of his youngest polesitter record 24 hours earlier – swarming behind him, safe in the knowledge that the race would come to him when grip started to fade.

On lap 10, he put his endgame into action. He raised his 0.9-second gap to Morbidelli to 1.7s, which extended by a further 0.1s when Quartararo carved past his SRT team-mate for second at the newly renamed Pedrosa corner of Turn 6 on lap 11.

Quartararo looked set to offer up a possible challenge once clear of his team-mate, as he lapped within 0.250s of Marquez on the next two tours. But the

rookie sensation's dream weekend ended in heartbreak on lap 14 when the gear shifter on his customer Yamaha broke. Marquez now had 3.8s in hand – an identical advantage to the one he was enjoying at Austin when he fell.

If there was any doubt of where his head was at, a record 1m38.051s on the following lap dealt the final hammerblow. History would not repeat itself, and Marquez would not be caught. He cruised to his redemption and the lead in the standings.

Alex Rins ensured Marquez could only pull out a single-point lead. The Suzuki rider failed to make the qualifying gains he has been seeking this season, and was left to pick his way through traffic on the tight Jerez circuit from ninth on the grid. Lapping similarly to Marquez once through into second, Rins could well have been a contender for Suzuki's first back-to-back wins since 1999 with a better Saturday.

Another rider hindered by a lacklustre qualifying was Valentino Rossi. Missing a place in Q2 by just 0.072s, the Yamaha rider faced an uphill struggle coming from 13th. He reckoned he could have challenged for the final podium slot alongside team-mate Maverick Vinales and the works Ducati pair had he been further up the grid. Now nine points adrift in the standings, sixth limited the damage significantly.

Rossi predicted Jerez would be the litmus test for Yamaha to gauge its progress from last year. Third for Vinales – who feels he has “recovered” confidence on the M1 bike, having kept pace with the leaders from the



ALL PICS: GOLD AND GOOSE
 motorsport
 IMAGES

Morbidelli (21) was part of impressive SRT attack



Marquez proved that US tumble was only a blip



Damage limitation was the name of Rossi's game

off – and the strong SRT showing suggest Yamaha has just about scraped a pass.

Andrea Dovizioso was odds-on favourite to take the fight to Marquez, but the Ducati's deficit through fast corners remains and he could do nothing to advance on fourth, despite his best efforts to beat Vinales in the closing laps. Only three points down in the standings, his afternoon – as evidenced in last year's race when he was wiped out of podium contention – could have been far worse. But worry remains that Ducati's current level may not be enough to topple Marquez.

Danilo Petrucci shadowed team-mate Dovizioso by two seconds to secure a much-needed first top-five result of the year, as he enters what will surely be the make-or-break phase of the season in his bid to hold onto his factory seat for 2020.

Morbidelli compounded SRT's trying day, as tyre woes dropped him to seventh, ahead of LCR Honda duo Cal Crutchlow and Takaaki Nakagami. HRC tester Stefan Bradl took 10th on his first wildcard of the year.

Bradl's result proved humbling for Jorge Lorenzo. Adamant that Jerez – the scene of his first Ducati rostrum in 2017 – would signal the true start to his so-far-troubled debut Honda season, he instead lucked into a lowly 12th after KTM's Pol Espargaro misread his pitboard and backed off a lap too early. With Lorenzo still complaining of a lack of "support" from the RC213V into corners, Honda clearly has a long way to go before its 'dream team' is fully operational.

LEWIS DUNCAN

RESULTS ROUND 4/19, JEREZ (ESP), 5 MAY (25 LAPS – 68.708 MILES)

POS	RIDER	TEAM	TIME
1	Marc Marquez (ESP)	Honda	41m08.685s
2	Alex Rins (ESP)	Suzuki	+1.654s
3	Maverick Vinales (ESP)	Yamaha	+2.443s
4	Andrea Dovizioso (ITA)	Ducati	+2.804s
5	Danilo Petrucci (ITA)	Ducati	+4.748s
6	Valentino Rossi (ITA)	Yamaha	+7.547s
7	Franco Morbidelli (ITA)	Petronas Yamaha	+8.228s
8	Cal Crutchlow (GBR)	LCR Honda	+10.052s
9	Takaaki Nakagami (JPN)	LCR Honda	+10.274s
10	Stefan Bradl (DEU)	Honda	+13.402s
11	Alex Espargaro (ESP)	Aprilia	+15.431s
12	Jorge Lorenzo (ESP)	Honda	+18.473s
13	Pol Espargaro (ESP)	KTM	+20.156s
14	Johann Zarco (FRA)	KTM	+26.706s
15	Tito Rabat (ESP)	Avintia Ducati	+28.513s
16	Karel Abraham (CZE)	Avintia Ducati	+36.858s
17	Bradley Smith (GBR)	Aprilia	+41.390s
18	Miguel Oliveira (PRT)	Tech3 KTM	+41.570s
19	Hafizh Syahrin (MYS)	Tech3 KTM	+50.568s
R	Jack Miller (AUS)	Pramac Ducati	22 laps-accident
R	Joan Mir (ESP)	Suzuki	20 laps-accident
R	Fabio Quartararo (FRA)	Petronas Yamaha	13 laps-gear shifter
R	Francesco Bagnaia (ITA)	Pramac Ducati	6 laps-accident
NS	Andrea Iannone (ITA)	Aprilia	

Winner's average speed 100.194mph. **Fastest lap** Marquez 1m38.051s, 100.906mph.

QUALIFYING 2 1 Quartararo 1m36.880s; 2 Morbidelli 1m36.962s; 3 Marquez 1m36.970s; 4 Dovizioso 1m37.018s; 5 Vinales 1m37.114s; 6 Crutchlow 1m37.175s; 7 Petrucci 1m37.209s; 8 Nakagami 1m37.332s; 9 Rins 1m37.351s; 10 Bagnaia 1m37.384s; 11 Lorenzo 1m37.496s; 12 Mir 1m37.514s.

QUALIFYING 1 Vinales 1m37.164s; Bagnaia 1m37.299s; 13 Rossi 1m37.371s; 14 Bradl 1m37.406s; 15 Miller 1m37.605s; 16 A Espargaro 1m37.625s; 17 P Espargaro 1m37.798s; 18 Zarco 1m37.820s; 19 Smith 1m38.357s; 20 Rabat 1m38.403s; 21 Abraham 1m38.447s; 22 Oliveira 1m38.894s; 23 Syahrin 1m40.042s.

RIDERS' CHAMPIONSHIP 1 Marquez 70; 2 Rins 69; 3 Dovizioso 67; 4 Rossi 61; 5 Petrucci 41; 6 Vinales 30; 7 Miller 29; 8 Nakagami 29; 9 Crutchlow 27; 10 Morbidelli 25; 11 P Espargaro 21; 12 A Espargaro 18; 13 Quartararo 17; 14 Lorenzo 11; 15 Bagnaia 9; 16 Mir 8; 17 Oliveira 7; 18 Zarco 7; 19 Bradl 6; 20 Iannone 6; 21 Rabat 2; 22 Abraham 0; 23 Syahrin 0; 24 Smith 0.

MANUFACTURERS' CHAMPIONSHIP 1 Honda 76; 2 Ducati 70; 3 Suzuki 69; 4 Yamaha 67; 5 Aprilia 22; 6 KTM 21.



Quartararo became youngest polesitter, beating Marquez

WEEKEND WINNERS

MOTO2

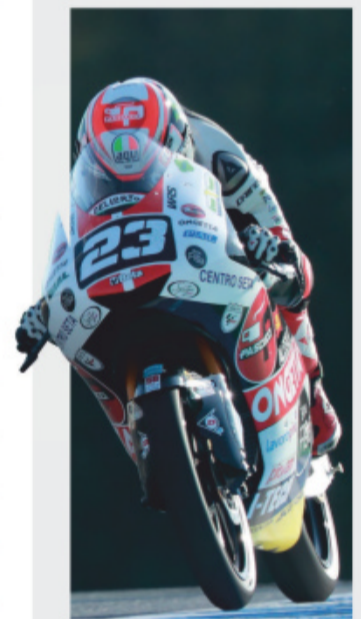
JEREZ (ESP)

Lorenzo Baldassarri
Pons Racing Team
Kalex

MOTO 3

JEREZ (ESP)

Niccolo Antonelli
(below)
SIC58 Squadra Corse
Honda



NEXT REPORT

FRENCH GP
23 MAY ISSUE

Can Alex Rins or Ducati overturn the gap to Marc Marquez, or will he be able to extend his single-point advantage at a venue where he won last year?

AWNINGS



aireshelta
No1 for Inflatable Structures.
With you from the Paddock to the Podium.
www.aireshelta.com

EXHAUSTS

Inconel & Stainless Steel Specialists
SIMPSON
Race Exhausts
Tel: 01753 532222
www.simpsonraceexhausts.com

GEARBOXES

Gearboxman.com
COMPETITION TRANSMISSION SERVICES
Gearboxes & Axles for Road, Race, Rally and more
Telephone: 01582 840008 Fax: 01582 840007

HELMET GRAPHICS

Mike Fairholme Designs
Sole approved painter of Arai helmets.
Silver Birches, Corby Birkholme, Nr Grantham, Lincs NG33 4LE.
Tel: 01476 550630. Fax: 01476 550029.
email: fairholmedesigns@btconnect.com
www.fairholmedesigns.co.uk

MEMORABILIA



FINAL LAP
For Everything Formula One
www.finallap.net **WE BUY AND SELL**
+44 (0) 1245 287588 / 07771 920345

MOTORSPORT LEGAL ADVICE

Motor Sport Legal Advice
Tudor Alexander, L.I.B Solicitor
07887 713512

RACE PARTS

Autoparts and Hydraulics
LMA
sales@LMAautoparts.com

Passionate About Motorsport
JJC race and rally
www.jjcraceandrally.com

ARE DRY SUMP SYSTEMS
ARMSTRONG RACE ENGINEERING INC.
WWW.DRYSUMP.COM (916) 652-5282

RACE RADIO

Pit to Car **Autotel**
Radio solutions **Digital Race Radio**
0044(0)1508 528837
www.raceradio.co.uk

RACING

MARDI GRAS MOTORSPORT
www.mardigras.co.uk

www.mcrracecars.co.uk
phone. 07771 762145
MCR's for sale
arrive & drive packages

RACING

PORSCHESHOP
10% off with website
voucher code **AUTOTEN**
Or Call: 0121 585 6088

demon-tweeks.com

AUTHORISED DISTRIBUTOR
OMP YBRACING
MOTORSPORT & PERFORMANCE
WWW.YBRACING.COM

RACING

CARTEK
MOTORSPORT ELECTRONICS
www.CARTEKMOTORSPORT.COM

RACEWEAR

GPR Grand Prix Racewear
Silverstone
The best of racewear & kartwear
www.gprdirect.com

TRACK PREPARATION

KD KENDALL DEVELOPMENTS
3D SCAN - REVERSE ENGINEERING
Tel: 01480 718117 • Track Support • 3D Design
• Track Preparation • Restoration
www.kendall-developments.com

TRAILERS & TRANSPORTERS

Signature RV.co.uk
RV SALES AND SERVICE

BRIAN JAMES TRAILERS
» Connected to you
www.brianjames.co.uk

www.EMPIRE RV.co.uk
Living the high life
Tel: +44 (0) 1761 300 489
www.EmpireRV.co.uk ■ info@EmpireRV.co.uk

WEB DIRECTORY



TO ADVERTISE IN THE WEB DIRECTORY
PLEASE CALL +44 (0) 20 3405 8109
OR EMAIL ads@autosport.com

BRIAN JAMES TRAILERS

»» Connected to you

www.brianjames.co.uk

Style and Substance

Introducing the new Race Transporter 6 by Brian James Trailers. An even more stylish and capable enclosed trailer specifically suited to car transportation.

New features include a standard automatic tilt-operation, invaluable for all professional motorsport or transport operations. An extra side access hatch door provides the ability to easily reach in for securing the standard equipment 'over wheel' strap system.

In addition, many new optional features are now available, all designed to offer the latest technology and improved convenience to all operators.

Race Transporter trailers are available from £ 7,699 + vat

Race Transporters are available ex-stock at many UK dealers. Please visit our website or call us for further details.

**RACE TRANSPORTER 6****T +44 (0)1327 308 833**

For more information and details on the Brian James Trailers range, please contact our head office



HIGH QUALITY TRAILERS
FOR CLUB, PRIVATE AND
PRO MOTORSPORTS

Woodford covered trailers **Superior in design, quality and finish**

TRAILERS & TRANSPORTERS



Woodford Trailers Limited | 14 Great Central Way, Daventry, Woodford Halse, Northants, NN11 3PZ | Telephone 01327 263384

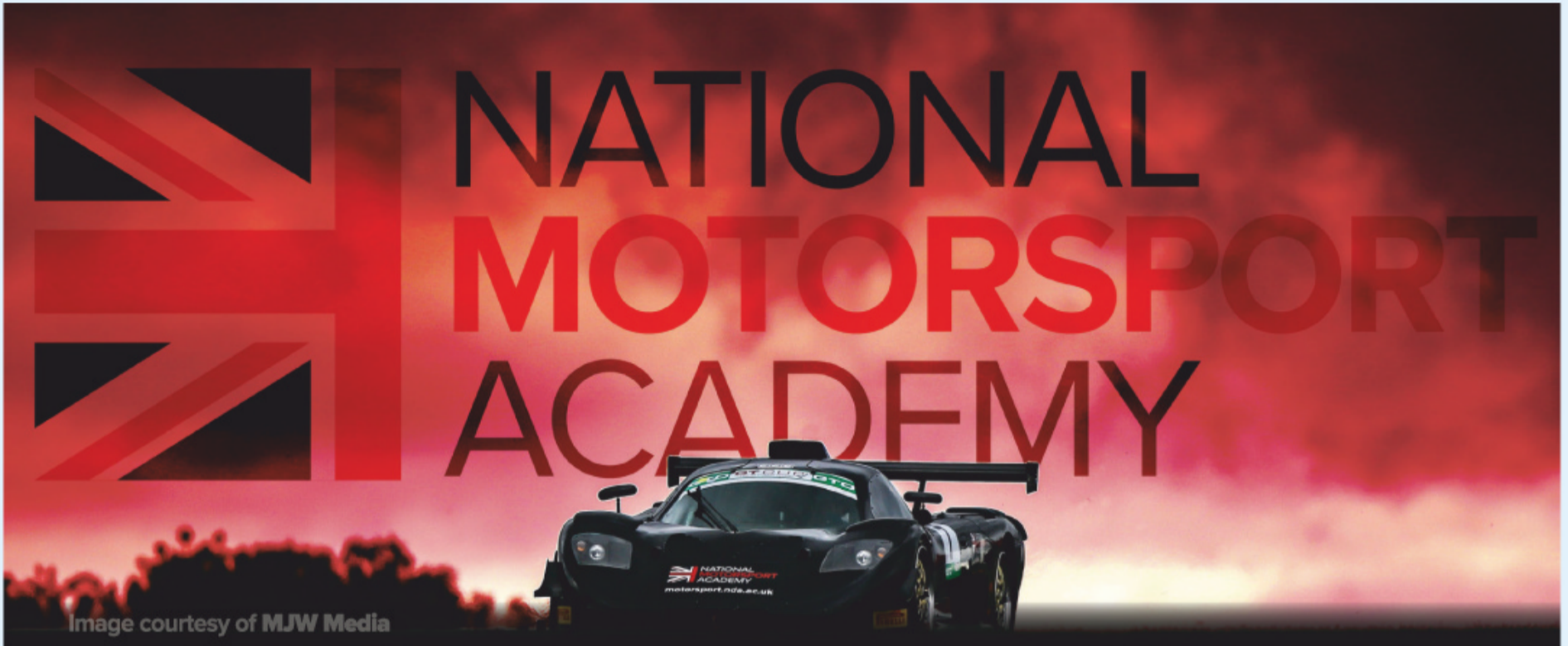


Image courtesy of MJW Media

WORLD'S FIRST **ONLINE** Motorsport Engineering Degrees

BSc ^(Hons) Motorsport Engineering
And Final Year Top-Up*

MSc Advanced
Motorsport Engineering*

**NEW MASTER'S DEGREE
NOW ENROLLING!**

<https://motorsport.nda.ac.uk>



Apply **ONLINE Today!** +44 (0)1159 123456

*All degrees awarded by our Academic partner De Montfort University.

FOR SALE CHAMPIONSHIP WINNING MOSLER MT900

Beautifully maintained by the NMA Team
Full support is also available for GT Cup,
Britcar, Supercar Challenge etc. at cost

£POA Contact Kevin Riley
07973 675734



MARKETPLACE

WANTED

WANTED

RACE USE
FORMULA 1
SINGLE HELMETS
OR COMPLETE
COLLECTIONS

CONTACT ROB:
07771 920 345
ROB@FINALLAP.NET

MARKETPLACE

RACE PRODUCTS

Co-ordsport
DEALERS

PartBOX
Performance and Tuning Parts

Leading performance brands online

Whether you are a trader, a rally team or a performance car enthusiast, we have the technical knowledge and parts to meet your needs

www.part-box.com

MEMORABILIA

F1 COLLECTORS .COM



#1 FOR F1 MEMORABILIA & AUTOGRAPHS

We buy and sell F1 items
AYRTON SENNA specialists

Call CHRIS GRINT

01763 274448

email:- sales@f1collectors.com

AUTOSPORT

If you wish to advertise your products and services with Autosport in print and online please contact

Ben.kavanagh@
motorsport.com

or call

+44 (0) 20 3405 8109

MEMORABILIA

**SPECIALIST CARS MODELS AT
LE MANS 24 HOURS 2019**

ARE YOU LOOKING FOR
LE MANS AND RACING MODELS AT
1/43 AND 1/18?

VISIT OUR STAND
AT RESTAURANT « L'ENDURANCE »

WHERE: 210 AVENUE DU PANORAMA
LE MANS OPPOSITE TO
« PARKING ROUGE »

WHEN: MONDAY JUNE 10 TO
SATURDAY JUNE 15

WHAT: SPARK - IXO - MINICHAMPS

Contact:
alain.miginiac1@orange.fr

RACE PREPARATION



**MARDI GRAS
MOTORSPORT**
Saloon Car Preparation

2A Brunel Close,
Drayton Fields Ind Estate,
Daventry, NN11 8RB

tel: 01327 858006
email: info@mardigras.co.uk
web: www.performanceclutch.co.uk

Distributors and agents for:



FIRE SERVICES
Extinguisher Refills on Site

VARLEY RED TOP™
THE ORIGINAL RACING BATTERIES

FERODO RACING



lifeline
Fire & Safety Systems Ltd.



SCHRICK





THE RACER

Pit talk from the HRDC



VOL NO.
09 109
APR 15



HISTORICS
ON THE HILL
HRDC

NEW EVENT AT A GREAT HISTORIC VENUE!



LYDDEN HILL MONDAY 27th MAY 2019

A FULL RACE PROGRAMME OF HRDC RACES!

COMPETITION ENQUIRIES: JULIUS THURGOOD 07850 361159 • direct@juliusthurgood.co.uk • www.hrdc.eu

JOIN THE BEST TEAM IN HISTORIC RACING



MARKETPLACE



Workshop and Garage Cabinetry

Create an organised, productive, and professional workshop

Buy ready-configured cabinet systems online at GaragePride, or we can provide a complete cabinet and workbench design and installation service working closely with you to meet your precise requirements. Unlike other suppliers, we are not tied to a single cabinet brand but would propose one that best meets your budgetary, functional and aesthetic needs.

www.garagepride.co.uk 01743 742028



Cabinets
Pictured
bott

MARKETPLACE

Turn your garage into a showroom



Robust interlocking floor tiles
No messy adhesives
Installation service available
Call **01676 523386** for your no obligation quotation



CHOICE OF 11 ATTRACTIVE COLOURS

DYNOTILE

Typical 20ft x 17ft garage supplied and installed with skirting for less than £1500.00. Installation service not available in all areas of the UK - contact Dynotile for details.

WWW.DYNOTILE.CO.UK



If you wish to advertise your products and services with Autosport in print and online please contact
Ben.kavanagh@motorsport.com
 or call
 +44 (0) 20 3405 8109

RACE PRODUCTS



EXPERT ADVICE • MASSIVE STOCK • RAPID DELIVERY



LOW RATE **0844 375 2196** demon-tweeks.com
CALLS MAY BE RECORDED FOR TRAINING PURPOSES

FREE 2019 CATALOGUE

532 pages of motorsport accessories, parts, and innovative new products. Available to order online now.



demon-tweeks.com

RACE PREPARATION



CAGED LASER ENGINEERING

Automotive Engineering & Fabrication Specialists
 Bespoke & Standard Roll Cages



MSA

FIA

-  ROLL CAGE FABRICATION
-  CHASSIS FABRICATION
-  RACE CAR PREP
-  PIT EQUIPMENT
-  POWDER COATING
-  MACHINING
-  SHEET METAL WORK
-  CNC FOLDING
-  LASER CUTTING
-  DESIGN

Unit 12
 Ash Farm
 Business Park
 Holcombe
 Radstock
 BA3 5EX

+44 (0) 1761 239133
info@cagedlaser.co.uk
www.cagedlaser.co.uk




MARKETPLACE



RECRUITMENT
DRIVEN BY
PASSION



MOTORSPORT JOBS

Find your dream job

Here at Autosport we've been helping people find great jobs in motorsport for over 60 years. Today we're launching a new global motorsport jobs site, where you can:

- Find the latest jobs in motorsport
- Apply for a job with just one click
- Upload your CV and let recruiters find you
- Set up job alerts - don't miss out on your dream move

Register at motorsportjobs.com today 🔍



Motorsport Jobs
- A Motorsport
Network Company



motorsport
JOBS

Want to advertise a motorsport job?

If you are recruiting in motorsport and wish to advertise with Autosport in print and digital please contact

James.robinson@motorsport.com
or call
+44 (0) 20 3405 8105

For all current vacancies advertised please visit our website
Motorsportjobs.com



motorsport
JOBS



Senior Aerodynamics Engineer

The purpose of this role is to design race car aerodynamic surfaces, wind tunnel model parts and assemblies, and provide leadership for a localised area of the car, with the aim of delivering high quality and legal surfaces, model parts and assemblies to CFD, Wind Tunnel and final release to the race car.

Role dimensions:

- Sits within the Aero Design Team, which is responsible for all design of surfaces and components for the Aero Dept.
- Reports to the Team Leader – Aero Design, and will involve close cooperation with the rest of the Aero Design team, the Vehicle Engineering team, the modelshop, production team, the WT and CFD Aerodynamicists.
- Role can be specialised in model design, surface design or flexible and skilled in both.
- This role is factory based but may involve occasional travel to our wind tunnel facility.
- This role is predominantly carried out during standard working hours, but will sometimes include additional hours and weekends.

To apply now visit www.motorsportjobs.com

MOTORSPORT JOBS



We have a number of exciting permanent, fixed term and contract opportunities at our purpose-built Milton Keynes facility.

Energy Storage Systems Engineer

Responsible for the system level development of the primary high voltage circuit including battery, battery management and various subsystems, fault investigation and countermeasures for ESS pack production or sign-off. Also for pack fault investigation and follow up at factory or after races or tests.

ERS Test Engineers/Technicians

You will operate and evolve Factory ERS test facilities to support development of the Formula 1 power unit, with the opportunity to devise and commission new equipment.

High Voltage System Engineer

Responsible for system-level design and development of primary power electronics units including inverter, converter (high-to-low voltage DC) and other subsystems. Also responsible for fault investigation, analysis and setting countermeasures during the ESS pack production stage/sign-off or at factory after race/test use.

Senior ERS Systems Engineer

Based within the ERS development project, you will take responsibility for the energy management simulation of motorsports or high performance vehicles including electrical and mechanical systems.

Electrical & Test Engineers

Working within the ESS development/production teams, you will be responsible for proof-out design concept, testing components of the ESS pack and cooling, HV and battery monitoring systems. You will provide feedback/advice to the design team based on test results, design and test electrical parts of the ESS programme and be responsible for test rig/garage equipment for ESS.

HONDA FORMULA 1 IS HIRING



Our Associates enjoy: Competitive Salaries & Pension Scheme, Private Medical Insurance, Free On Site Gym Facilities, 30 Days Holiday, Free On Site Parking, Access to Honda Product Discounts.

All positions will be based in Milton Keynes. Overseas travel and weekend working is expected as part of normal business operation.

The successful candidate must have a valid proof of right to work in the UK upon starting their employment.

To apply please send your CV to:
Nick Gerrell (Gerrell & Hard) - nickg@gahl.co.uk

The BMW 1800 TiSA will be run by Sharp's family IDL squad



LAWRENCE

SHARP SWAPS PORSCHE SUPERCUP FOR HISTORICS

HISTORIC TOURING CARS

Porsche Supercup racer Tom Sharp is switching to historic racing this season with a pre-1966 BMW 1800 TiSA touring car.

Sharp, 27, progressed through Ginettas and the Porsche Carrera Cup GB and then spent the past two seasons in the Formula 1-supporting Porsche Supercup.

“We thought we’d try something a little bit different,” said Sharp. “I’ve visited the Silverstone Classic a few times as a spectator and wanted to have a go. The last couple of years have been really good fun travelling the world and racing in the Porsche Supercup.

“The time was right for me to move away from the Supercup and maybe do something a bit less full-on and more focused on just the fun of racing. This is back to basics and a totally different experience.”

The BMW was previously owned by Adrian van Hooydonk from BMW and has raced at Goodwood. Like the Porsches, it will be run by the family-based IDL team and Sharp plans to contest the Masters Pre-66 series, starting at Brands Hatch on 25-26 May.



Sharp was Porsche regular

MOTORSPORT IMAGES/PORTLOCK

While Sharp is planning his debut, a car with an impressive history returned to action at the Donington Historic Festival last weekend.

A Lotus Cortina Mk2 used by Graham Hill and Jacky Ickx for Team Lotus in 1967 raced for the first time in nearly 50 years.

Now owned and raced by John Miles and his son Adrian, the car is thought to have last raced in 1971 and is one of only two built for the 1967 British Saloon Car Championship. For 1968, it moved to Alan Mann Racing and was raced in Europe by Frank Gardner and Richard Attwood.

Miles acquired the car at auction last year and entrusted it to Henry Mann at Alan Mann Racing for restoration to exact period specification.

“We wanted it back to just how it was in 1968 and we plan to do some of the bigger races,” said Miles, who has competed in events such as Tour Auto and Tour Britannia. “It is one of only two and the other one is in Switzerland.”

The car was tested at Silverstone last Thursday but hit gearbox problems. A fresh ‘box was installed overnight ahead of qualifying for the Historic Touring Car Challenge event at Donington Park, but did not finish the race.

PAUL LAWRENCE



Ex-Hill and Ickx Cortina is back on track

LAWRENCE

New GT4 Audi to join British GT grid at Snetterton



BRITISH GT

A ninth manufacturer will be represented in the GT4 class of British GT at the next round at Snetterton later this month as Steller Performance will run a new Audi R8 LMS GT4.

Steller contested a partial campaign last season with a pair of Toyota GT86s, and 2016 British Formula 4 runner-up Sennan Fielding and former British Touring Car driver Richard Williams will continue

to drive for the team this year.

The Audi is powered by the same 5.2-litre V10 engine that motivates Audi's range-topping R8 supercar.

Team principal Gary Blackham said: "I have fond memories of my time with the Audi UK British Touring Car and Le Mans programmes. It's great to be reacquainted with the brand. Audi always builds a competitive and reliable race car, and we hope and expect to be in the mix in GT4 very quickly."



Demonstration runs will replace Series Elite races

Delay for new over-40s Jag series

SERIES ELITE

The first rounds of the new-for-2019 Series Elite category have been delayed, and demonstration runs of the category's Jaguar Project 8 cars will take place at Brands Hatch this weekend instead.

The British Automobile Racing Club series, which is only open to drivers over the age of 40, was due to have its first races at the Kent circuit. But "delays outside of the series' control" led to the inaugural round being postponed.

Six cars are due to compete at Silverstone next month and organisers hope numbers will grow as Jaguar produces more Project 8s.

Instead of the Brands races, there will be four demonstration runs lasting between 15 and 20 minutes.

Series founder Graeme Glew said: "Despite some delays outside of our control, I wanted to ensure that the public got at least a taste of things to come, so I'm grateful to the BARC for providing time in a busy schedule to get out on track and introduce the cars.

"We have more cars arriving every day, and a growing roster of engaged drivers, so we look forward to returning in June to show the Brands Hatch public Series Elite in competitive action."

STEPHEN LICKORISH

Turkington's brother joins new series

TOURING CAR TROPHY

James Turkington, the younger brother of reigning British Touring Car champion Colin, will join the Touring Car Trophy grid this season in a SEAT Leon Supercopa machine.

The Northern Irishman has signed a deal to continue in the car he has raced in Northern Ireland over the last few seasons. The front-wheel-drive car will be tended by established BTCC outfit Ciceley Motorsport, which will field Turkington Jr in all rounds of the five-event series.

"I wasn't sure what I would be doing this year, but this opportunity fits perfectly," said Turkington. "What with working, it makes a full campaign very difficult in terms of a time commitment, so entering the TCT made perfect sense."

Ciceley will also support the Teamwork Huff operation, which is fielding a VW Golf TCR for Sunny Wong in the concurrent contest. Team manager Adam Morgan said: "James bought his race car in 2015 and has raced it in the Northern Ireland saloon car championship in 2015 and 2018, winning the championship in both years, so he will be straight on the pace in the Touring Car Trophy."

Turkington added: "It is tough to know how we will get on, because we don't know about the level of the balance of performance across the different classes yet, but everyone wants to be on the top step of the podium when they race."

The TCT, which also features Henry Neal, the son of three-time BTCC champion Matt, begins at Oulton Park this weekend.

MATT JAMES



Green 'hungrier than ever' despite nasty Ginetta shunt



GINETTA GT4 SUPERCUP

Ginetta GT4 SuperCup racer Fin Green says he's "more hungry than ever" to take a maiden series win despite being hospitalised following a substantial crash in the recent round at Donington Park.

Green attempted a move around the outside of Carl Shield out of the final

chicane in the third GT4 SuperCup race of the Donington weekend but spun, leaving his car stationary on the track. Nathan Heathcote clipped the G55 while trying to avoid the stranded car, which was then hit head-on by Paul Taylor.

Green, 16, who is in his first season of GT4 competition after finishing ninth in Ginetta Junior last year, was taken

to hospital in Nottingham. He suffered concussion and heavy bruising to much of his body but didn't break any bones.

Green was released from hospital late on the Monday after the crash but spent much of last week recovering in bed.

"I'm getting better – my whole body is aching," said the Total Control Racing driver. "I was really lucky where the impact was – if it was anywhere else we're not sure what would've happened. It was lucky that I had the whole engine before it got to me – at the back of the car or the side there wouldn't have been as much protection.

"Because I'm quite young I was quite hungry to win, while this has calmed me down. I'm just thankful I've not got any life-changing injuries and I'm able to get back out and carry on.

"I got into motorsport knowing this could happen but I've got to put it in the back of my head. I hope it shows how safe the cars are but it was a big warning motorsport is dangerous.

"It's made me more hungry than ever – I want to prove that I can win."

Fortunately for Green he now has over five weeks to recover before the next GT4 SuperCup races at Croft in mid-June. The series isn't appearing at the British Touring Car Championship event at Thruxton later this month.

STEPHEN LICKORISH

Champion Harris makes racing return at Mallory

750 FORMULA

Ten-time 750 Formula champion Mick Harris made a return to racing in the category for the first time in over three years at Mallory Park last weekend.

Harris was competing in the Darvi 597 that his wife Sue usually races and they plan to share the car over the course of this season.

"My wife's been saying I've got to try it and this year we decided we would share it through the season," said Mick.

"Qualifying was the first time I'd ever driven it. I last raced three and a half years ago, which was in my car [a Darvi 877] and that was a totally different configuration, so I'm still getting used to it."

Harris qualified fifth and sixth for the races, and finished seventh in the opener before retiring from the second contest.

- The Vintage Sports-Car Club and 750 Motor Club teamed up again at Mallory Park last weekend to run



another handicap race for Austin 7s. The contest was won by Dave Hubble, and Timothy Roebuck's ex-John

Miles 7 Special in second made it two 750MC competitors at the front.

STEPHEN LICKORISH

Comprehensive motorsport insurance products to keep you on track;

- ✔ Accident damage On Track
- ✔ Rally damage On Event
- ✔ Storage and Transit
- ✔ Liability
- ✔ Personal Accident
- ✔ Track day

Log on to www.ryanmi.com to obtain your online quote
Email – info@ryanmi.com Tel – +44 (0)1799 524202

Ryan Motorsport Insurance Limited is an appointed representative (557405) of Independent Broking Solutions Limited who are authorised and regulated by the Financial Conduct Authority. Its Financial Services Register number is 312026

RYAN
MOTORSPORT INSURANCE



Mittell says there's more pace to come from new car after podium

BIKESPORTS

Scott Mittell has pledged there is more to come from the new family-built Mittell MC-41R chassis after it took its first outright podium in the third Bikesports championship race of the season at Silverstone last weekend.

After a short testing programme, Mittell gave the car its debut at Donington Park on Easter Monday, when an electrical issue ruled it out of race one. Mittell was fifth in race two, improving to third in the Silverstone opener.

"The first target was to get it on the overall podium, which we have done," explained Scott, who works on the preparation of the car with his father Ian. "The next target is to give Josh [Smith] a run for his money

and, after that, obviously it is to win it."

Mittell feels the potential of the car to be a Radical challenger has been masked by electrical problems that have limited its power.

"But we're really encouraged by the balance we've got for the car and the pace it seems to have," he said. "We've had a change around of the front suspension since last time and have more things planned to keep moving forward."

The other new-for-2019 machine, the AB Performance-built Sabre Escala, has had its development limited by driver Stephen Bell incurring a rib injury in the Citroen C1 24-hour race a week earlier, forcing him to sit out the second Bikesports weekend. The car failed to finish either race at Donington.

IAN SOWMAN

HALL CLAIMS FIRST OUTRIGHT SILVERSTONE WIN SINCE FORMULA RENAULT UK TRIUMPH IN 2000

750 MOTOR CLUB

Josh Smith extended his winning run in the Bikesports championship to three at Silverstone last weekend before former single-seater ace Charles Hall triumphed in a drying second encounter.

Three-time OSS champion Smith picked up where he had left off at Donington Park with a dominant win in the opener in his Radical PR6. Changing conditions left competitors with a tyre conundrum for race two but Hall's decision to go for slicks when most went the other way proved inspired. He chased down Smith, then drove around him at Woodcote to take his first outright Silverstone win since the final round of the 2000 Formula Renault UK season.

The weather also played a part in the

preceding F1000 race, with the eastern half of the track wet and the rest dry. Although some went with wet tyres, those on slicks prevailed, most notably Piers Prior. He climbed from the back – having been found to be underweight in race one – to claim his first car win. Earlier, 2016 Sport Specials champion Matthew Booth took his maiden open-wheel win.

Reigning MR2 champion Shaun Traynor won both Toyota races, but did so the hard way having plunged from pole to eighth at the start of race one.

Stu Neale repassed Simon Walker-Hansell to win the inaugural Type R Trophy race. Walker-Hansell reversed the order in race two having survived contact with Dan Thackeray at Brooklands.

IAN SOWMAN

IN THE HEADLINES

REPORT CLARIFICATION

Autosport's report of the British GT support races at Oulton Park (in the 25 April issue) incorrectly stated that Adam Smalley collided with Geri Nicosia in the third Ginetta GT5 Challenge race. In fact it was Scott McKenna who was at fault, and was subsequently handed a penalty. Autosport apologises for the error.

HIBBERD BACK IN FJUNIOR

Michael Hibberd returned to Formula Junior at Donington Park in a front-engined Lola Mk2 he has spent the past two years rebuilding. Hibberd had raced the car previously in Germany on behalf of the owner, but has now added it to his stable and is planning a full season in FJunior with the car. In the first race at Donington, Hibberd just missed the podium but retired from the second race with brake dramas.

RX-8 TROPHY NUMBERS GROW

The Classic Sports Car Club's new RX-8 Trophy – a low-cost class for road-legal Mazdas running within New Millennium – grew from four to 11 cars second time out at Silverstone last weekend. The top two were separated by 8.6 seconds, with Steven Andrew beating Snetterton winners Trevor and Alex Taylor. "It's already well beyond our expectations and more cars are in build," said CSCC director David Smitheram.

METHLEY'S RACING RETURN

Former Historic F1 and Group C racer David Methley broke a four-year sabbatical at Silverstone. Having revisited his Marcos GT speciality, driving Peter Thompson's car to second in Classic K, he qualified eighth for his planned debut of a Chevrolet Corvette C6 (below) in New Millennium but low oil pressure prevented Methley from racing. "It's a fantastic thing, but the most difficult race car I've driven," he said.



**“THE TRACK IS MY CANVAS,
THE CAR IS MY BRUSH”** GRAHAM HILL



SOMETIMES ALL YOU NEED IS A GOOD QUOTE.

Track Day Cover - Laid-up Cover Including in Transit,
Trailer/Transporter Insurance - In-between Events Road Cover

We're in pole position when it comes to motorsport insurance cover,
call us today for a great personalised rate... **0800 085 6186** or visit adrianflux.co.uk/motorsport



Authorised and regulated
by the Financial Conduct Authority

**SPORTS
PROTOTYPE
CUP**

Exciting racing on world class circuits

Your chance to be part of the latest competitive
racing series for Radical, Caterham, Sports 2000,
bike engined and other lightweight race cars.

Visit SportsPrototypeCup.com to enter

**Up to
110mins
track time
from £399***



**Prices may vary depending on location*



TVR Tuscan Challenge tribute race could become annual event

TVR CAR CLUB

Organisers of the TVR Tuscan Challenge anniversary race at Castle Combe are hoping to turn the contest into a regular event.

Ten cars took part in the 30th anniversary race on Monday, held to celebrate the popular category (see report, page 72). In response to interest from other drivers, the TVR Car Club would now like to hold an annual race.

“Some of the guys who aren’t racing, like [two-time Tuscan Challenger winner] Steve Guglielmi, they’re all making the right noises, saying we should do it once a year, something like that,” said club competition secretary Graham Keilloh.

“The Tuscan Challenge legacy is immense. You see right up to Formula 1, Formula E, World Endurance Championship, there

are guys who cut their teeth in the Tuscan Challenge, either racers or team members.”

Drivers from the original series, including Martin Short, Dave Mason and Hugh Marshall, returned for the anniversary race, competing alongside regular TVR Challenge competitors.

“This was my car exactly as I raced it, and we’ve restored it – qualifying is its shakedown!” said Short. “It’ll probably be my one and only outing in my old car. It’s too nice to do a campaign in it now.

“Particularly between 1996 and 1999, the Tuscan Challenge was the most hard-fought, tough one-make championship. Every time you got in one of these you did wonder if you were going to die; they were hard to drive and the [on-track] fighting was so tough. Nothing’s really matched these.”

GRAHAM KEILLOH

IN THE HEADLINES

BIRLEY STAYS ON TOP

Rod Birley remained unbeaten in the two Escort-dominated Ford Saloon Series rounds, which boasted 23 cars and were the only races at Monday’s BHP Performance Show at Lydden Hill. In each race Malcolm Harding made the best start but had to yield to Birley after three laps, while there was a thrilling third-place battle between Paul Nevill, Jamie Gough and Laki Christoforou. Gough took second in race two as Harding’s smokey Escort retired after four laps.

LYONS ROARS IN RS500

Michael Lyons has shaken down a famous Ford Sierra RS500 Cosworth at Silverstone. The ex-Eggenberger car, owned by Peter Sturgeon, had spent the winter with the Lyons team while work was carried out. “That was my first run in the car and I’m mega-impressed,” said Lyons. “I’ve driven some Super Touring cars and I can’t believe how fast it is.” Paul Radisich is due to drive the car at the Goodwood Festival of Speed.

FALCON FLIES AGAIN

Nearly three years after it was badly damaged at the Goodwood Revival, the Ford Falcon of Leo Voyazides was back racing at Donington last weekend after an extensive rebuild. Now resplendent in an all-black livery, the Falcon was shared with Simon Hadfield in the Coys Trophy but retired with gearbox problems.

Esports champ races at Combe

FORMULA FORD 1600

Double Formula 1 Esports champion Brendon Leigh made his second Formula Ford appearance at the May Bank Holiday Castle Combe round on Monday, and also plans to race this weekend at Oulton Park.

Leigh impressed on his Formula Ford debut with Kevin Mills Racing at Snetterton last month in the season-opening National FF1600 round.

A late decision was made to race at Combe after Leigh impressed in testing at the track last week.

“We tested here [at Combe] for a half-day on Thursday, really just to get comfortable with the car, and check some stuff,” said Leigh, who retired from the race after qualifying sixth. “But the test went really well, and we found out we could race on the Monday and we thought, why not?”

“We’ve got Oulton Park lined up this weekend – past that I’m not really too sure at the moment. We’re just here to have a bit of fun and to learn and see what we can translate back to the sim.”

GRAHAM KEILLOH

→ P74 COMBE FORD CELEBRATION





Thomas and Lockie took victory aboard Ford Sierra Cosworth

Thomas and Lockie Sierra defeats the M3s and Capris

DONINGTON PARK
MSVR
3-5 MAY

In a weekend of tremendous racing from fine grids, Julian Thomas and Calum Lockie bagged wins in two very different cars during the excellent Donington Historic Festival.

The Historic Touring Car Challenge season opener was a fantastic evocation of period touring car racing and the early lead contest was a sight to behold as BMW M3s, Ford Sierra Cosworths and Cologne Capris went at it hammer and tongs. Thomas was right up there in his RS500 until he ran wide at Coppice and got rapidly bundled down the order.

Chris Boardman and Colin Turkington set the M3 pace as Thomas worked to recover, and a very slick stop had Lockie out ahead in the RS500. As the M3s dropped away a little, it was Adam Morgan, in for Ric Wood in a Cologne Capri, who took up the chase of the RS500. But Lockie had it under control and measured his pace for a cracking victory. "I made a schoolboy error and let everyone past," said Thomas.

Nick and Harry Whale worked hard with a significant vibration to get their M3 onto the podium, while Steve Dance could have been up there as well in his Cologne Capri but had to settle for fourth after a pitstop infringement.

On Saturday, Thomas and Lockie won the Jaguar Classic Challenge but only after an

action-packed final lap as Lockie fought to fend off Gary Pearson. Into the chicane, the E-types went head-to-head and Lockie had to catch a big slide as Pearson skittered through the gravel. Having shared the second-placed car with his brother John, Pearson also clinched third by sharing the E-type of Richard Kent.

A superb HGPCA field was another highlight with two races for the Nuvolari and Ascari Trophies, and it was Miles Griffiths in Peter Walker's Lotus 16 who scored a commanding double. Tony Wood (Tec-Mec Maserati) and Joaquin Folch (Lotus 16) shared the podium, but Wood dropped to third on Sunday when the Tec-Mec lost a cylinder.

Both Formula Junior double-headers produced double victories as Cameron Jackson (Brabham BT2) and Peter de la Roche (Lola Mk2) dominated the rear- and front-engined contests respectively.



The Pearson D-Type leads and went on to win Woodcote Trophy

It was a weekend of family wins, including Mike and Andrew Jordan, who topped the HRDC Touring Greats in their Austin A40. Considering he had left the Old Hairpin in an ambulance six days earlier, Andrew's pace and commitment down the Craner Curves was astonishing. Brothers Andrew and Max Banks guided their Alfa Romeo Giulia GTA to U2TC spoils, while John and Gary Pearson were the class of the Woodcote Trophy field in their Jaguar D-type.

Young Jack Minshaw was impressive as he shared father Jon's Jaguar E-type in the Pre-'63 GT race and shot into a commanding early lead. Niall Murray had started at the back after being late out in Niall McFadden's E-type, but his charge through the field was sublime and showed that time spent recently in drifting competitions back in Ireland had paid dividends.

After the stops, Minshaw Sr assumed control as McFadden dropped away and Simon Hadfield brought the Aston Martin DB4 of Wolfgang Friedrichs up into second.

Barely 12 hours after they'd been on the GTSCC podium, Hadfield and Leo Voyazides were back in action at the head of the HRDC Allstars race in their Shelby Cobra Coupe. Early leader John Spiers retired his TVR Griffith with brake problems, and that left the Cobra to win by a lap from the Ford Falcon of Thomas and Lockie.

Fred Wakeman and Patrick Blakeney-Edwards made it two wins in their weekend by adding the Mad Jack Trophy to their GTSCC triumph (see opposite) in their Frazer Nash Super Sports. A quick spin with brake issues cost Gareth Burnett his lead in the Alta, and two broken chains left the Parker GN of early leader Justin Maers and Charlie Martin with only third and fourth gears.

Olly Bryant could scarcely believe his misfortune in the Stirling Moss Trophy when his Lotus 15 repeated its penultimate-lap suspension breakage of 12 months earlier. Bryant deserved more than bitter disappointment after a faultless drive, but could only watch as Richard Kent swept ahead in his Lister-Jaguar Costin.

To close the weekend, Oscar Rovelli/Ambrogio Perfetti (Lotus Cortina) bagged the Coys Trophy in the face of a dogged pursuit by team-mate Peter Chambers.

PAUL LAWRENCE

DONINGTON PARK WEEKEND WINNERS



READ

HISTORIC TOURING CAR CHALLENGE

Julian Thomas/Calum Lockie (Ford Sierra Cosworth RS500)

JAGUAR CLASSIC CHALLENGE

Julian Thomas/Calum Lockie (Jaguar E-type)

PRE-'61 FRONT-ENGINE GRAND PRIX CARS

Race 1 & 2 Miles Griffiths (Lotus 16)

FORMULA JUNIOR REAR-ENGINE

Race 1 & 2 Cameron Jackson (Brabham BT2)

FORMULA JUNIOR FRONT-ENGINE

Race 1 & 2 Peter de la Roche (Lola Mk2, above)

HRDC TOURING GREATS

Mike Jordan/Andrew Jordan (Austin A40)

U2TC

Andrew Banks/Max Banks (Alfa Romeo Giulia GTA)

WOODCOTE TROPHY

John Pearson/Gary Pearson (Jaguar D-type)

PRE-'63 GT

Jack Minshaw/Jon Minshaw (Jaguar E-type)

HRDC ALLSTARS Leo Voyazides/Simon Hadfield

(Shelby Cobra Coupe, below)

MAD JACK TROPHY

Fred Wakeman/Patrick Blakeney-Edwards (Frazer Nash Super Sports)

STIRLING MOSS TROPHY Richard Kent

(Lister-Jaguar Costin)

HRDC COYS 100 TROPHY

Oscar Rovelli/Ambrogio Perfetti (Lotus Cortina)

GT AND SPORTS CAR CUP

Fred Wakeman/Patrick Blakeney-Edwards (Lister-Jaguar Coupe)

For full results visit: tsl-timing.com



READ

SPECTACULAR LANDMARK WIN FOR LISTER



Lister-Jaguar Coupe of Blakeney-Edwards and Wakeman won

STYLES

Running into Saturday evening, the two-hour GT and Sports Car Cup race was an absorbing contest and ended in a well-deserved victory for the Lister-Jaguar Coupe of Patrick Blakeney-Edwards and Fred Wakeman.

This was the first race win for the Lister in the hands of the Anglo-American pairing and could even be the first significant win in the car's 56-year story. To achieve this landmark result over the AC Cobras, Blakeney-Edwards and Wakeman were handed a decent roll of the safety-car dice, but they still drove impeccably to convert that opportunity into victory.

A capacity field of 40 cars streamed into Redgate for a flat-out two-hour charge but there was an early safety-car period when two cars found the McLeans gravel on the first lap. That negated the immediate lead of Leo Voyazides (Cobra) but he did it again at the green and pulled away from the field in commanding style.

Right at the tail of the grid, after an electrical gremlin in qualifying, was Oliver Bryant in the family Cobra. He was sensational as he scythed up the order to take the lead before handing the car over to his father Grahame. Mid-race, a second safety car was called and this was the turning point as pitstop strategies became all-important.

Bryant Sr was gutted to miss a major opportunity to hand back to his son for the final stint. "The sun was low and I didn't see the safety-car sign," he said. "I missed three laps when I could have pitted."

Meanwhile, Blakeney-Edwards got it right and relayed the Lister to Wakeman with a handy lead as the Voyazides/Simon Hadfield Cobra also lost out. Now it was a sprint to the flag and Wakeman had the Lister singing as Voyazides got into a nice rhythm in second. That was just as well as Bryant Jr was back in their Cobra and on the attack. In the final half-hour he pulled back 50s on Voyazides, but needed three more laps to catch his prey.

The winners were elated to score a breakthrough victory. "This is the culmination of three or four years of trying to perfect what they didn't quite get right in period," said Blakeney-Edwards of the only closed-cockpit Lister in period. Hadfield was a graceful second: "We've had some fantastic benefits from the safety car in the past, but not today," he said. "They drove beautifully and deserved to win."

A mighty final stint by Michael Mallock took the Aston Martin DP214 shared with Wolfgang and Paul Friedrichs from sixth to fourth in the last couple of laps, with John Clark/Alasdair McCaig (Jaguar E-type) losing the place heading into Redgate for the final time.

Chris Chiles senior and junior had a mighty run to GT3 spoils in their Austin-Healey 3000, while GT2 fell to the TVR Grantura of Joe Ward and Andy Newall. This was some consolation for Newall who, also driving with Andy Garside, was in contention for an overall podium when their Lotus Elan developed a carburettor misfire.

PAUL LAWRENCE



The Bryant family Cobra stormed from last to third

STYLES



Father-and-son pairing took wins in Swinging Sixties and Classic K races

JONES

Powell family double up in Lotus Elan

SILVERSTONE
CSCC
4-5 MAY

Father-and-son teams won four of the five races on Saturday as the Classic Sports Car Club filled Silverstone's International Circuit with a 370-strong entry.

Top guns were Caterham regulars Nick and Eddie Powell, who made hay in the Swinging Sixties and Classic K events in their pristine John Danby Racing-prepared Lotus Elan '26R'.

The Powells put the transmission failures

of Snetterton behind them with consummate victories from pole. Son Eddie started both races cautiously then, once in a rhythm, quickly picked his way to the front and relayed his father.

With little to choose between their pace, rivals found no chinks in the Powells' armour, and therefore floundered. Jamie Keevill started his hot Elan second for the Swinging Sixties Group 1 encounter, but abandoned the chase when its gearbox broke just before the mandatory stop.

Early leaders Malcolm Johnson (Lotus Europa) and Nick King (Aston Martin DB4)

wound up second and third, ahead of Ray Barrow's well-driven Chevrolet Camaro. Allen Tice (Marcos-Volvo 1800GT) and US visitor Paul Tooms (Elan) shot ahead of Powell Jr in Classic K, but Eddie blew past on lap three and hurtled clear. Powell Sr continued his good work, outrunning welcome racing returnee Dave Methley in Peter Thompson's Marcos and Tice/Chris Conoley.

Driving their trusty MGA, Historic Formula Junior and F3 racer Steve Smith and son Jack aced Swinging Sixties Group 2, which finished under yellow flags.

Formula Vee encounters prove frantic and unpredictable

MALLORY PARK
750MC
5 MAY

A large Formula Vee entry, split into three groups, provided three different winners and some of the best action of an entertaining day of 750 Motor Club racing at Mallory Park.

Each group had two races and the opening B&C contest was the pick of the bunch. James Harridge's Maverick powered around the outside of polesitter Graham Gant at Gerard's Bend on the opening lap to grab the lead. But it didn't last long. Gant's WEV was back alongside on Stebbe Straight the following tour but the pair touched wheels, sending Gant off-road and into the Armco.

"I got a very good run out of Gerard's and he just moved across," said a helpless

Gant. This left Harridge in the lead from a squabbling pack of Craig Pollard, Colin Gregory and Paul Taylor. But when they tripped over each other at Gerard's, eighth-place starter Ian Jordan's Sheane pounced to become Harridge's nearest challenger. The duo battled to the end, with Jordan emerging victorious.

"I had no second gear in qualifying and thought this weekend was going to be a real struggle," admitted Jordan. "This is my 28th season so I was watching what was happening at the front and picking them off – it was very enjoyable!"

Harridge was disqualified for causing Gant's retirement, leaving Peter Belsey second "after a bit of a scramble" as he qualified 13th after snapping a rocker shifter.

There was some consolation for Gant with victory in the final (A&B) race. He led initially before losing out to former



champions Ben Miloudi and Daniel Hands, but a superb double pass into the Esses mid-race netted Gant the win. Miloudi's Storm won a calmer A&C thrash.

Classic Stock Hatch also provided some frenetic action. Lee Scott (Ford Fiesta XR2i) and Matt Rozier (Peugeot 205 GTI) ran side-by-side all the way through Gerard's and along Stebbe Straight at the start of race two with Rozier eventually inching ahead.

But the reigning champion was all over the back of the Peugeot for the next 10 laps. The pair went side-by-side again through Devil's Elbow before a move down the inside at Gerard's finally gave Scott the place, even though he was carrying 60kg

A two-lap penalty for stopping moments after the pit window closed cost duellist Ian Staines (MG Midget) second, handing silver to Richard Merrell's rorty Alfa Romeo Giulia Sprint GT.

Aston and Tony Blake (Porsche 911 RSR) overcame their 30-second Snetterton winners' penalty to win Future Classics, beating Tim Bates's striking Brumos homage 911 SC and Mazda RX7-mounted Trevor and Alex Taylor. Chas Mallard (Camaro) shaded feisty Geoff Beale (Talbot Sunbeam Lotus) for fourth.

Andrew Presswell in the lone Vauxhall staved off the smoky VW Polo of Charlie Dark/Jay Dalgarno in the growing Turbo Tin Tops category, which drew 18 starters.

Sunday's huge 'atmo' Tin Tops arena was the domain of Martin Addison, whose Peugeot was a breathless 4.5s clear of fast-closing pole qualifier Andrew Windmill (Honda Civic Type R) at the chequered flag. The Field clan's Proton was third.

Day two had opened with the New Millennium grid, from which the Lotus Exige V6 Cup cars of James Little and Chris Griffin emerged on top. Stephen Scott-Dunwoodie (BMW E46 M3) and Peter Challis (Porsche 997 Cup) led the chase. Youngster Harry Woodhead and his supercharged Lotus Exige GT3 led impressively to the stops, whereupon the 30-second penalty for Snetterton's triumph left him a lapped seventh.

Charlie Jackson sizzled his Ford Escort Cosworth from row three to lead the



Presswell was victorious in Turbo Tin Tops

JONES



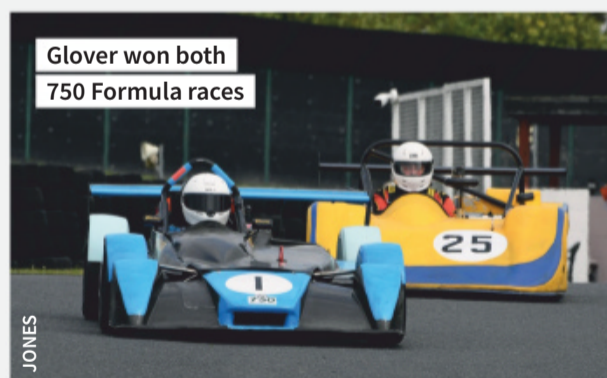
Another father-and-son pairing, Steve and Jack Smith (MGA)

JONES

Modern Classics race by Abbey, but finished a gallant third after the turbocar started to ail. A faultless performance from David Marcussen (BMW M3 E36) earned a comfortable victory, from Dan Williamson (Porsche 911).

Snetterton Magnificent Sevens winner Stephen Nuttall's five-place grid drop barely hindered the top qualifier, for he led by the first corner and dropped Tim Davis and Christian Pittard over 40 minutes. Nuttall didn't participate in the sprint race, leaving Davis to shrug off Pittard.

MARCUS PYE



Glover won both 750 Formula races

JONES

of success ballast after winning race one.

Rozier later fell behind the 205 of Stewart Place – who had lost it at Shaw's on the first lap of the opener when leading – while Edward Cooper's Vauxhall Nova was also in close attendance.

Another double winner was the Racekits Falcon of reigning 750 Formula champion Mark Glover. Ed Pither's PRS 1b led the opener before starter-motor failure caused damage to the clutch system, leaving him a spectator. "It's a shame because it goes really well here," Pither lamented. Glover was therefore a comfortable winner and doubled up in race two, despite a tardy start.

There were contrasting fortunes for Ryan



Scott (left) and Rozier battled hard in Classic Stock Hatch

JONES

Polley as the Clio 182 Championship made its first visit to Mallory. He was squeezed into a spin on the first lap of the opener, before recovering superbly to fifth. Polley then won race two after passing 2015 champion James Bark on the inside at Gerard's. Don de Graaff was an untroubled race-one winner.

Christian Pedersen's Austin 7 won the twice red-flagged Historic 750 Formula encounter, despite starting at the back. The second stoppage was a lengthy delay caused by a spectator being taken seriously ill and the 750MC rescue unit was called in to attend.

STEPHEN LICKORISH

WEEKEND WINNERS



JONES

SILVERSTONE SWINGING SIXTIES

Group 1 Steve & Jack Smith (MGA)

Group 2 Eddie & Nick Powell (Lotus Elan 26R)

CLASSIC K

Eddie & Nick Powell (Lotus Elan 26R)

FUTURE CLASSICS

Aston & Tony Blake (Porsche 911 RSR, above)

TURBO TIN TOPS

Andrew Presswell (Vauxhall Astra VXR)

TIN TOPS

Martin Addison (Peugeot 106 GTi)

NEW MILLENNIUM

James Little (Lotus Exige V6 Cup R)

MODERN CLASSICS

David Marcussen (BMW M3 Evo E36)

MAGNIFICENT SEVENS

Race 1 Stephen Nuttall (Caterham Supersport)

Race 2 Tim Davis (Caterham C400)

JAGUAR SALOONS & GTs

Races 1 & 2 Colin Philpott (XJS)

For full results visit: tsl-timing.com

MALLORY PARK

FORMULA VEE

B & C Ian Jordan (Sheane Jordan)

A & C Ben Miloudi (Storm GKBM)

A & B Graham Gant (WEV FV01)

CLASSIC STOCK HATCH

Race 1 & 2 Lee Scott (Ford Fiesta XR2i)

750 FORMULA

Race 1 & 2 Mark Glover (Racekits Falcon)

CLIO 182s

Race 1 Don de Graaff (below)

Race 2 Ryan Polley

HISTORIC 750 FORMULA

Christian Pedersen (Austin 7)

AUSTIN 7 HANDICAP RACE

Dave Hubble

For full results visit: theresultslive.co.uk



JONES

Lancashire survives TVR Tuscan battle

CASTLE COMBE
CCRC
6 MAY

Bill Lancashire won the TVR Tuscan anniversary race at Castle Combe in a battle of attrition. Only four of the 10 starters were running at the end and, of those, Martin Short was nine laps adrift after two lengthy pitstops as his ECU didn't recognise his newly fitted throttle pot. Runner-up Matt Holben was 20 seconds shy, while Graham Walden was a lapped third, suffering from a seized throttle pedal.

Dave Mason had built a commanding lead, but dropped out with a suspected gearbox problem. Other likely frontrunners also hit issues: Tim Davis stopped with his own gearbox woes, having changed the unit just before the race. And Perry Waddams, due to start from the front row alongside Mason, started from the back, then retired with cutting power.

"I wasn't expecting that!" said Lancashire of his win. "I've got a Rover [powered] car rather than the AJP-engined Tuscan, and I normally run in



Lancashire leads the Tuscan field, which was down to four cars by the end of the race

a different championship on road tyres; all the other cars are on slicks. I race it mostly in CSCC events, Future Classics. I will be doing several races there this season.

"I had a sneaking suspicion that I might be leading; obviously the faster cars did go ahead, but then I saw several of them break down. Perry overtook me and then he stopped. So I thought, 'Maybe I'm doing OK here', but I didn't know I was first!"

Darren Dowling won the opening TVR Challenge race in his Sagaris. Dowling broke clear of a three-car battle for second, which was headed by Michael Saunders's Cerbera ahead of Davis's Tuscan Challenge. Mason finished fourth, falling back after his Tuscan struggled to get third gear.

Only 10 cars participated in race two, with Dowling among those sitting it out due to a vibration problem. Mason won that contest after a battle with runner-up Saunders.

Josh Fisher won the Combe Formula Ford race in his Van Diemen, making it two wins from three in 2019. Fisher held off reigning champion Luke Cooper in his Swift. Fisher's brother Felix finished third after falling back on lap two when his Ray wouldn't go into gear.

Adam Prebble eased to the Saloon Car Championship race win in his Vauxhall Astra, making it two wins from two this year. His brother Gary looked set to finish runner-up in his SEAT Leon, but he pulled into the pits at half-distance with no turbo

Geraghty denies Dalglish another hat-trick

KNOCKHILL
SMRC
5 MAY

Mark Geraghty denied Robbie Dalglish a second hat-trick of Scottish Mini Cooper Cup wins after a closely fought third race around the reverse configuration of Knockhill.

Reigning champion Dalglish headed into the weekend on the back of three race wins at the opening meeting, and duly doubled up with victory in the initial



Boyd's Porsche and Baptie's MG each won

races to make it five from five, despite losing the start in the second outing.

"It's getting harder and harder," was Dalglish's post-race assessment. And he wasn't wrong, as he could only manage fourth in the final race.

Geraghty's win was superb. Starting fourth, he was immediately up to second after the hairpin, and was soon in first place as Michael Weddell and Ian Bonthorne dived for position. Weddell took up a valiant pursuit and was glued to the back bumper of Geraghty's Cooper for several laps. He harassed Geraghty right until the chequered flag, finishing ahead of a pursuing train of Vic Covey Jr, Dalglish and Ian Munro, with the quintet split by a mere 0.82 seconds.

An increased grid of 14 cars yielded some great racing in the Scottish C1 Cup, with Jack Davidson grabbing both race victories to rocket up the championship standings. Davidson, who also won both Scottish Fiesta contests, was in impeccable form as he became the third different winner

in four races. The racing was enthralling throughout, with a four-way photo-finish in race two typifying the action in the new-for-2019 series. Colin Main edged Steven Morrison to second by only 0.31s, while Ryan Smith's advantage over Reis Robertson in fourth was just 0.008s.

Glenn Alcock's weekend unravelled when he rolled his C1 at Clark's at the end of the opening race. After likening the corner in reverse to "falling off the face of the Earth", Alcock took too much of the inside sausage kerb and as a result contested race two with no windows.

John Paterson emerged victorious in the Legends final in a weekend that he and team-mate Duncan Vincent dominated. Vincent took the opening heat, surviving a hit from Stewart Black that was so strong that Vincent had to "readjust my helmet". Black had bumped Vincent while drafting, spearing himself into the tyre wall and out of the rest of the weekend's action.

Paterson won heat two after a scintillating scrap with Steven McGill,



Krayem attacks Squibb, but spun on final lap

JONES

boost. Alex Kite's Audi TT finished second, ahead of Class B victor Simon Thornton-Norris in a Mitsubishi Colt. Reigning champion Adrian Slade's Peugeot 106 topped Class C after Matthew Parr stopped with a driveshaft problem on his 106 late on.

Barry Squibb's Mitsubishi Lancer E9 won the GT Championship race. Squibb was being chased by David Krayem's Chrysler Viper when on the final lap Krayem tried to take the lead after Squibb lost momentum in traffic, but it ended with the Viper beached.

Sam Stride dominated the Hot Hatch Challenge race in his Honda Civic, beating polesitter Kieren Simmons's Ford Fiesta home by 16s. Third-placed Tony Cooper



Stride walked away with Hot Hatch race

JONES

got the Class B win in a 106.

Craig Dolby and Nigel Mustill cruised to the Dave Allan Trophy in their GT3 Nissan, winning the 45-minute pitstop race by two laps from Krayem's Viper, shared with Ben Scrivens.

GRAHAM KEILLOH



Dagleish had to settle for two Mini victories

MOIR

decided in Paterson's favour after McGill missed a gear on the run to Clark's. Paterson then punched in a mouthwatering opening lap in the final as he rose from 12th to third and went on to win. Vincent made similar progress to take second and end the day with three podium finishes.

Alastair Baptie and Raymond Boyd took a win apiece in the Scottish Classics, with a brilliant manoeuvre through traffic by Baptie fooling Boyd in race one.

Boyd (Porsche 911) defended strongly in the second race, before Baptie missed his braking and slid his MGB sideways into the gravel on entry to the hairpin, eventually recovering to sixth.

Jordan Gronkowski protected his 100% start to 2019 with both Formula Ford victories, while Logan Hannah shone to take two podiums and a brief race lead in the second encounter.

LUKE BARRY

WEEKEND WINNERS



JONES

CASTLE COMBE TVR TUSCAN ANNIVERSARY

Bill Lancashire

TVR DUNLOP CHALLENGE

Race 1 Darren Dowling (Sagaris, above)
Race 2 David Mason (Tuscan Challenge)

CCRC FF1600 CHAMPIONSHIP

Josh Fisher (Van Diemen JL14)

CCRC SALOON CHAMPIONSHIP

Adam Prebble (Vauxhall Astra)

CCRC GT CHAMPIONSHIP

Barry Squibb (Mitsubishi Lancer E9)

CCRC HOT HATCH CHALLENGE

Sam Stride (Honda Civic)

DAVE ALLAN TROPHY

Craig Dolby/Nigel Mustill (Nissan GT-R GT3)

TRACK ATTACK RACING CLUB

Race 1 Clive Haynsford (Mazda RX-8)
Race 2 Rich Hockley (Honda Civic)

For full results visit: tsl-timing.com

KNOCKHILL

SCOTTISH MINI COOPER CUP

Race 1 & 2 Robbie Dagleish
Race 3 Mark Geraghty

SCOTTISH CITROEN C1 CUP

Race 1 & 2 Jack Davidson

SCOTTISH LEGENDS

Heat 1 Duncan Vincent
Heat 2 & Final John Paterson

SCOTTISH CLASSIC SPORTS & SALOONS

Race 1 Alastair Baptie (MGB GTV8)
Race 2 Raymond Boyd (Porsche 911)

SCOTTISH FORMULA FORD 1600

Race 1 & 2 Jordan Gronkowski
(Van Diemen JL12K, below)

SCOTTISH SPORTS & SALOONS

Race 1 & 2 Paul Brydon (BMW M3)

SCOTTISH MINI COOPER S CUP & FIESTAS

Race 1 & 2 Olly Mortimer (Mini)



MOIR

For full results visit: speedhive.mylaps.com

CASTLE COMBE FORMULA FORD

A selection of key figures from Combe FFord's history gathered last month



Combe anniversary event attracted a packed and eclectic FFord grid



COMBE CELEBRATES FORMULA FORD MILESTONE

But what next for the UK's longest running single-circuit championship?

GRAHAM KEILLOH

PHOTOGRAPHY OLIVER READ

The great and the good from Castle Combe's illustrious Formula Ford history gathered at the Wiltshire circuit last month to celebrate the 50th anniversary of the circuit's own championship.

Having started in 1969, only two years after Formula Ford itself was created, it has stood the test of time as a rare example of a continuing single-venue category. Combe's season-opening Howards' Day meeting provided the opportunity to mark the half century. Nineteen of the 30 living Combe Formula Ford champions attended including the very first, Bryan Sharp.

"I don't know how they tracked me down," says 1979 champion Geoff Davies. "I now own a hotel up between Leeds and York, and I suddenly got a phone call from reception saying it's Castle Combe circuit. I'm astounded [they found me] – they obviously did a very good bit of research."

The competitive nature of the Kent-engined category, coupled with Combe's flat-out characteristics, has meant the championship has thrived in years gone by. And some of the country's top FF1600 drivers have raced at the venue. "It's easily as competitive as a National championship – it's just the drivers here are drivers with less budget," says three-time Combe champion and now team boss Kevin Mills. Roger Orgee, champion in 1974, adds: "It's sort of halfway between club and National."

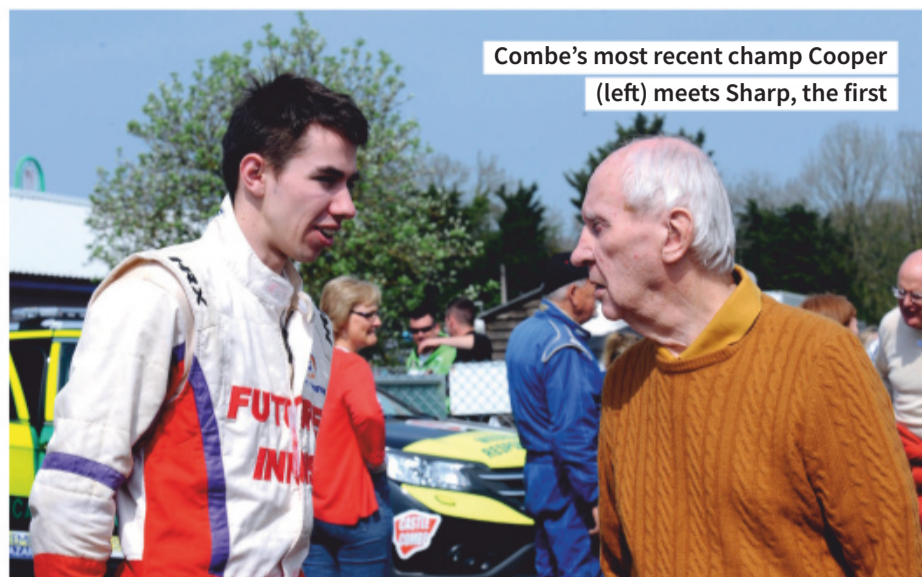
Combe has become a hub for drivers in the south-west of England and offers a tasty challenge, with fast, flowing sections that were only broken up by chicanes at the end of the 1990s. Yet the addition of them has provided a different sort of difficulty. "I guess if you live south of Bristol this is the first track you >>



Felix Fisher won the Guards Trophy contest

CASTLE COMBE FF1600 CHAMPIONS

2018	Luke Cooper (Swift SC16)
2017	Josh Fisher (Van Diemen JL14)
2016	Roger Orgee Jr (Van Diemen RF00)
2015	Roger Orgee Jr (Van Diemen RF00)
2014	Adam Higgins (Van Diemen JL12)
2013	Adam Higgins (Van Diemen JL12)
2012	Ben Norton (Spectrum 010b)
2011	Rob Hall (Swift SC11)
2010	Marcus Allen (Swift SC92F)
2009	Ben Norton (Spectrum 011)
2008	Josh Fisher (Mygale SJ03)
2007	Ed Moore (Van Diemen RF00)
2006	Matt Rivett (Ray GR97)
2005	Tim Reynolds (Swift SC92F)
2004	Ed Moore (Van Diemen RF01)
2003	Chris Axford (Swift SC92F)
2002	Simon Ashley (Swift SC92F)
2001	John Hutchinson (Van Diemen RF90)
2000	John Hutchinson (Van Diemen RF90)
1999	Richard Carter (Van Diemen RF92)
1998	Richard Carter (Van Diemen RF92)
1997	Kevin Mills (Swift SC92F)
1996	Kevin Mills (Swift SC92F)
1995	Kevin Mills (Swift SC92F)
1994	Gavin Wills (Swift SC92F)
1993	Gavin Wills (Swift SC92F)
1992	Bob Higgins (Reynard 91FF)
1991	Nigel Jenkins (Reynard 90FF)
1990	Nigel Jenkins (Reynard 89FF)
1989	Gavin Wills (Van Diemen RF89)
1988	Gavin Wills (Van Diemen RF86)
1987	David Llewellyn (Van Diemen RF86)
1986	Robert Davies (Van Diemen RF84)
1985	Howard Lester (Reynard 83FF)
1984	Martin Cooper (Royale RP33M and Reynard 83/84FF)
1983	Bob Higgins (Royale RP29A)
1982	Bob Higgins (Martlet DM4)
1981	Bob Higgins (Martlet DM3/DM4)
1980	Steve Lincoln (Royale RP26)
1979	Geoff Davies (Crossle 32F)
1978	Mike Wallaker (Jomic Mk2)
1977	David Wheeler (Royale RP21A)
1976	David Toye (Royale RP21)
1975	Terry Richards (Merlyn Mk11A)
1974	Roger Orgee (Dulon MP15)
1973	Clive Power (Dulon MP15)
1972	Buzz Buzaglo (Elden Mk10)
1971	Mike Campbell-Cole (Merlyn Mk11A)
1970	Peter Lamplough (Palliser WDF2)
1969	Bryan Sharp (Merlyn Mk11A)



Combe's most recent champ Cooper (left) meets Sharp, the first

hit,” suggests two-time champion Josh Fisher. “So for people travelling up from Devon, Cornwall and Somerset it’s the first track you get to. It’s a fast track, it’s got some technical bits with the chicanes as well, so if you can do well here I think you could do well anywhere.”

Mills agrees: “You get really good slipstreaming races. You can drive the chicanes well and by the time you get back to Quarry they’ve pulled back on you. And then drivers have to defend into the first chicane and compromise their lines so everyone stays together.”

Given the championship’s competitive nature, illustrious history and accessibility, it’s no wonder that spectators often look towards the Formula Ford races as the pinnacle of a weekend’s action. “At Castle Combe it’s always been the case that you can get around the paddock [as a spectator],” says two-time champion Adam Higgins. “You can talk to the drivers and teams, and look around. The kids can sit in the cars. You just gain a bit of a following and people have more of a vested interest in what happens

Q & A

BRYAN SHARP
1969 CASTLE COMBE
FORMULA FORD CHAMPION



What does Castle Combe Formula Ford mean to you?

Very competitive, good racing, and a nice circuit with no chicanes [the original layout remained unmodified until 1999]. I think it was just a good learning curve. We subsequently did a couple of the European championships at Spa, Hockenheim, Zolder and Zandvoort. I think we had two of the first Merlyns that were made – we used to go up to Colchester and watch them being built.

What was the Merlyn like to drive?

Great – we enjoyed it a lot. Most of my career was motorcycle racing, motocross. When I gave up because I wasn’t fit enough we went into cars. We were introduced to Merlyns by Formula 3 champion Harry Stiller. He said ‘buy a Merlyn’, and that’s how it all started. So we went to Snetterton to try them.

What did Castle Combe Formula Ford teach you as a driver?

I think it taught us how to be competitive. And how to give a nudge! At that time I think there were a lot of inexperienced drivers about, not always intelligent. But mainly I always kept on the circuit...

OLDEST-TIMER Castle Combe's anniversary meeting featured a car almost as old as the championship itself and widely considered to be the event's most elegant machine, a 1970 Nike Mk6 driven by Peter Hannam.

Hannam recently rebuilt the original chassis almost entirely, and went as far as getting the rear-suspension uprights recast (the company that the late Nike builder, Ken Nichols, subcontracted to make them has since gone bust). Hannam has subsequently raced it in Historic Formula Ford and last year's Walter Hayes Trophy, and declares his primary aim is to enjoy himself in it. Sadly, an engine failure at Combe meant he couldn't complete a race lap.

Another Nike to compete was the Mk4, driven by Alan Slater, which was originally produced in 1969. It fared better than the newer model, finishing 23rd and 20th in the races.



when they've actually spoken to the competitors. "You've always been able to see quite a lot of the circuit [as a Combe spectator]. You go to other certain tracks and you can see half the straight and a little bit of a corner, and that's it."

Two races were held at the meeting last month to begin this year's FF1600 championship, and to mark the anniversary the driver with the quickest aggregate race time from both races was awarded the Guards Trophy – named after the championship's first sponsor. Both races proved to be a family affair, as Josh Fisher and brother Felix took a win apiece in typical slipstreamers, with Felix pipping Josh to the Guards Trophy by just 0.4 seconds.

But what's next for Combe's Formula Ford Championship? The anniversary grid was 24-strong, yet 2018's turnouts dipped into single figures as the season progressed. "They've looked at some of the issues they used to have and it's certainly become very welcoming again," says Alan Cooper, a former Combe FF1600 competitor himself who now runs Swift cars,

and whose son Luke won the Combe FFord title in 2018. "The entries aren't silly front money and they're trying really hard and making the drivers feel welcome, which I think a lot of circuits have forgotten to do."

Mills has an additional theory. "When the money is a little bit tight, [such as with] the whole Brexit thing, the club championships that are cheaper to run in always get bigger," he explains. "That's why in the National series this year the grid is a little bit down. So they come back and race at a local championship."

Yet there's a consensus that the Combe championship shouldn't change much. "It's still as popular as ever because it's the fastest you can go for the cheapest amount of money," adds Higgins. "The formula's good, the cars are still good, there's still people making them, there are still fresh cars being made, so I don't think the formula's going anywhere for a minute."

"Hopefully in another 50 years we'll still be going – maybe flying around, in little flying cars." ❄

LIKE FATHER, LIKE SON

There was an abundant supply of father-and-son pairings at Castle Combe's Formula Ford celebrations, as no fewer than three championship-winning families were represented.

The attendees included Roger Orgee Sr and Jr, the former the 1974 champion while Junior bagged titles in 2015 and 2016. Reigning champion Luke Cooper, whose uncle Martin took the 1984 crown, was there, as was Luke's father and Swift Cooper team boss Alan, who also raced at Combe in period.

They were joined by triple champion Bob Higgins, who claimed the 1981-83 and 1992 crowns, alongside his noteworthy mechanic – son Adam – who claimed the championships in 2013 and 2014.

Bob Higgins wasn't there merely for the

celebrations, though, because he was taking part in the opening round ahead of a full campaign in his new Firman 17, undeterred as he approaches his 70th birthday.

"Racing against the youngsters, I find when I get out they go, 'Cor he's old,'" Bob laughs. "I last raced a Formula Ford three

years ago at the Walter Hayes Trophy.

"I've not done a whole championship for many years. I bought a new car and thought, 'OK I'm 70 years old next month, I'm going to have a go.'

"These new cars are a bit more technical, you've got to slow down to go faster. I'm more old-style, 1989-90

stuff, which is you throw it in and sort it out when you're in there, but not with these new ones. You have to be precise. My son has been teaching me how to drive one."

"I'm quite happy to run him and race when he's not," says Adam, who has also recently competed in the Ginetta GT4 Supercup.

"It means a lot to me, Castle Combe, and I live in Chippenham so it's only four miles down the road. Dad taught me everything that he knew, and I've learnt a lot of other things along the way as well."

The effort is a family affair in another way, since North Yorkshire resident Bob combines Combe visits with spending time with his south-west-based grandchildren.

Yet Bob isn't participating frivolously and old habits die hard. "I don't know how I'm going to get on – if I'm in the top 10 it's a bonus, but I want to win," he says.

"I have this inbuilt thing that if there's a gap I'm in it; if it's an accident so be it."

Higgins Sr managed to finish 16th and 10th across the weekend's races in the 24-car field.



Higgins (left) and Orgee are part of Combe's FFord dynasties



Blancpain GT Series heads to Silverstone this weekend

LIVE, FREE AND FACELIFTED

MOTORSPORT.TV BLANCPAIN GT SERIES

Last weekend's Blancpain GT World Challenge Europe season opener at Brands Hatch marked not just the start of a new chapter for the SRO's sprint championship, but an evolution in the coverage of the series.

This year, there's been a noticeable development in the presentation on the livestream, with a number of changes highlighting the organiser's shift towards improving the user experience.

New, cleaner graphics are the biggest difference. Gone are the rainbow-effect columns and in their place comes a larger, single-coloured list with a font that's easy to read on screens ranging from the biggest TVs down to mobile phones. The more modern style means timing gaps and longer names – Ezequiel Perez Companc, for example – don't cause eye-strain as you try to read the text.

What didn't need an overhaul, though, is the tried-and-tested commentary team of David Addison and ex-Formula 1 driver John Watson. The pair have become familiar voices to watchers of the Blancpain GT Series over the years, and their knowledge of the championship shines through.

As well as an encyclopaedic understanding of the racing and its teams and drivers, the fact that the pair are well-known and have a wide range of contacts in the paddock is clear.

Nowhere was that more evident than during the 10-minute safety-car period at the start of race one at Brands. Addison's research and confidence in reading incidents – and how they occurred – allows him to both fill the time and provide genuinely meaningful insight.

Combine that with Watson chipping in with experiences from his own top-flight motorsport career, along with his excellent reading of tactics and pit strategy, and the pair have to be up there with some of the best duos in the business.

Their knowledge in the commentary box is complemented by the expertise of pitlane reporter Dakota Jane, who is always ready to immerse herself and viewers in the thick of the action. Every success, every failure, every controversial incident, Jane knows where to be and who to talk to. Between the three, there's a good sense that we're getting to the heart of the events both on track and off it.

Add that to a raft of onboard and trackside cameras, which make sure that little is missed, and you've got the recipe for genuinely class-leading race coverage.

Given the quantity of prestigious marques involved – including Ferrari, Bentley and Aston Martin – plus a string of contingent drivers, it seems the Blancpain GT Series has long flown under the radar. But the marked step up in coverage quality can hopefully go a long way to reversing that.

And there's little time to wait before the field is in action again in Britain. The Blancpain Endurance Series takes to Silverstone this weekend for the three-hour enduro, where it's supported by the Lamborghini Super Trofeo – one of the fastest single-make GT categories around.

Last year's Silverstone winners Matthieu Vaxiviere, Jake Dennis and Nicki Thiim return with Aston Martin squad R-Motorsport, but for this season the latter two have split from Vaxiviere in the line-up. The brace of Vantage GT3s are just two of the near-50-car entry list.

To watch the action live and free, head to Motorsport.tv.

JOE HUDSON

 **motorsport.tv**

Livestream this race at Motorsport.tv

Free practice Sat 1035

Pre-qualifying Sat 1535

Qualifying Sun 0940

Race Sun 1445



youtube.com/AUTOSPORTdotcom



F1 SPANISH GP TECH FOCUS



The Spanish Grand Prix is traditionally the setting for Formula 1 teams to bring major updates in a bid to make a jump forward in performance. Autosport discusses the teams that are under pressure to deliver. Go to bit.ly/SpainUpgrades



autosport.com/podcast



HAS FORMULA E BECOME TOO RANDOM?



With eight different winners in eight races, no driver has yet to take control of the ABB FIA Formula E Championship battle. With five races remaining, starting in Monaco, we ask if this dramatic season is just too amorphous.

WHAT'S ON

INTERNATIONAL MOTORSPORT

Spanish Grand Prix

Formula 1 World Championship

Round 5/21

Barcelona, Spain

12 May

TV Live Sky Sports F1, Sun 1230

TV Highlights Channel 4, Sun 1900;

Sky Sports F1, Sun 2030

Formula 2

Round 3/12

Barcelona, Spain

11-12 May

TV Live Sky Sports F1, Sat 1535,

Sun 1025

Formula 3

Round 1/8

Barcelona, Spain

11-12 May

TV Live Sky Sports F1, Sat 0910,

Sun 0920

Porsche Supercup

Round 1/10

Barcelona, Spain

12 May

TV Live Sky Sports F1, Sun 1140

IndyCar Series

Round 5/17

Indianapolis, Indiana, USA

11 May

TV Live Sky Sports F1, Sat 2000

Rally Chile

World Rally Championship

Round 6/14

Talcahuano, Chile

10-12 May

TV Live BT Sport ESPN, Sat 1400;

Red Bull TV, Sat 1350; BT Sport 2,
Sun 1300; BT Sport 1, Sun 1700

TV Highlights BT Sport 3, Sat 0530,

Sun 2115; Red Bull TV, Sat 0300,
Sun 0300, Mon 0300; BT Sport 1,
Mon 1530

Live coverage on wrc.com

All live service via WRC+

Formula E

Round 9/12

Monte Carlo, Monaco

11 May

TV Live Eurosport 2, Sat 1415;

Quest, Sat 1415; BT Sport ESPN,
Sat 1500

Livestream BBC Red Button,

iPlayer, online

Jaguar I-PACE eTrophy

Round 7/10

Monte Carlo, Monaco

11 May

World Touring Car Cup

Round 3/10

Slovakia Ring, Slovakia

11-12 May

TV Live Eurosport 1, Sun 0930;

Eurosport 2, Sun 1515

World Rallycross

Round 3/10

Spa, Belgium

11-12 May

TV Live Freesports, Sun 1300

NASCAR Cup

Round 12/36

Kansas Speedway, USA

11 May

TV Live Premier Sports 2, Sun 0000

NASCAR Truck Series

Round 7/23

Kansas Speedway, USA

10 May

Blancpain GT World

Challenge Asia

Round 2/6

Buriram, Thailand

11-12 May

Livestream Motorsport.tv,

Sat 0800, 1100, Sun 1200

Asian Formula 3

Round 2/5

Buriram, Thailand

11-12 May

European Le Mans Series

Round 2/6

Monza, Italy

12 May

Livestream Motorsport.tv,

Sat 1215, Sun 1045

UK MOTORSPORT

Oulton Park BRSCC

11 May

TCR UK/Touring Car Trophy, Civic
Cup, FF1600, MX-5 Super Cup

Silverstone MSVR

11-12 May

Blancpain GT Endurance Cup,

Formula Renault Eurocup,

Lamborghini Super Trofeo

Livestream Motorsport.tv,

Sat 1035, 1535, Sun 0940, 1445

Snetterton MSVR

11-12 May

F3 Cup, GT Cup, Radical Challenge,

Mini Challenge, Focus Cup, Trackday

Championship, MSVR SuperCup

Brands Hatch BARC

11-12 May

Britcar Dunlop Endurance, Sports

Prototypes, Clio Cup, MGOC,

Kumho BMWs, Tin Tops

Pembrey BARC

11-12 May

MaX5, Classic VWs, Welsh Sports and

Saloons, Pickups, BARC Saloons,

Super Silhouettes

Cadwell Park BRSCC

11-12 May

Caterham Academy, Porsches,

Mazda MX-5s, Fiestas, Fiesta

Juniors, Alfa Romeos, Karts

FINISHING STRAIGHT



FROM THE ARCHIVE

Henri Toivonen threads his Lancia 037 between the houses and the tifosi on the 1985 Sanremo Rally. Like his team-mates, Toivonen had hoped

Lancia's Delta S4 would be ready for Italy. It wasn't. Worse still, Toivonen was convinced the chassis beneath him was bent, having been rebuilt after two accidents. Despite those

frustrations, he still took the podium's bottom step... albeit eight minutes behind Audi's Walter Rohrl, who gave the monstrous Quattro S1 E2 its only WRC victory.



To enjoy spectacular action from this rally, go to bit.ly/Sanremo85



EDITORIAL

Editor **Kevin Turner**
 Deputy Editor **Marcus Simmons**
 Grand Prix Editor **Edd Straw**
 F1 Correspondent **Scott Mitchell**
 Technical Editor **Jake Boxall-Legge**
 Chief Sub-Editor **Peter Hodges**
 Executive Editor **Stuart Codling**
 Performance and Engineering
 Editor **James Newbold**
 Rallies Editor **David Evans**
 BTCC Correspondent **Matt James**
 Editorial Assistant **Matt Kew**
 Art Editor **Lynsey Elliott**
 Senior Designer **Michael Cavalli**
 Origination/Repro **David Sternberg**
 Office Manager **Joanne Grove**



Photography

Steven Tee
 Glenn Dunbar
 Sam Bloxham
 Zack Mauger
 Jakob Ebrey
 Mark Sutton

Special Contributors

Ben Anderson
 Gary Anderson
 Alan Eldridge
 Tom Errington
 Stephen Lickorish
 Stefan Mackley
 David Malsher
 Jonathan Noble
 Marcus Pye
 Nigel Roebuck
 Jim Utter
 Gary Watkins

AUTOSPORT.COM

Video Content Editor **Glenn Freeman**
 Editor **Matt Beer**
 Autosport Plus Editor **Alex Kalinauckas**
 News Editor **Jack Cozens**
 International Editor **Jack Benyon**
 Social Media Editor **Joshua Folks**
 Technical Team Leader **Geoff Creighton**
 Lead UX Designer **Prad Patel**

CORRESPONDENTS

Argentina Tony Watson **Australia** Andrew van Leeuwen **Austria** Gerhard Kuntschik **Belgium** Gordon McKay **Brazil** Lito Cavalcanti
Finland Esa Illoinen **Germany** Rene de Boer **Greece** Dimitris Papadopoulos **Italy** Roberto Chinchero **Japan** Jiro Takahashi
New Zealand Bernard Carpenter **Russia** Gregory Golyshev
Spain Raimon Duran **Sweden** Tege Tornvall **USA** Jeremy Shaw
UK & Ireland Stephen Brunsdon, Dom D'Angelillo, Kerry Dunlop, Graham Keilloh, Mark Libbeter, Dan Mason, Lucy Morson, Jason Noble, Mark Paulson, Brian Phillips, Hal Ridge, Peter Scherer, Ian Sowman, Chris Stevens, Ian Titchmarsh, Richard Young

ADVERTISING

Tel +44 (0) 20 3405 8106 **Email** autosport.ads@motorsport.com
 Sales Director **James Robinson**
 Display Advertising **Jamie Brooker, Christian Plucknett, Karen Reilly**
 Creative Solutions **Don Rupal**
 Classified Advertising **Ben Kavanagh, Balvin McKenzie, Edward Sanderson**
 Online and Agency Sales **Chris Hermitage**

ADVERTISING PRODUCTION

Production Controller **Ben Webster**
Tel +44 (0) 20 3405 8131 **Email** ben.webster@motorsport.com

SUBSCRIPTIONS

UK +44 (0) 344 848 8817 **Overseas** +44 (0) 1604 251451
Email help@asm.secureorder.co.uk **Back issues** 0344 8488817
Main office +44 (0) 20 3405 8100

Autosport, ISSN number 0269946X, is published weekly by Autosport Media UK Ltd, 1 Eton Street, Richmond, TW9 1AG, United Kingdom. Airfreight and mailing in the USA by agent named Air Business Ltd, c/o Worldnet Shipping Inc., 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA. Periodicals postage paid at Jamaica NY 11431. Subscription records are maintained at Autosport Media UK Ltd, 1 Eton Street, Richmond, TW9 1AG. Air Business Ltd is acting as our mailing agent.



CIRCULATION TRADE ENQUIRIES

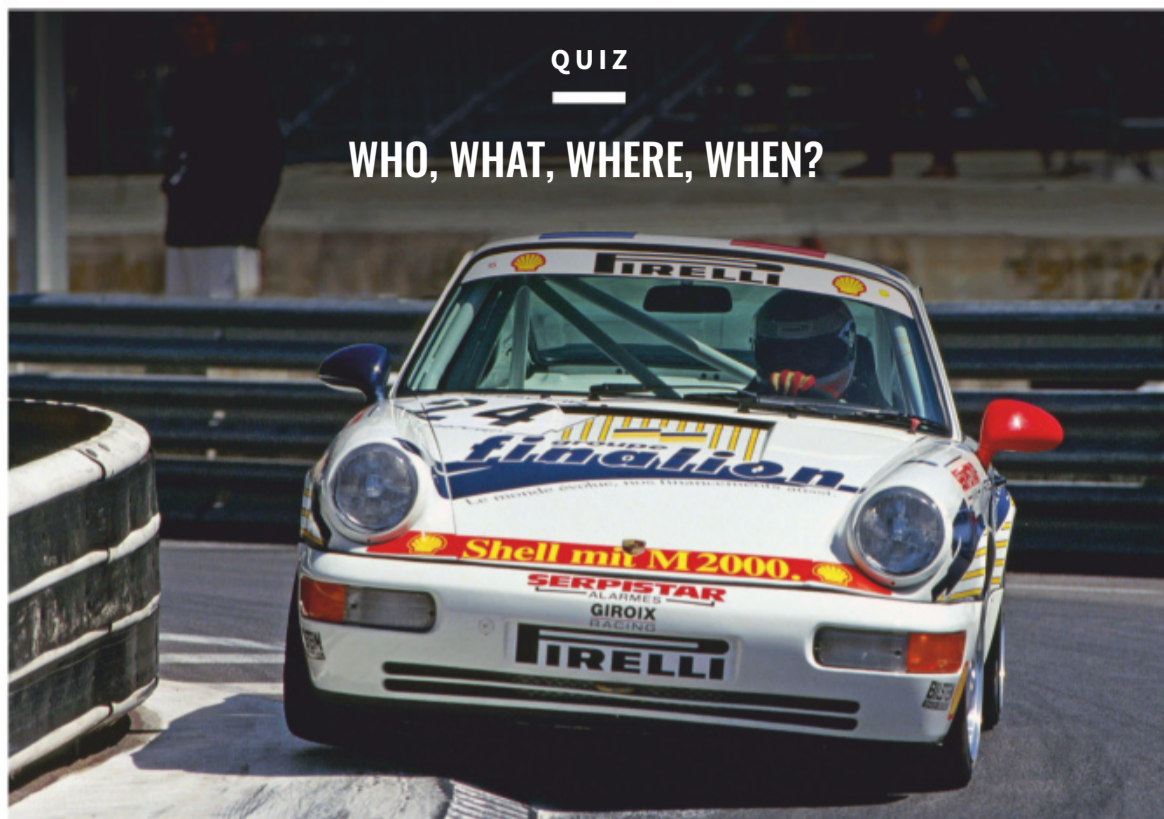
Seymour Distribution Ltd, 2 East Poultry Avenue, London, EC1A 9PT.
Tel: +44 (0) 20 7429 4000.
 Printed by William Gibbons & Sons Ltd, 28 Planetary Road, Willenhall, Wolverhampton WV13 3XT.
 ISSN 0269-946X. Autosport is published weekly by Autosport Media UK Ltd, 1 Eton Street, Richmond, TW9 1AG.

©2019, AUTOSPORT MEDIA UK LTD

We abide by the Editors' Code of Practice and are committed to upholding the highest standards of journalism. If you think we haven't met those standards and want to make a complaint, contact 0203 405 8100.



Trading as Autosport Media UK. Publishing, trade and further subscription details on www.autosport.com. While due care is taken to ensure the contents of Autosport are accurate, the publishers and printers cannot accept liability for errors and omissions. Advertisements are accepted for publication in Autosport only upon Autosport Media UK's Standard Terms of Acceptance of Advertising, which are available from the Advertising Department.



QUIZ

WHO, WHAT, WHERE, WHEN?

WHO IS THIS?

This cheeky chappy was cruelly denied the chance to really show what he could do.

He went from burnt wood to smoking tyres in short order, taking on allcomers and prevailing, earning a step up the ladder, which he completed with ease. He was back at the scene of earlier success when fate dealt him a blow. But he defied the odds to make it to the beach on time.

Pace disguised his pain and it didn't last. An avuncular figure brought him back from the eastern, before a fallen giant gave him a safe haven.

In between there was an emotional first in the round, before he was recalled by his first love to sit next to a superstar. He was twice in the right place, but it wasn't enough. After a long hike over the Alps he returned home and once again found himself perfectly placed to take advantage.

After the call of the wild left with a whimper he became a familiar face across the land.

LAST WEEK'S ANSWERS Who, what, where, when? Francois Hesnauld, Renault RE60, Nurburgring, 4 August 1985. **Who is this?** Rene Arnoux. **On this day** 1) Gunnar Nilsson. 2) Tyrrell P34. 3) 1990. 4) Disney World Speedway. 5) BAR. **Name the helmet** Jean-Pierre Jabouille.

ON THIS DAY

1 Which American claimed the first of his nine Formula 1 World Championship podiums on this day in the 1982 Belgian GP?

2 It's 2016 Australian Supercars champion Shane van Gisbergen's birthday. With which team did he make his series debut?

3 NASCAR legend 'Smokey' Yunick died on this day in 2001. His cars won two NASCAR Cups, but for which driver?

4 Which German racer claimed the only points of his F3000 career on this day in the 1998 race at Barcelona?

5 Which Swiss rider claimed his only 500cc motorbike GP win on this day in France in 1982?

NAME THE HELMET



IN NEXT WEEK'S ISSUE

Spanish Grand Prix Can Ferrari bounce back?

MOTORSPORT IMAGES/HONE



DARE TO BE DIFFERENT

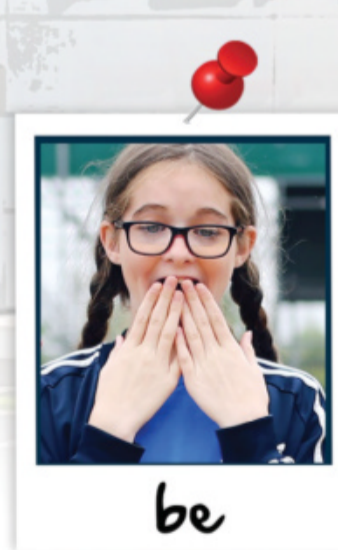
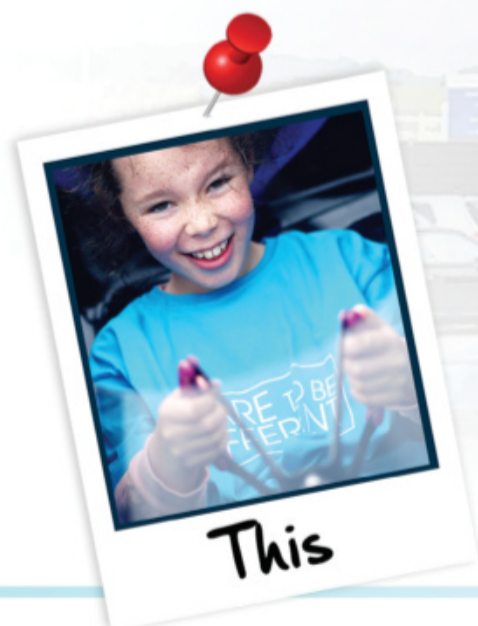
PORSCHE
EXPERIENCE CENTRE
SILVERSTONE



THIS ONE'S FOR THE GIRLS

WIN A DAY WITH D2BD AT THE PORSCHE EXPERIENCE CENTRE ON WED, 10 JULY
LOCATED AT SILVERSTONE CIRCUIT, TOWCASTER. DAY RUNS FROM 8.30AM - 2.45PM

Do you know an 8-11 year old girl who is nuts about cars and would love to be our VIP guest, participating in a series of motor sport and STEM challenges? It's easy to enter - just tell us which Formula 1 team Susie Wolff was a test driver for between 2012 and 2015. Email your answer to info@daretobedifferent.org before 31 May*.



Girls must be a minimum of 135cm height to be able to enter and participate in the Porsche passenger thrill rides. Girls must be accompanied by a chaperone (18+) for the duration of the day. Please note that all entries will be acknowledged by a member of the D2BD team, but only successful applicants will be notified.



Deutsche Bank
Wealth Management



motorsport uk



DRIVING FEMALE TALENT

SCHROTH RACING CHAMPIONS CHOICE

SCHROTH[®]
RACING



**NEW FIA Standard 8853-2016
available right now**



**XLT
CARBON**

Wide Range of HANS Devices, Harness Belts & Racing Nets

Visit www.schroth.com/racing to learn more about our products.



Follow us on Facebook
www.facebook.com/schrothracing

 AUTOSPORT

ENGINEERING



How road DNA can shape a racer

WHY BASE CHASSIS STILL INFLUENCE COMPETITION CARS

NOW AVAILABLE

BOSCH MOTORSPORT M5 RACE ABS KIT

ORDER FROM MOTORSPORT SYSTEMS LTD.

PRICES
FROM
£5,091



**STOP
PRESS!**

**M5 ABS KIT NOW AVAILABLE FOR
PORSCHE 991 GEN 1 & GEN 2 CUP CARS**

THIS KIT BOASTS A HOST OF IMPROVEMENTS INCLUDING:

- ✓ Enhanced brake performance with further developed ABS control algorithm (for example, corner braking)
- ✓ Calculation and display of optimal brake balance
- ✓ New ABS hardware for improved wheel slip control
- ✓ Extended variety of wheel speed sensors
- ✓ Improved system robustness due to cancellation of susceptible brake light input
- ✓ Diagnostics via CAN as driver information (for example, warning messages on driver display)
- ✓ Optimized performance and shortened braking distance through individual adjustment of slip with respect to downforce
- ✓ Only one software version for three hardware variants
- ✓ Hardwired wheel speed sensor signal output
- ✓ Enhanced MM5.1, 5 axis acceleration sensor, with yaw and roll rate included
- ✓ System can be configured to utilize incoming CAN message to change maps
- ✓ Front and rear brake pressures

PRICED FROM:

ABS M5 Kit Clubsport

F 02U V05 2919-01

£5,091.00

ABS M5 Kit

F 02U V05 289-01

£5,980.00

ABS M5 Kit

Autosport Connectors

F 02U V05 290-01

£7,181.00

All prices are subject to VAT.
Prices valid until 31st December 2018.

VIEW THE FULL TECHNICAL SPECIFICATIONS:

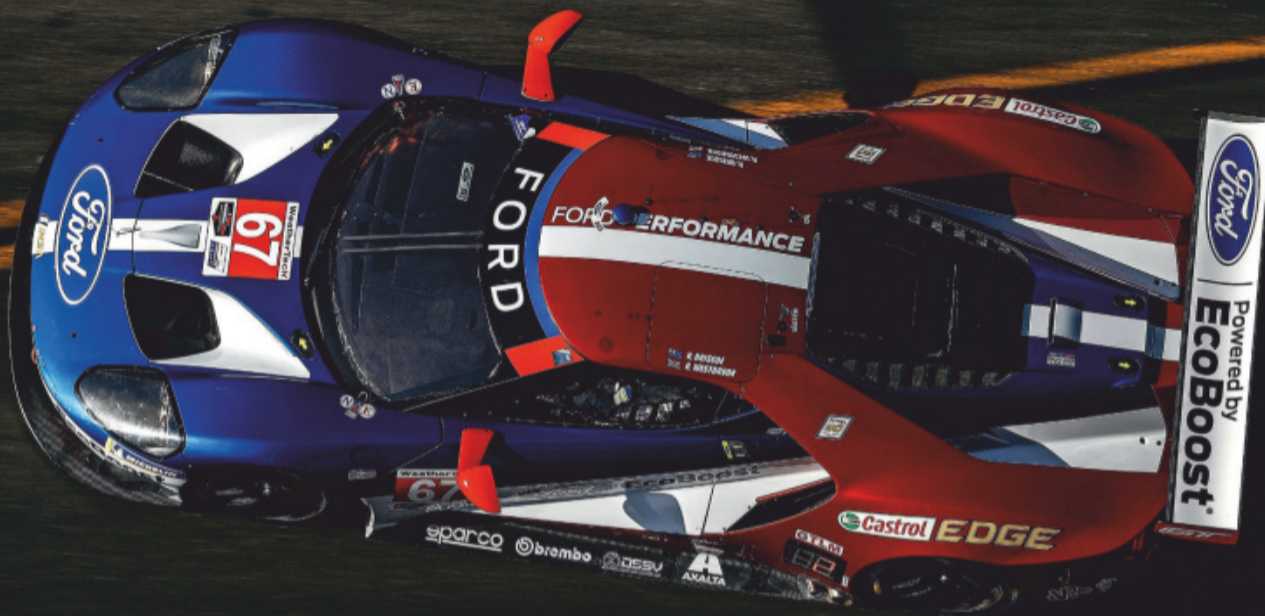
www.motorsport-systems.co.uk/abs-m5-race-kit



MOTORSPORT
SYSTEMS

01684 291122
www.motorsport-systems.co.uk

Ford GT has the perfect profile for Le Mans success



ROAD RELEVANCY DOESN'T HAVE TO BE A BAD THING

It's 20 years since the evocative Toyota GT-One and Mercedes CLR last graced Le Mans at the height of the 'hypercar' era, and anticipation is growing for its return in the 2020-21 World Endurance Championship. One of the marques that is rumoured to be interested is Ford, with a derivation of its existing GT, following the conclusion of its four-year GTE programme this year.

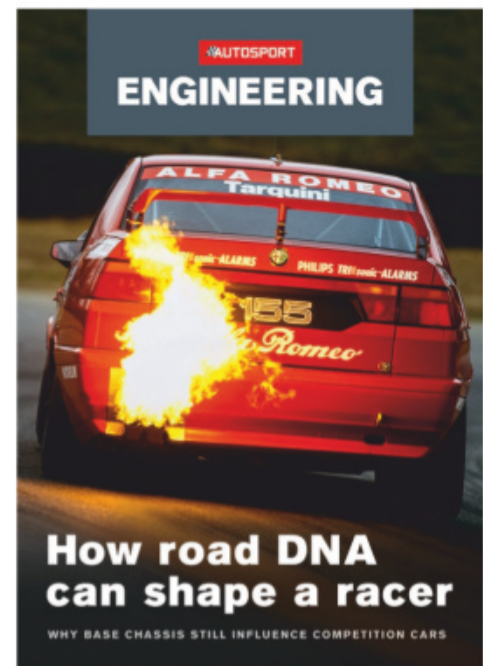
That shouldn't come as much of a surprise, since if you were to design the ideal GT car to race at Le Mans, it would probably look something like the Ford GT. Low-slung – like the original GT40, so named for being only 40 inches tall – with aggressively tapered bodywork to limit drag, it delivered on its design brief of winning at Le Mans 50 years on from the Blue Oval's first LM triumph in 2016.

Since Ford had conceived the GT road car with its racing cousin in mind –

having already scrapped its original idea of competing with a Mustang because to be competitive, it would need to be so far removed from the road car to be almost unrecognisable – it's something of an extreme example of how a road car can influence the on-track product.

But how relevant is it in an age where parity and Balance of Performance rule? Matt Kew weighs up this question in the cover feature on page 8, with insight from top engineers in the British Touring Car Championship and Australian Supercars.

The push for road relevancy is often treated with disdain in motorsport circles but, as Lucas di Grassi points out on page 7, motorsport will still find a way to flourish even with changing market behaviours in the automotive world. And if the result is we get to see hypercars like the McLaren Senna and Aston Martin Valkyrie competing at Le Mans, then I'm all for it.



How road DNA can shape a racer

WHY BASE CHASSIS STILL INFLUENCE COMPETITION CARS

COVER IMAGE
Motorsport Images

04 NEWS
Industry update
The latest developments in the world of motorsport engineering

07 DRIVING CHANGE
Lucas di Grassi
Automotive apathy could have an unforeseen boost for motorsport

08 ROAD CAR TO RACER
The forecourt's effect at the flag
Why the sporting pedigree of road cars is still relevant on the track

18 FORGOTTEN MODEL
Chassis mixing and matching
AmD Tuning's recent BTCC success is tough to replicate in other disciplines

22 CLIVE HOWELL
Penske's key player retires
After 39 years of service, Roger Penske's top lieutenant bids farewell

26 BATHURST TO IMSA
John McGregor and Geoff Slater
Conquering Mount Panorama is only the start for IMSA's new engineers

30 MOTORSPORT EDUCATION
Universities achieving legitimacy
How motorsport courses at Cranfield and Wolverhampton are thriving

34 BE AN ACE ENGINEER
Brian Lisles
Discover the top tips from working under Ken Tyrrell and Carl Haas



James Newbold

JAMES NEWBOLD
EDITOR

james.newbold@autosport.com

EDITORIAL

SUB-EDITORS
Stuart Codling,
Peter Hodges,
Kevin Turner

CONTRIBUTORS
Lucas di Grassi,
Matt Kew,
David Malsher

ART EDITOR
Michael Cavalli

ADVERTISING ENQUIRIES
Don Rupal
email
don.rupal@
motorsport.com
020 3405 8107



autosport.com/engineering

F1 OPENS BRAKE SUPPLY TENDER

Liberty continues drive for cost-cutting and FIA closes oil-burning loopholes

The FIA has opened the tenders for standard brake systems and wheel rims in Formula 1 from 2021, as part of its ongoing push to lower costs for teams.

It follows a tender issued for standard gearbox cassettes earlier this year, as F1 owner Liberty Media looks to rein in areas where teams spend a lot of money designing, testing and developing parts for minimal performance gains.

Two separate invitations have been opened for parties interested in supplying brake parts and wheel rims until 2024.

The brake tender is split into two parts: one for brake pads and friction discs, while the other involves a hydraulics system that comprises the front and rear calipers, a master cylinder

and brake by wire components.

The wheel tender is for 18-inch rims, although there is scope for the wheel width to change slightly for 2021.

The submission date for all tenders is 22 May, with the FIA's decision expected on 14 June.

Meanwhile, the FIA has made a number of minor changes to the F1 technical regulations for 2020 concerning clutch management, oil burning and the positioning of wing mirrors.

To place greater responsibility on the driver at the race start and create the potential for greater variation off the line, the clutch signals used by the standard ECU will also be heavily monitored by the FIA to limit any advantageous mapping.

The paddle must work linearly with the clutch – meaning that the drivers' actions must be wholly representative of the engagement of the clutch. To close off potential loopholes, pull-type paddle-activated clutches will also become mandatory.

The FIA has now specified that cars can fit only one auxiliary oil tank, which cannot exceed 2.5 litres, and the amount of fuel outside the survival cell has also been reduced from 2 litres to 0.25 litres, stopping any fuel-flow trickery or mixing of oil with fuel in other areas of the car.

Finally, to address concerns that the 2019-specification mirrors offer limited visibility, they must now be 30mm closer to the survival cell and 40mm lower.



Brake tender will be split, with pads and discs distinct from hydraulic system

GALLOWAY
motorsport
IMAGES

WILLIAMS ADVANCED ENGINEERING WINS BATTERY TENDERS FOR EXTREME E AND E TCR

Williams Advanced Engineering has won two battery tenders for start-up electric championships.

Alejandro Agag's off-road Extreme E concept, which had previously planned to use Formula E supplier McLaren Applied Technologies to power its Spark Racing Technology chassis from 2021, and the multi-make E TCR championship that is planned to start next year, will both be powered by WAE batteries.

Agag explained that the SUV series had opted against using the MAT battery to ward off potential



WAE batteries will power E TCR Cupra next year

PHOTO 4

complaints about intellectual property concerns, although the XE prototype will still use a MAT-produced unit. The latest technology from WAE, which

supplied the battery for the original Gen1 FE cars, will be tailored to the desired XE race format with "short bursts of a lot of energy for 10-15 minutes".

E TCR, an electrified version of the TCR framework set up by TCR founder Marcello Lotti's WSC Group, will feature cars equipped with a common supply package of motor, gearbox and inverters.

SEAT's performance brand Cupra is currently the only manufacturer to have developed a car to E TCR regulations, although Hyundai is believed to be working on an electric version of its Velostar TCR model.

Lotti said: "We are proud of this agreement that associates the Williams name with a new and ambitious brand like ETCR."

Malyon (right) will take on new FIA position



MOTORSPORT IMAGES/DAVENPORT

FIA APPOINTS TIM MALYON AS FIRST HEAD OF RESEARCH

British engineer Tim Malyon has been named as the FIA's first head of research, with a focus on safety issues. In a statement, the governing body said that the role "has been created to oversee the growing number of safety research projects undertaken by the FIA. In addition, Malyon is tasked with managing the FIA's research groups and associated working groups, as well as an increased focus on accident investigation."

Malyon worked at Red Bull in a variety of roles for 12 seasons, having originally joined the team when it was still known as Jaguar Racing, and

was part of the race engineering team from 2008-14. He joined Sauber as head of track engineering at the start of 2016, before leaving after just five months for BMW to work as chief engineer of its DTM programme the following year. His most recent role was as BMW's head of track engineering, with a focus on the Formula E project.

The Leeds University graduate, who will be based at the safety department in the FIA's Geneva office, has already chaired the most recent meeting of the Research Working Group, which covers safety issues in all forms of motorsport.

IN BRIEF



OWENS

ALONSO GETS SENSORED

Fernando Alonso's thoughts and feelings will be captured during his assault on the Indianapolis 500 this month, with the Spaniard set to wear brain-sensing technology developed by Swiss start-up MindMaze, working in technical partnership with McLaren Racing. Alonso (above) will help to develop its 'MindDrive' platform, which is capable of capturing and transmitting key neural signatures from the driver to a trackside medical team in real time in the event of an incident. It will also enable McLaren Racing to gather data and insight on overall driver safety and performance.

GEELY APPOINTS RICARDO

Geely Auto, a subsidiary of the Chinese group that owns Volvo, Lotus and Lynk & Co, has appointed Ricardo to develop a new advanced transmission for its range of range-extended plug-in hybrid vehicles. Engineers from Ricardo, which develops gearboxes for racing applications in Formula E, GT racing and prototypes at its Leamington site, will focus on the mechanical design, control and calibration of the new system.

RENAULT SIGNS UP DUPONT

Renault's Formula 1 team has agreed a "multi-year strategic technical partnership" with DuPont to work on advanced hybrid and electric powertrain solutions. The US chemical giant, best known in motorsport circles for its fruitful partnership with Jeff Gordon in NASCAR, produces polymers and adhesives that are used for reducing weight and thermal management in F1 ERS systems, bodywork and tyres, as well as in driver safety equipment. The Enstone team will also collaborate with DuPont on the development of new technology for future consumer and road car applications.

Eng recovered from Saturday misery to earn race-two pole



MOTORSPORT IMAGES/BART KOWIAK

DTM TEAMS GET TO GRIPS WITH NEW TURBO TECH

The DTM's new four-cylinder, two-litre turbo era began at Hockenheim last weekend, and as expected all three of the manufacturers suffered mechanical glitches in a series where retirements are almost always caused by incidents.

One such drama struck the RBM-run BMW M4 of Philipp Eng, who set a blistering pole position on Sunday but had missed a free practice session and Saturday's qualifying with a sensor problem that shut down the electronics and proved difficult to solve. It was typical of any step into the technical unknown in motorsport.

"It's a completely new system – electronics are completely new, all the wiring is completely new. There will always be things happening where you initially have no idea, you then figure out what it is," said BMW sports chief Jens Marquardt.

"You then figure out do you have a systematic problem that you have to resolve for all cars, or is it something isolated to one car? Was that just a faulty sensor, was it a batch, was it an installation problem? We couldn't change the sensor because it's directly attached to the engine. But we found a workaround and the car could run."

GREENPOWER EDUCATION TRUST HITS HULL STREETS

A closed-road race on the streets of Hull last month organised by the Greenpower Education Trust attracted 700 aspiring engineers and scientists between the ages of nine and 25, entered across 57 teams.

The landmark event, attended by 5000 people, marked the beginning of Greenpower's 20th anniversary celebrations and came shortly after the build of its 1000th F24 kit car for the 16-24 age range, which was sprayed gold and displayed at various locations in the city.

The STEM-based charity, which lists the Duke of Richmond and Motorsport UK chairman David Richards as patrons, is seeking to address the engineering skills gap of an estimated 104,000 STEM graduates and 56,000 technicians per year.

Trust CEO Paul van Veggel said: "It was an ambitious and at times daunting task, but the result was a fantastic showcase of the Greenpower Education Trust and the work of the next generation of potential STEM workforce."



STEM street races were well received



Could we see this livery in F1 soon?

MOTORSPORT IMAGES/LESIEUR



Charles Maier launches soft carbon fibre watch bands for the Apple Watches, 38, 40, 42 & 44mm. A 60 year old family business stitches these bands together in Italy using our American woven & laminated carbon fibre coupled with the finest European leather.

charlesmaier.com | +1 510 581 7602 | California
sales@charlesmaier.com

SGS RACING
TRANSMISSIONS



SGS is a Motorsport Transmission Design and Manufacturer, producing Innovative Sequential Racing gearboxes, 4WD Systems and Limited Slip Differentials.

Brackwell Farm, Winchendon Road,
Nether Winchendon, Aylesbury HP18 0DS

Tel 01844 299565

www.sgsracing.co.uk

MICK GARDNER RACING



Factory Trained Technicians // Large Stocks of Shocks, Springs and Parts // Official Sales and Service Centre // Fast Turnaround on Servicing, Revalving, etc. // Bespoke Shock Absorbers Built to Customer Spec // Mick Gardner Racing developed electronic suspension Mechatronics package proven successful in a number of different applications

CONTACT RUSS WALTON @ MICK GARDNER RACING NOW

E-mail: russwalton@mickgardnerracing.com **Website:** www.mickgardnerracing.com **Telephone:** 01226 240 099





DRIVING CHANGE LUCAS DI GRASSI

THE SURPRISE BENEFICIARY OF AUTOMOTIVE APATHY

Current trends point to a bleak future for top-level motorsport, but there could be an unintended positive by-product

The 100th world championship race in China raised a lot of questions about the future of Formula 1, and of motorsport as a whole. And for many people, that future does not look very encouraging. A lot of that can be put down to the fast-changing automotive segment, which is posing a major challenge for motorsport to stay relevant.

Volvo recently announced that it will not produce cars that go over the public speed limit, and even Germany is now talking about putting a 200km/h (124mph) speed limit on the autobahns. If you think about it, there is a straightforward logic to it – if you can't go over 25km/h on an e-bike because it's dangerous for pedestrians, then why should you sell a car that goes 300km/h in a country where you can't go more than 120km/h on a public road?

As government regulations become tighter on safety, I am sure that in 10 years you will not be able to buy a new car without some kind of autonomous system to make it safer, like crash avoidance or speed control by location. This is not necessarily a bad thing, but as it becomes more and more restrictive it will have serious implications for motorsport. In circumstances where power and speed are constantly monitored, why would a

manufacturer invest in a racing programme to develop technology that would make their latest supercar go two seconds quicker on a track than the previous model?

Performance brands will see that they don't need to invest in motorsport to be successful. Bugatti for example doesn't do any motorsport, Koenigsegg and Pagani the same, but all are very successful despite 99.9% of their customers not knowing how to extract its true performance. Even if they do, they will never use it in the lifetime of the car because they are mostly bought to be a status symbol.

Tesla is not in Formula E but it is the most sold electric car. People don't have a perception that Jaguar has a better

“The ‘win on Sunday, sell on Monday’ model that was very strong in the past is decreasing”

drivetrain because they won in Rome, so they're going to buy an I-Pace instead of a Model 3. It is a business success story and is dominating a segment without investing a single dollar on motorsport – which shows that the 'win on Sunday, sell on Monday' model that was very strong in the 1950s, 1960s and 1970s is decreasing.

Of course, there is still relevance – Ferrari and Porsche built the prestige around their brands through motorsport, and Audi has transformed its image with success at Le Mans – but it will have a much lesser effect over time, as we're already seeing with Tesla, when the cars on the roads are increasingly autonomous.

As the relevance curve between motorsport and the industry decreases, motorsport has to adapt to reduce this curve, and one of the things that I'm doing is to integrate autonomous systems into motorsport with Roborace. But the future for motorsport can still be bright, depending on how fast it adapts to these new realities. And in my view, there could be a positive

impact in an unexpected way.

As regulation on the road gets tighter, I expect that people who really like to drive their cars quickly will participate in more trackdays and more amateur racing. So while the amount of money the manufacturers will spend on motorsport will decrease on average because there will be less market and less potential for those technologies in professional motorsport, amateur motorsport could actually rise as more people have access to nicer cars, for example in India and China where GDP is rising every year. Motorsport as we know it is not going to diminish as a sport. There are still going to be a lot of people driving their cars and wanting to have this adrenaline rush, but it's just going to be different.

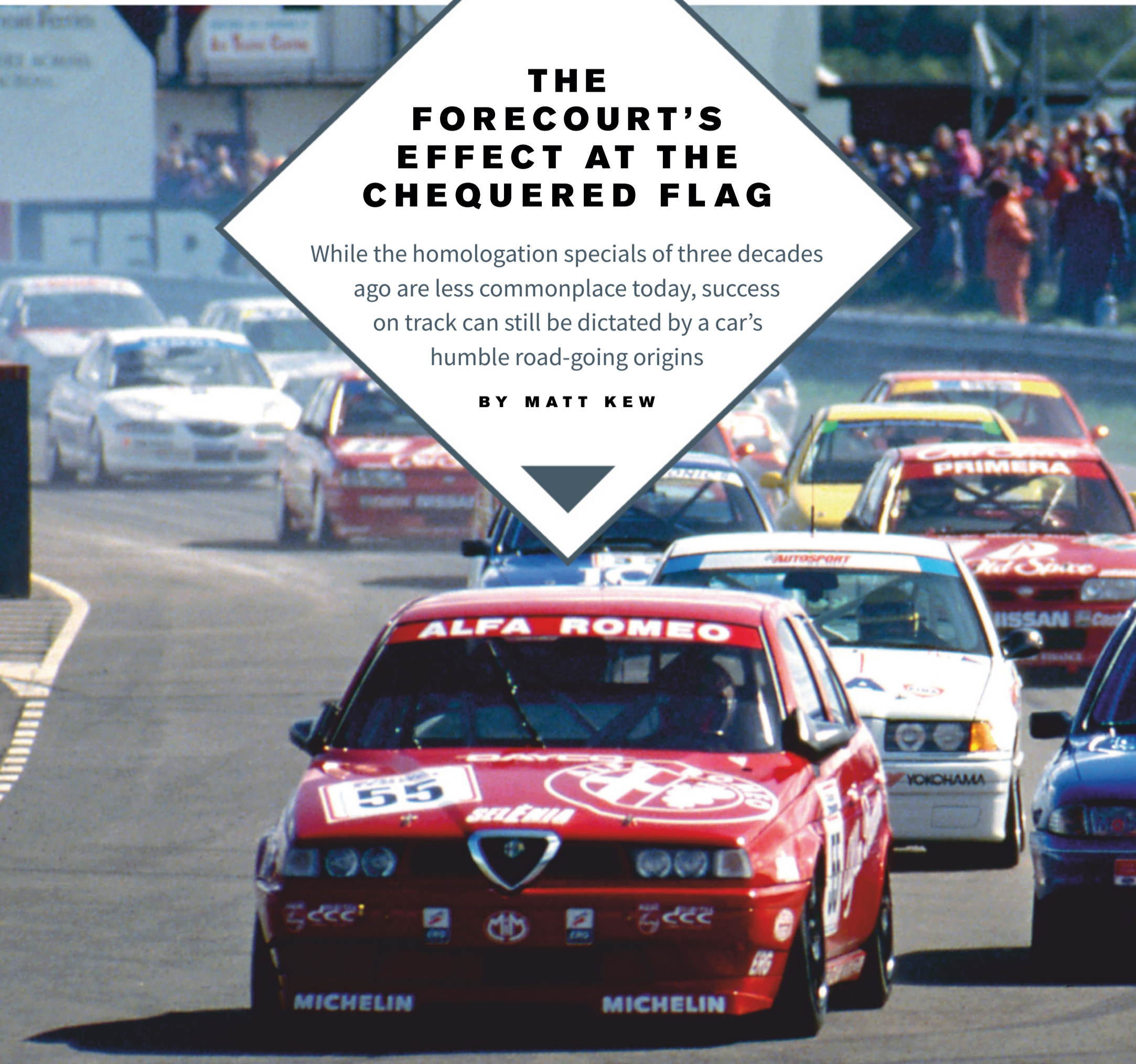
How F1 responds to this is the big question. It has to be proactive to keep manufacturers interested and continue generating the professional engineers, drivers and media people that will keep the flame alive for the next 1000 grands prix. ■



THE FORECOURT'S EFFECT AT THE CHEQUERED FLAG

While the homologation specials of three decades ago are less commonplace today, success on track can still be dictated by a car's humble road-going origins

BY MATT KEW



There was no reference in the owner's manual to the identity and function of the extra parts in the boot of the special 'Silverstone' edition of Alfa Romeo's 155 saloon when it left UK dealerships. Introduced in 1994, the 2500 examples produced came with a bolt-on adjustable rear wing and an extendable front splitter that customers could fit at their leisure.

Their purpose was to allow the marque to homologate its recently launched British Touring Car Championship racer in which ex-Formula 1 driver Gabriele Tarquini

would win that year's title. From that, the revered Super Touring era of the late 1990s was shaped. But it wasn't without its controversies: when Tarquini earned a clean sweep of the first five races that season, rival manufacturers lobbied organising body TOCA and Alfa Romeo was told to remove the 155's aerodynamic appendages. It refused, packed its trailers and didn't compete at Oulton Park.

Further along the pitlane, Volvo had made its return to motorsport in the BTCC with the now iconic 850 estate. The enclosed boot area yielded a theoretical

aerodynamic advantage and a measurable PR impact, but the long roof also added weight behind the rear axle and way up high, raising the centre of gravity and hamper its cornering traits.

Unfortunately, as a package, it didn't work out. Drivers Rickard Rydell and Jan Lammers only netted one top-five finish each that season and the estate was swiftly replaced by the saloon 850 for 1995. Like the 155 'Silverstone' it was available with an optional rear wing and, sure enough, Rydell and new team-mate Tim Harvey amassed six wins between them.



motorsport
IMAGES

For many aficionados the Evo variants of the BMW M3 E30 – which even came with ‘Monza’ and ‘Nurburgring’ settings for the adjustable rear wing – represent the peak of the homologation special. Nearly three decades on, the scene is very different: limited edition models are generally produced afterwards to celebrate championship success.

But the basic characteristics of a road car continue to exert a strong influence when it comes to the fortunes of its competition counterpart. Even taking into account the equalising effects of Balance of ►



Volvo's 850 estate couldn't
defy physics in 1994 BTCC

motorsport
IMAGES



motorsport
IMAGES

ITC's Class 1 model was too expensive to remain viable

Performance and success ballast, the body shape, wheelbase, engine placement and centre of gravity of a road car still have a lasting impact when it reaches the track.

As the new millennium approached, costs had spiralled out of control in Class 1 Touring Cars, just as they were beginning to in Super Touring. Thanks in part to anti-lock brakes, electronic dampers and liberal use of carbonfibre, a two-car attack verged on £10million. Along with poor attendance and TV viewing figures, it led to the demise of the International Touring Car Championship following the 1996 season. But after a three-year hiatus, in 2000 the DTM was reborn.

Alongside Mercedes with its CLK and Opel's Astra, Audi returned to the fray with the TT. Based on the comparatively diminutive road car, it failed to score a podium all season and its five drivers propped up the championship table – though lead driver Laurent Aiellio, fresh from winning the BTCC with Nissan, did outscore the Astra of Christian Menzel.

The poor form was partially due to the tiny window in which the car was developed, but also due to the road car's compact footprint. Double BTCC champion James Thompson was one of the five drivers in that first year, and vividly recalls the difficulties in getting the TT-R to the grid – and then the further struggles when it got there.

“Our company, Foss-Tech, had to get the

three cars on the grid for the first race at Hockenheim in 16 weeks,” he says. “We have to look back and say that we helped [co-developers] Abt get to the start of a programme, and they've been incredibly successful with Audi ever since. I always look at it and smile and think that I'm glad we all got there in that first race.”

But that's the positive from an otherwise very trying debut season for the car. The TT available in showrooms was based on the Volkswagen Golf of the time, so the model line-up was predominantly front-wheel drive. That, combined with its modest engine, meant serious surgery was required before it could enter the DTM.

“It was very difficult because the big constraint was the wheelbase and the width – that was a bit of a nightmare,” Thompson continues. “The road car only had a two-litre engine and we were trying to get a huge four-litre V8 in it. It wasn't designed for it and you were not allowed to extend the wheelbase massively to compensate. That meant the weight distribution was bad.

“The car was done as well as it could have been to try and get on the grid in the timescale available. But earmarked for the second year was always to run an aluminium engine, and that's what they did because they saved about 28kg from the drivetrain.

“At the time there was no standardised length or width, so the Mercedes and the others at the time were about 30 or 40cm

longer than our car, maybe even more. But everything goes with length – you've got all the extra aero, all the extra dynamics with centre of gravity and weight distribution. The Audi in its first year was never going to be competitive.”

Part of the cost-saving measures was the introduction of a spaceframe. That meant the pedigree of the 450bhp TT-R was far removed from its road-legal variant, but there were still limitations in place when it came to how far you could elongate a car.

“They went for a spaceframe, at which point in time you weren't taking an existing Audi TT,” continues Thompson. “You were taking a spaceframe to the dimensions of the model, give or take



Thompson knows a few things about battling difficult base cars

Jordan, in the new 3 Series, heads Sutton's Levorg at Brands



“It was a real challenge, but we came in at about the same weight as the 1 Series”

the various percentage increases for it being a racing car wheelbase.

“For something like the Audi TT, it was massively penalised because it was this tiny car, narrow and short. Then you had to try and put a V8 engine in the front of it, which meant the overhang in front of the front wheels was a bit of a nightmare.

“Because of the aerodynamics, after the first year it was very obvious these cars needed a serious amount of input. The second year, the fact that they got a massive change in the regulations to allow wheelbase and width changes created the huge jump they had.”

Over time, these regulatory changes enabled the TT-R to become competitive.

Audi offered its factory support to the programme and in 2002 Aielio won eight of the 20 races to lift the crown.

Later on in Thompson's career, he was drafted in as development driver for the Next Generation Touring Car regulations in 2010 ahead of their staggered introduction into the BTCC. It was again another cost-cutting step in tin-tops as the expense of Super 2000 cars began to creep up. The new regulations slashed prices by introducing standardised brakes, suspension and gearboxes. That also reduced the number of variables in play, bringing back the importance of the base road car in the discipline.

For the 2019 season defending teams champion WSR has introduced an all new BMW 330i M Sport to replace its long-serving 125i M Sport, which has racked up over 100 BTCC podiums since its introduction in 2013.

On the road, the latest-generation G20 model gave rise to the introduction of a four-wheel-drive powertrain in the 3 Series. That meant, in theory, the team could have opted for either a front or rear-driven platform on the track.

“We could have done it as a front-wheel-drive car,” says John Waterman, engineer to WSR driver and 2013 champion Andrew Jordan. “But the problem is the engine is longitudinally mounted, so it would have been very awkward to do front-wheel drive because the rules now say you have to keep the engine at the same attitude as it is in the road car.”

The option of a variable driveline was not the only difference from the 1 Series. The wheelbase grew by 16cm, and the whole car is 39cm longer. That means the 3 Series cuts a much larger shape on the grid. While that has knock-on effects for the car's footprint, after passing through the WSR workshop it hasn't come with a weight penalty.

“It was a real challenge, but we came in at just about the same weight as the 1 Series,” Waterman continues. “I think a lot of that is because of the nature of the way the road car has been designed. The G20 from BMW, although a lot of it was aluminium we had to cut a lot of that off because it's in front of the bulkhead. But the rest of the car, the way it's structured and the steelwork, it has fewer panels so they've managed to reduce the weight.

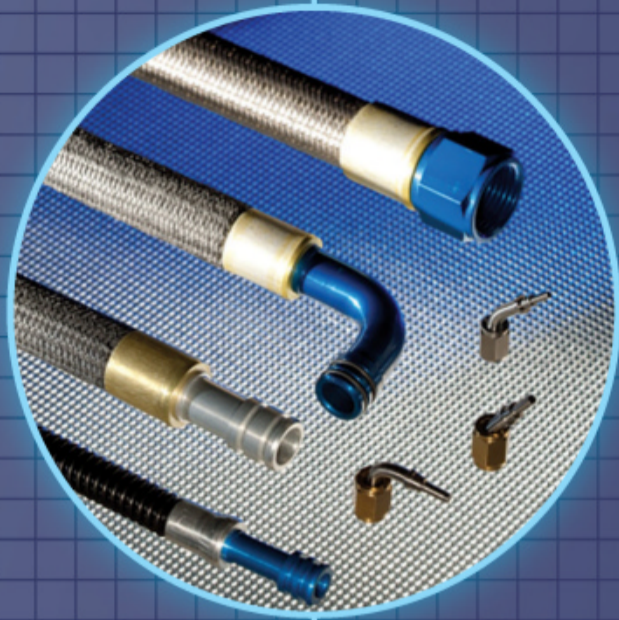
“We were quite surprised when we came in at practically the same weight as the 1 Series shell. That was good. And then, because it's a wider car, it does make it a little bit better for packaging but the regulations have a maximum width anyway, so the contact patch across the car is the same as all the others. All we gain with is in length.”

Another surprise came with how the effect of the extra length manifested itself on track. The car was expected to be more cumbersome through slower corners, but the other characteristics of the four-door chassis have helped to combat a loss of agility – as Jordan's victory in race two of the season-opener on Brands Hatch's Indy circuit proved. ▶

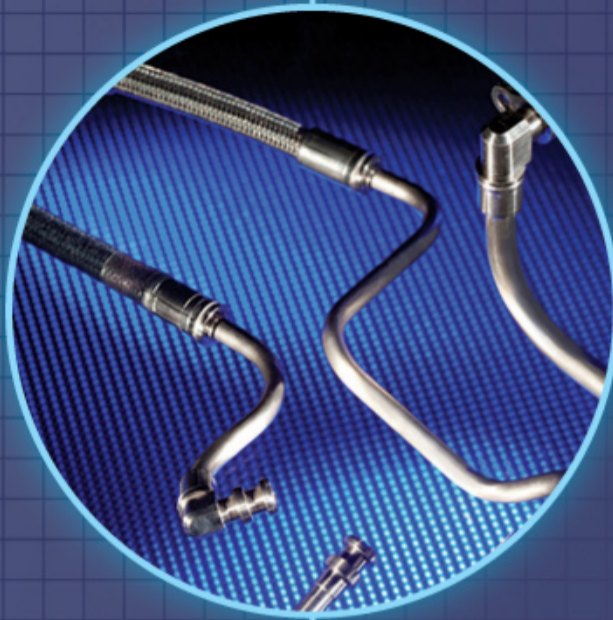
Audi TT struggled in 2000 despite major surgery



INTELLIGENCE CONNECTED



**Flexible Hose
and Fittings**



**Rigid Lines
and Swagelok**



**Filtration
Systems**

It's not by accident that, over the years, we have developed many successful partnerships with customers throughout motorsport – particularly in F1, endurance racing and WRC.

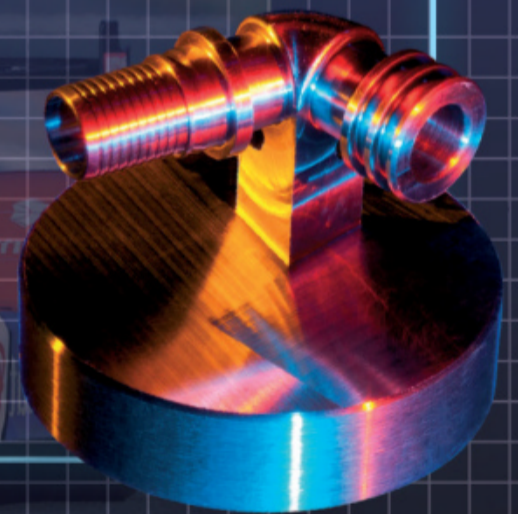
By applying intelligent analysis of their problems in the area of fluid transfer in high performance, high energy situations, we have established ourselves capable of providing innovative and cost-effective solutions.

SERVICES:

- 3D cad design service
- hose assembly
- hard-line manufacture
- cnc machining
- filtration design
- laser marking

PRODUCTS:

- **Titeflex smoothbore and convoluted hose products and fittings**
- **Swagelok fittings and hard-line system solutions**
- **Pall Filtration systems**
- **CIRCOR Industria solenoid valves**



FHS

MOTOR RACING

INTELLIGENT CONNECTIONS

Maintain system integrity, save weight, cut costs.
Make the connection now.

To find out how the quality of your own fluid transfer requirements can be improved, call our Technical Sales Team on

+44 (0) 1753 513080

FHS Motor Racing Ltd | 656 Ajax Avenue | Slough, Berkshire | SL1 4BG UK

Tel: +44 (0)1753 513080 Fax: +44 (0)1753 513099

Email: info@fhsracing.co.uk Web: www.fhsracing.co.uk

PEUGEOT'S UGLY DUCKLING

When the going gets bumpier and more rutted, the influence of the road car upon which the competition model is based is arguably even greater. In part, that's why one of the oddest cars within the World Rally Championship stable since the turn of the millennium struggled for success.

Peugeot scored a hat-trick of WRC manufacturer crowns between 2000 and 2002 with the 206, so its successor had big shoes to fill. But its replacement, the 307, took that rather too literally. Tagged with the unaffectionate nickname 'The Whale', the much larger 307 (35cm longer) won just three events – all thanks to Marcus Gronholm.

Now the technical director for Volkswagen Motorsport, Francois-Xavier Demaison was Peugeot's chief rally engineer between 1999 and 2006 and presided over the 307's introduction in 2004.

"Peugeot wanted us to use a 307 to promote the car," he says. "But we didn't want to use the normal [hatchback] because it was like a big shoebox. We said, 'If you really want to take the 307 then the CC [based on the convertible road car] could be an option'. It had better aero."

But, having been based on a cabriolet, the 307 struggled for stiffness. To compensate it required a more substantial rollcage, which added further weight and raised the centre of gravity.



Demaison's hands were tied over the 307 in 2004

Combined with a troublesome dual-clutch gearbox and inferior Pirelli rubber – Michelin introduced a strong gravel tyre – the results were poor.

"You have limited options," Demaison says. "The engine position has to be similar to the road car – you can move it down and backwards but you only have a certain tolerance. The same with the front suspension mounting points. They're the two main limiting factors.

"On the outside, you cannot change the bodyshell – if it's heavy then it's not so good. You need a small car with a very light bodyshell, a low engine position and good suspension pick-up points."

Fortunately for Demaison, he found all of those requirements on his move to Volkswagen and enjoyed a clean sweep of WRC title success with the Polo between 2013 and 2016.

Even Gronholm couldn't work miracles in the 307CC

"I must admit, [struggling in tight corners] is what we thought would happen," says Waterman. "We thought Brands would be one of our weaker circuits because of the Druids hairpin. The longer wheelbase has actually helped us a little bit there, it's made it more stable and the drivers say it's better too under braking.

"We haven't twist-tested the shell but I've got a feeling it might be a little bit softer in torsional rigidity. Maybe because it's a four-door, because over the kerbs now, even with the same springs and roll bars, the guys say the kerbs are much easier. There's less of a reaction."

The obvious difference from the 1 Series, which earned WSR and BMW a hat-trick of manufacturers' titles between 2016 and 2018, is the switch from a hatchback to a saloon body. That's helped clean up the airflow; the 3 Series cuts a smaller hole.

"One of our arguments with TOCA has always been the aerodynamics deficiencies of the 1 Series because it's basically almost an estate shape," says Waterman. "It cuts a big hole and it leaves a big hole behind, which is all drag. The 1 Series is bottom of the list for drag. At [high-speed] places like Rockingham and Thruxton, it feels like we hit a brick wall with the aero sometimes. It almost looked like the others had got another gear when they came up behind us.

"When we were deciding what we were going to go for next we had the option of the facelifted 1 Series or the 3 Series. When we saw the 3 Series' coefficient of drag was really, really low, obviously we thought we'd go for that, even though it's a bigger ▶





John Waterman discusses set-up with Andrew Jordan

car. I think now, in terms of the coefficient of drag for all the road cars out there, we're second to the Audi [S3] now. We've gone from one extreme to the other."

The upshot was that, at the speed trap across the finish line at Brands Hatch, it was the BMWs that headed the readings in races two and three. By contrast, that area is where the estate-bodied Subaru Levorg GT has long struggled since its introduction in 2016.

Following its family lineage with the Impreza, the Levorg employs a boxer engine, otherwise known as a flat four: the pistons move in a horizontal motion rather than vertically. That reduces its size and means it can be mounted much lower in the car's chassis.

"Like [three-time champion] Matt Neal said, the Levorg is a bit of Frankenstein," Waterman adds. "The advantage [Team BMR] got is they used an old regulation for the gearbox's minimum bell housing length. They pushed the engine right back in the chassis and TOCA allowed them to do it. What it's given them is basically a mid-engine car.

"But although people go on about the centre of gravity, to me it's the rotation around the front axle. Normally you have an engine above the front axle and when you get into braking you have a lot of weight going over the axle. Obviously, we have to run springs and roll bars to react to that weight. Because their engine is low down and behind the front axle they don't have that inertia around the axle so they can run very soft springs and bars, they can jump all the kerbs and straight line everything in the wet. It's fantastic and of course you get really good traction."

Carl Faux, then technical director of Team BMR, was responsible for designing the Levorg for 2016. He says that the boxer



Old BMW's shape comes with a drag penalty to new model

engine was, however, just one of many advantages of bringing Subaru to the BTCC arena for the first time in its history.

"The Levorg wasn't around [when the NGTC regulations came out] but the premise of using a boxer engine was always on the radar," says Faux, who is now at Walkinshaw Andretti United in Australian Supercars. "It had all the things going for it. The fact that it was an estate meant a bit more weight high up in the roofline at the back compared with other cars, but that was offset by the engine centre of gravity."

While the Levorg came good in 2017, enabling Ashley Sutton to seize championship spoils, it was ironically the engine that proved to be the biggest headache of its maiden campaign.

"In that first year, we rolled out with the standard road car inlet manifold on the race engine," Faux continues. "That was fine for producing low-down torque,

as in your road car when you're trundling around you're not looking for ultimate power, it's driveability. On the race track, that's not the case. So we had good low-down torque but we were starving the engine of air at high speeds.

"In a corner, for example, being a flat engine, while we battled to try and keep it away from the underside of a piston the oil inherently goes to one side of the engine, which means it's sloshing up two of the pistons. That then causes more parasitic drag from the engine so the performance out of it doesn't look as good in stall power.

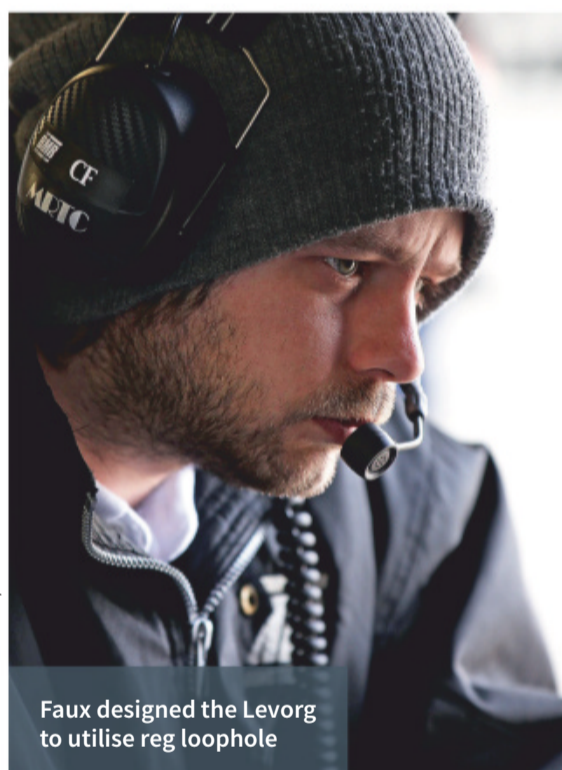
"We did have very good corner speed, but the crux of the car was always around the engine. Having a rear-wheel-drive car was something I wanted to do for a long time too. That was the right configuration to do it in."

The advantageous properties of the Levorg road car worked as planned. A



Sutton had to maximise corner speed to win 2017 title

JEP
motorsport
IMAGES



MOTORSPORT IMAGES/JEP

Faux designed the Levorg to utilise reg loophole

“The centre of gravity stuff was pushed hard by all the other teams because they just saw the corner speed”

roll and yaw condition. They're the three axes of rotation.

“With an estate you have a very large side area, which gives you a lot of yaw stability. You're always looking to get the power down and so the more stability you have when you're trying to accelerate, the harder you can get on the throttle and so the faster you can get round the lap. Everything is a compromise, it always has been and it always will be.

“The downforce produced off the Levorg was the most by any touring car from the BTC regs [in 2001] onwards. I think we did a pretty good job with that.”

Evocative homologation specials like the Alfa 155 'Silverstone' might be a thing of the past. But where the dimensions of the race car are required to fall in line with machines driving on the public roads, the impact of the road car remains enormous. Once you factor in the base car's aerodynamic properties, its centre of gravity and its engine placement, there's an exacting correlation as to where its strengths will lie on track.

Fortunately for the spectacle, it's the likes of BoP and success ballast that stops any one car from stealing a march and has contributed to arguably the greatest strength of current touring car and GT racing: healthy manufacturers interest, and a vast array of shapes on the grid.

beneficial weight distribution gave the racer strong cornering capabilities. But to prevent it from outstripping its rivals, TOCA looked to bring it back into line after protests from other competitors, not unusual when a team finds an edge.

“The centre of gravity stuff was pushed very hard by all the other teams because they just saw the corner speed of the car,” Faux says. “They thought, ‘The only way we can compete with that is if you haven't got enough power’. That's fine for a qualifying session, we could be competitive in 2016 like that. However, when you get to the race situation you can't race a car like that because if you're behind someone you're limited with how fast you can go in the corner by the person in front of you. But likewise, in a straight line, they can just drive up alongside – you can't benefit. So while it was a very quick car, it was an unraceable car.”

To find the middle ground, BMR made the choice to take the centre of gravity hit – and therefore losing much of what the Levorg had originally brought to the table. But there was an upside. A slower corner speed meant “for want of a better phrase, we could get our shit together to get the performance of the engine where it should be [for 2017]”, Faux adds.

Fortunately for the engineering team behind the Levorg, not all was lost through the turns. Although Waterman bemoans the aerodynamic deficiencies of the estate-like 1 Series, the plump rear of this body shape can yield on-track strengths, as the Subaru proved.

“[Aero] has a huge influence, it's an interesting proposition,” says Faux. “In a straight line, all you're interested in is reducing the drag because you're going straight ahead. In a corner, it's extremely different. You end up with a car in a pitch,



TAKE THE LEAD WITH NEXT GENERATION CONNECTIVITY

Few environments are more punishing than the modern racetrack. Extreme heat, vibration, grit, oil, grime, solvents, corrosion, and mechanical stress wreak havoc on traditional connectors. Winning components must not only survive, but outperform in the most extreme conditions. And when victory depends on a difference measured in milliseconds, compromising on connector quality is simply not an option. Learn how DEUTSCH and TE Connectivity are leading the pack in designing the next generation of connectivity solutions. Learn more at te.com/autosport

©2019 TE Connectivity Ltd. All Rights Reserved

EVERY CONNECTION COUNTS



GO TO OUR WEBSITE TO VIEW OUR FULL RANGE OF MOTORSPORT ELECTRONICS
www.CARTEKMOTORSPORT.com

POWER DISTRIBUTION PANELS

A switch panel and Power Distribution Module in one. Our Power Distribution Panels are a fully integrated solution designed to replace all the fuses, switches and relays of your race car.

- CONFIGURE CHANNELS IN 5A STEPS UP TO 30A.
- CHANNELS CAN BE PROGRAMMED TO CONTROL HEADLIGHTS/WIPERS/RAD FANS/STARTER MOTORS etc.
- EACH OUTPUT IS PROTECTED FROM SHORT CIRCUITS AND OVER-CURRENT.
- ADDITIONAL INPUTS ALLOW CHANNELS TO BE CONTROLLED BY ECU OR SWITCHES ON STEERING WHEEL.
- COMES WITH LABEL SHEETS FOR FULL CUSTOMISATION - RETRO EDITION NOW AVAILABLE.
- NO COMPLEX CONFIGURATION SOFTWARE - AMP SETTINGS AND LOGIC FUNCTIONS ARE SELECTED THROUGH THE FRONT PANEL.



8 and 16 channel versions available

SOLID STATE BATTERY ISOLATORS

Cartek Battery Isolators are designed to overcome all of the problems and restrictions associated with mechanical and electro/mechanical battery disconnects.

- FULLY ELECTRONIC WITH NO MOVING PARTS - COMPLETELY RESISTANT TO SHOCK AND VIBRATION.
- MUCH SMALLER AND LIGHTER THAN TRADITIONAL KILL SWITCH.
- MEETS NATIONAL AND FIA REGULATIONS.
- STATUS LED FOR FAULT DIAGNOSIS.
- SEALED INTERNAL AND EXTERNAL SWITCHES REPLACE TRADITIONAL PULL CABLES THAT ARE PRONE TO SEIZING.
- MOUNTS CLOSE TO THE BATTERY FOR REDUCED CABLING.
- QUICK AND EASY TO INSTALL.



BATTERY ISOLATOR XR
Designed for motorsport ECU's/PDM's



BATTERY ISOLATOR GT
Designed for OEM ECU's/ignition systems

Rear-wing endplates helped get the Mustang an advantage

KLYNSMITH
motorsport
IMAGES



THE ROOT OF THE SUPERCAR CONTROVERSY

The influence of a road car on the track isn't universal within closed-cockpit racing. Like the DTM, Australian Supercars also employs a common spaceframe chassis. But the carry-over from car to car extends further than that: the floorplan is identical across the grid.

To fit the common dimensions, the new-for-2019 Mustang has been stretched and its roofline raised. That means its dominant form – winning 11 of the first 12 races this season – isn't derived from the Mustang in the dealerships. If that was the case, the rival Holden ZB Commodores and Nissan Altimas would rely on front-wheel drive.

"[Supercars] is a completely different championship," says Holden engineer Carl Faux. "The cars in TCR or British Touring Cars



are based on the road car shells. Supercars has got a common chassis, they brought that in for 2013. The chassis themselves – the floorplan, the cage – is identical in every single car. That means it's effectively a silhouette formula. They have no DNA in the chassis of what the road car is."

The Mustang's box-fresh pace has instead flowed from its superior aerodynamics. Although it was declared

legal at the start of the season, the one-sided nature of the results has led to a review. To bring about parity, the size of the Mustang's rear-wing endplates have been reduced to reign in its mid-corner performance.

As Faux adds, given the procedure for testing the aerodynamic capabilities in Supercars, the miscalculations that led to the performance disparity aren't very surprising.

"They do straightline testing [in Supercars] where they measure the downforce and the drag and equalise those. You've got a downforce number that you've got to hit – it's up to the homologation team to decide whether they want to put that distribution front or rearward. But that procedure is only in a straight line – it has no effect on what it does in the corners. You don't pick up the big endplates."

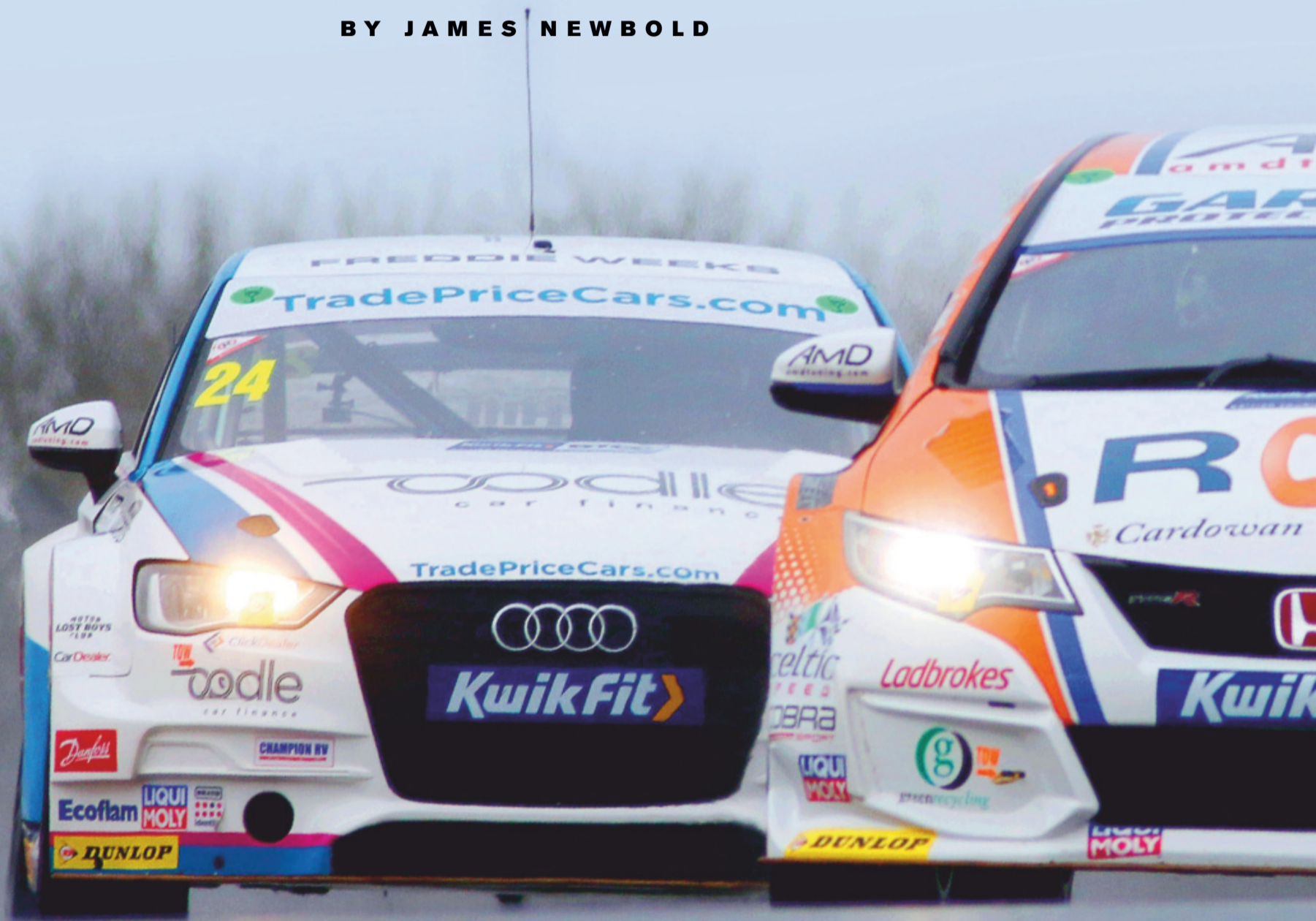
But it's not all bad, because at least the Mustang used Down Under shares something of a resemblance to the one customers can take home themselves.

"Obviously to get the Mustang in, they've had to change pretty much everything to make it happen," concludes Faux. "In fairness, it looks more like a Mustang than the NASCAR version does..."

MOTORSPORT'S FORGOTTEN MODEL COMING BACK INTO FASHION

The success of AmD Tuning in the early stages of this year's British Touring Car Championship points to a renaissance of a multi-chassis model lost to single-seaters and rarely used elsewhere

BY JAMES NEWBOLD



Since its debut in 2010, British Touring Car Championship stalwart AmD Tuning had only twice managed to finish on the outright podium. So when its cars managed the feat twice on the opening day of this season at Brands Hatch, with Rory Butcher taking the team's maiden victory in race three, team boss Shaun Hollamby could be forgiven for thinking all of his Christmases had come at once.

Even more impressively for a privateer outfit, the success has been masterminded despite using two different cars. Race-one podium finisher Jake Hill and Mark Blundell campaign AmD-run Audi S3s

under the Trade Price Cars Racing banner, while Butcher and Sam Tordoff steer ex-Eurotech Honda Civic FK2s. Another strong weekend at Donington Park last time out means both Butcher and Hill sit inside the top eight in the points, AmD the only team with two drivers in the top 10.

The appeal of running different cars is obvious – if the circuit or track conditions aren't conducive to one type of car, the other can step up to the plate. But it's much easier said than done, as teams have to bring separate stocks of spares, require more engineers for separate debriefs and – more commonly in GT racing – must also satisfy manufacturer's

confidentiality concerns.

VLN outfit Falken Motorsports – the racing arm of the Japanese tyre maker – runs a BMW M6 and a new Porsche 911 GT3-R in the top SP9 class to give it the best data spread for its R&D, and two spins at the Balance of Performance wheel of fortune. But that comes with its own distractions – such as having to sit its engineers facing each other, rather than alongside, to ensure their respective data sets are not shared. Compared to running identical cars with directly comparable data, running different chassis against each other can be a lot of hassle without any guarantee of success.



Butcher (left) has profited from AmD's multi-car attack

Butcher leads team-mate Hill down the Craner Curves at Donington Park



Falken's BMW and Porsche engineers have limited contact

GRUPPE C PHOTOGRAPHY



Matthew Gilmore struggled in Avanti's Ralt in 2002

MOTORSPORT IMAGES/MCNEIL

This is not the first time AmD has mixed and matched since the NGTC (Next Generation Touring Car) regulations, designed to reduce costs around a series of common components, were introduced in 2011. Mike Bushell, now Butcher's engineer, in a Ford Focus was paired with Nic Hamilton's Audi in 2015, and last year Hollamby combined two Audis with ex-works MG6s. But with both the Audi and Honda using the standard Swindon-built engine, AmD only requires a single engine data engineer across all four cars, and both camps have benefited from the set-up data used by the other.

"Even though a lot of the parts on NGTC

cars are the same, the shell isn't, which affects aerodynamics, wheelbase and centre of gravity, but there are a lot of carryovers set-up-wise," explains Hollamby, who brought engineer Craig Porley across from Eurotech to assist Butcher and Tordoff.

"There are certain things that transfer from the Honda set-up to the Audis and from the Audi set-ups to the Hondas, which when we tested earlier this year we found beneficial. Even though they're different makes, it works well to have more cars."

NGTC regulations lend themselves to independent teams running multiple chassis in a way that many other motorsport disciplines don't, particularly

given the current single-seater landscape.

Rewind to the 2003 Indianapolis 500, and Penske team-mates Gil de Ferran and Helio Castroneves finished 1-2 in two very different chassis – a G-Force-Toyota GFO9 and Dallara-Toyota IR3, a consequence of having multiple chassis options available for teams to develop.

But that is no longer the case, with popular customer racing brands such as March, Ralt, Reynard, Van Diemen and Lola dying off or becoming the subject of mergers – Van Diemen and G-Force are now part of Elan Motorsport Technologies, which has not entered the upper echelons of the single-seater market since the ▶

“Dallara has carved out a position of near unchallenged dominance, giving teams no reason to look elsewhere”



De Ferran beat team-mate Castroneves (Dallara) to Indy 500 victory in 2003 with G-Force chassis

Panoz-badged DP09 it produced for Superleague Formula. This has allowed Dallara to carve out a position of near-unchallenged dominance, with Tatuus and Mygale its only viable competition.

Roly Vincini’s P1 Motorsport outfit found success in the single-make Formula Renault 3.5 championship, winning the 2008 title with Giedo van der Garde, after growing frustrated by the limited opportunities for small teams to take underdeveloped chassis and improve them to the point of bettering the ubiquitous Dallaras.

Vincini, who left British F3 after the Lola-Dome proved a disappointment in 2005, made his first foray into the championship in 1992 with a proven Reynard for Mikke Van Hool and a new Van Diemen RF92 for Jason Plato, but a lack of investment meant Plato struggled with a

soft rear end that made the car a handful.

“At that point 20 years ago, they were still cheap enough for the entrepreneur team owners to develop a car and take a risk, wanting to have a better car,” remembers Vincini. “The [RF92] wasn’t actually that bad, but it needed to be better and that was the problem. If it wasn’t better, why would you have it?”

“They didn’t want to spend the money on it, so we were stuck with a car that on occasion was competitive, but most of the time was incredibly difficult to drive. To beat the opposition, it takes more than just a designer – you’ve got to develop a car and that costs money.”

In 2002, Team Avanti owner Nigel Clyde attempted to develop a Ralt alongside a Dallara in British F3, but the ploy has rarely been seen in single-seaters since – and certainly not on the scale of one of

the most ambitious multi-chassis efforts in history.

Seven years before de Ferran’s triumph, at the first post-split Indy 500 in 1996, Team Scandia qualified a record seven cars, including three different chassis. The result of a merger between Andy Evans’ sportscar outfit and Indy veteran Dick Simon’s squad, Team Scandia had four 1995 Lolas for Eliseo Salazar, Michel Jourdain Jr, Alessandro Zampedri and Fermin Velez, two 1994 Lolas for Joe Gosek and Racine Gardner, and a 1995 Reynard – Jacques Villeneuve’s back-up car the year before – entered for Formula 1 veteran Michele Alboreto, making his one and only Indy start.

Unsurprisingly, Alboreto’s engineer and team technical director Jeff Braun recalls it being a chaotic effort, although ironically a rules freeze prohibiting 1996-spec Indycars meant the 1994 Lolas – which likely would not have made the field given the greater competition the year before – would still have a shot at making the race.

“Between what Dick Simon had and what Andy Evans bought, we had lots of Lolas,” says Braun, who today engineers IMSA squad CORE Autosport’s Nissan DPI. “Salazar and Jourdain were the primary Lolas and the other guys pretty much ran the set-up that they had – the older cars had a standard set-up, we couldn’t give as much attention to them as we wanted.

“That was in the day when they hoped they would have 33 cars that would actually start, so if you could go around for four laps then you were going to be in the race. It was less stressful because we didn’t have

Vincini’s attempts to develop the Van Diemen alongside his team’s Reynard in 1992 were hampered by budget



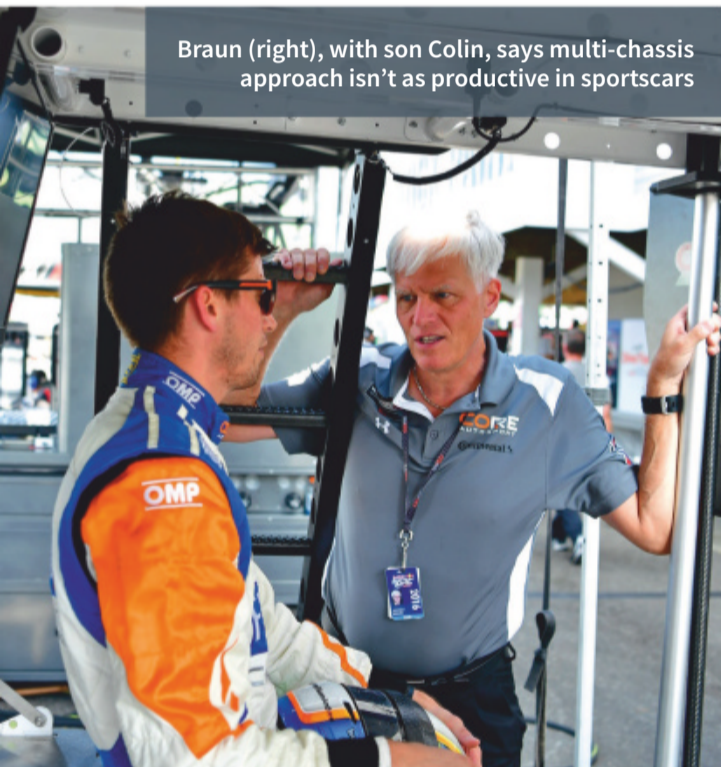
MOTORSPORT IMAGES/DOLE

Alboreto's Reynard was one of three different chassis entered by Scandia for the 1996 Indianapolis 500



FLORES
motorsport
IMAGES

Braun (right), with son Colin, says multi-chassis approach isn't as productive in sportscars



Comtoy has committed to supporting Cupra and Audi machinery in WTCR



GOODEN/DPPI

to extract the last little bit out of it.”

Meanwhile, Alboreto's Reynard was “figuratively and literally” split off from the Lolas in an adjoining garage area, as Braun strived not to be influenced by what the rest were doing. Those efforts were in vain, however, as Alboreto was halted by gearbox problems after 43 laps, prompting Braun to switch over to Zampedri. He led with 11 laps to go, but progressively worsening oversteer dropped him back to fourth.

“It's probably easier to run that sixth car technically because you have all the good information of the other five,” says Braun, “but it's far more difficult to find crewmen and data people and somebody to call the strategy you can count on for that sixth car, especially when they're not full-time.”

But that doesn't mean it's any easier to run four cars equally, without first having the groundwork in place.

Belgian squad Comtoy has expanded rapidly since it was formed in 2017 to run two Audis for Frederic Vervisch and Niels

Langeveld, and two Cupras for Aurelien Panis and Tom Coronel, as well as assist PWR Racing's pair of Cupras in WTCR. Team manager Francois Verbist admits that over the winter “nobody counted the working hours because it was a crazy time”, but is satisfied that its quartet is run equally with the support of the two Volkswagen Group brands.

“It would have been completely different if we were running two Hondas and Lynk & Cos,” he says. “Relations between us and both manufacturers are really good. Without their help, we would not be here. They have a different way of working but, in the end, we take every car as a potential winner and we treat all four cars the same.”

Braun is doubtful that a multi-chassis effort on the scale of 1996 will ever be repeated, with teams more likely to enter cars in different classes, as CORE does in IMSA with its two GTLM Porsches, than split its options in one class. The Nissan and Porsche camps share very little beyond

logistics, hotels, human resources and billing but, while the same tyres and same basic weights involved would make a hypothetical CORE Cadillac-Nissan DPi combination more relevant to Braun than the Porsche, he reasons that the arrangement would work in much the same way as now with very little crossover between the crews.

“I've never seen a data trace from a Porsche, I have no idea what shocks or springs they're running,” he says. “So two DPis, even if they happen to be different chassis and manufacturers, would still benefit each team somewhat, but as a technical person I would much rather have two Nissans because the information is then much better shared.”

But as AmD has proved, while motorsport's forgotten model may not be especially popular, it can still be highly effective. And if Hollamby's unorthodox approach continues to reap dividends, it might just give teams cause for a rethink. ■



THE PENSKE GENERAL THROTTLING BACK

Clive Howell is one of the major forces in establishing ‘The Penske Way’. His retirement after almost four decades at the team points to a changing of the guard

BY DAVID MALSHER

There was something different about Team Penske’s IndyCar team at the start of 2019, and it was hard to pinpoint at first. It wasn’t the performance of the cars on track – they remained fast, and the driver and primary sponsor line-up was the same as the year before. But if you studied the Penske garages hard between or during test sessions, it would eventually have dawned on any regular onlooker that there was a notable absentee. Where was that little moustachioed guy, the one who always looked busy, and seemed to avoid making eye contact with anyone not wearing Penske logos? Well, that man was general manager Clive Howell and, despite appearing to have stopped ageing soon after the age of 50, he was 63 when he retired at the end of the 2018 season. This year, for the first



Howell has had a lasting impact on Penske’s success

time since 1979, Roger Penske started a season without this Surrey, UK-born human dynamo in his ranks. Perhaps that explains why The Captain himself still speaks of Howell in the present tense. “Clive has been an important part of Team Penske for nearly four decades,” says Penske. “His work ethic, his focus and his attention to detail helped him stand out when he joined Penske Cars in England in the late ’70s. His leadership helped continue the growth of our IndyCar programme and his track record is remarkable – he was part of 15 Indianapolis 500 victories with Team Penske. Although he’s retired, Clive is still a big part of our team and he always will be.” Team president Tim Cindric adds: “Clive began his career when mechanics had to know how to make the cars and put them together. He truly helped establish ‘The

Marlboro M PENSKE

LEVITT
motorsport
IMAGES



Penske Way' of doing things."

Neither of their statements is surprising: it's easy to imagine Howell as a general leading troops into battle, winning, yet content to return without fanfare. Similarly his disciplined and zero-bullshit approach would also work wonders back at base. He is a man who commands respect.

Howell's businesslike approach to the business of motorsport – get on with the job and do it to the best of one's ability – means he tended not to regard one team member as more important than another, and he thus took a lot of convincing that he was worthy of a feature in Autosport. Finally, thankfully, he acquiesced...

Born in 1955, Howell left school aged 16 to serve an apprenticeship at the British Aircraft Corporation (which in 1977 merged with Hawker-Siddeley and Scottish Aviation to form British Aerospace) at

Brooklands, Surrey, and became a qualified toolmaker. But his mother was secretary at Motor Racing Developments, the company formed by Sir Jack Brabham and Ron Tauranac and bought by Bernie Ecclestone at the end of 1971 and, even while Clive had still been at school, she got him in at the ground level there, cleaning parts. When he left BAC, he joined Brabham as a junior mechanic.

"I joined when Gordon Murray was chief designer, Herbie Blash and Charlie Whiting were still there, and we were running the Alfa Romeo flat-12 engine," he says. "It was a bit of a disaster – the only real success was Gordon's fan car that Niki Lauda won with at Anderstorp – and before the end of the '79 season we'd bailed on Alfa and gone back to Cosworth.

"I was working on Nelson Piquet's car that year – he was quick as a rookie right

away, kept Niki on his toes, but that car never finished.

"Herbie wanted me to stay on as chief mechanic for 1980, but by then I'd had a call from Derrick Walker, who I'd overlapped with just for a short period at Brabham before he moved to Roger Penske's F1 team. When RP quit F1 and decided to focus on Indycars, Derrick went with him to America. So when I got a call from Derrick asking me if I'd be interested in working for Penske in the States, I thought about it in quite simple terms: I liked going to Watkins Glen, I liked going to Long Beach, but I didn't know anything about the big bit in between! So I thought, 'Yeah, I'll go for a couple of years, travel around America, see what it's all about.'

"So first I moved down to Penske UK, in Dorset, working under the tutelage of Nick Goozee and Geoff Ferris [designer] as a ▶



Howell was crew chief as Al Unser Sr (25) took his fourth Indy win in 1987

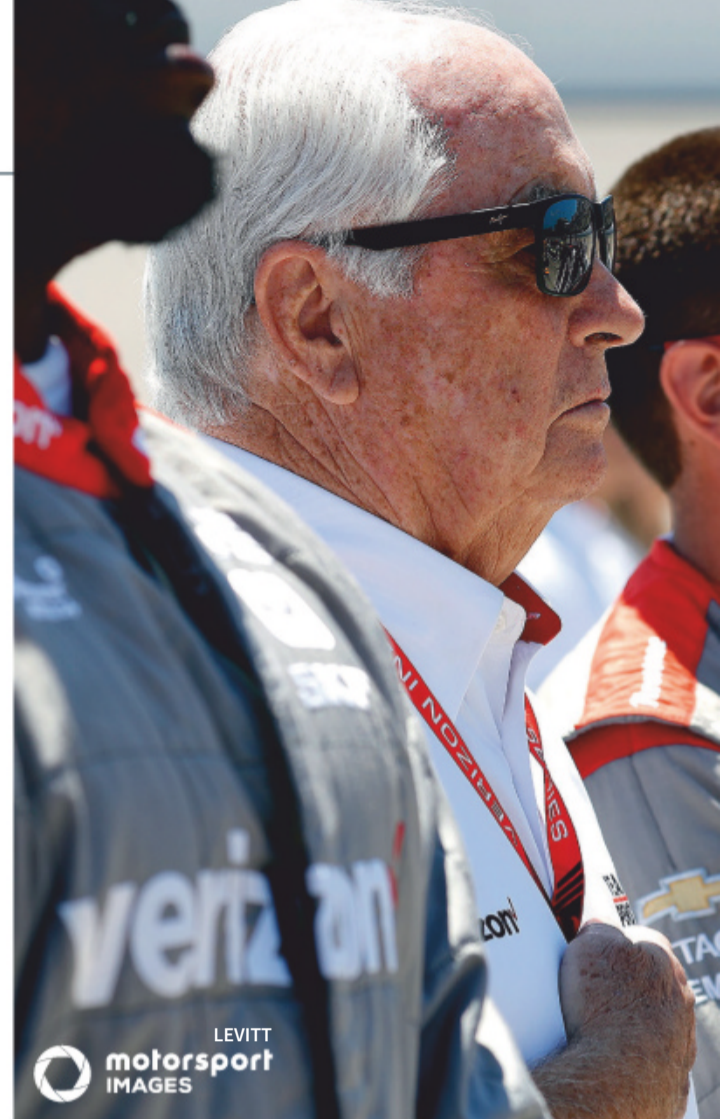
fabricator until the season started. Then I headed off to the States for 1980 as a mechanic on Bobby Unser's car and working out of Penske's base in Reading, Pennsylvania. I went back to the UK to work for Penske Cars in the off-season, returned to the US for '81, and then at Indy I met Mary, who'd become my wife. Bobby's wife of the time, Marsha, had introduced us, we'd been on a double date, and it went from there. Again I went back to the UK in the off-season but after that, I never worked there again and America became my home.

"I went from being mechanic for Bobby, to then leading the test team, working as crew chief on various cars, and ran the shop for a while. Then when Derrick left at the end of '87 to run the new Porsche team, there was a bit of a shake-up. Roger put

Chuck Sprague in charge and I was Chuck's right-hand man until he was put in charge of the Marlboro Racing School. I then ran the race team until the Tim Cindric era started [in 1999], and that's been good for everybody there; he's a very accomplished guy. And I enjoyed being team manager, and general manager and all the other things that went with it."

By anyone's standards, 39 years is an extraordinarily long time to stay at one team, and Howell says he could never have foreseen establishing such roots when he signed up.

"I knew some guys who'd gone to work for RP," he says, "and everyone told me he was a great guy to work for, it was a good environment and so on. But that's all I had: I mean, there are no guarantees in this business, are there?"



"But once I was in, I didn't want to be one of those people who bounced around from team to team. Some people do that and maybe earn a little more money but they also go into the off-season wondering where the next paycheck is coming from because they're looking for their next job. That wasn't for me. I like the security, and in this business working for Roger is about as close as you can get to a secure job."

Unsurprisingly, Howell doesn't like the



The loss of Gonzalo Rodriguez validated Howell's reluctance to get too close to drivers



Staying loyal to Penske has served Howell well

MOTORSPORT IMAGES/ABBOTT



Howell looks over data with Ryan Briscoe in 2012

“Working for Roger is about as close as you can get to a secure job”

way IndyCar has become spec in all but engine and shocks/dampers. For him, job satisfaction came from two directions. One was “doing the oddball stuff when we felt as an engineering team we could really make a difference. Running that pushrod 209ci Mercedes for Indy in 1994 was great fun, but it felt like Anderstorp ’78 with the Brabham fan car – we do the job, we win, and the authorities ban it right away!”

The second aspect he misses is the

innovation and problem-solving from engineers working directly with the drivers. He explains: “When I first came over, you could find big chunks of time through engineering. You’d have Bobby Unser dreaming up something, we’d be fabricating new underwings in the garage at midnight, and you’d be looking at it saying, ‘Yeah, that looks about right, let’s try that!’ The only proof you’d have was when it was on the racetrack, and Bobby

or Rick [Mears] would set a time and come in and tell you how it felt.

“Compare that to now, where your hands are almost completely tied because it’s all so spec. All you’re allowed to do is change the shocks and change the wicker: that’s not going to keep engineers happy. I mean, the guys running CFD [computational fluid dynamics] to get a read on the aero mapping probably gain satisfaction from that, but from what I’ve seen CFD is far too dependent on ideal-world scenarios, which rarely arise in the real world.”

The fact that doing things ‘The Penske Way’ has less influence on engineering an IndyCar these days reduced Howell’s love of racing, but it was a heartbreaking personal loss that brought his retirement forward a few years.

“Five years ago Mary died of cancer and that changed my outlook,” he says. “I decided that as soon as I was in a position to retire, I’d start doing the other stuff that I wanted to while I still can. I love touring on my motorbikes, and although I’d ridden up and down the east coast, I’d never done anything out west.

“I bought a toy-hauler – like a camper but with 10 foot of garage space out back for storing a bike – so I can drive out west of the Mississippi River, and even on to Texas, and then go touring on the bike.

“So that’s what you’ll find me doing a lot of the time now – making a trip or planning one.” ■

CLIVE HOWELL ON DRIVERS

Clive Howell, as an enthusiastic 22-year-old Brabham employee, was standing at the pitwall at Kyalami for the 1977 South African Grand Prix when Renzo Zorzi’s Shadow expired on the other side of the track, smoke wisping gently from its engine. A few feet away from Howell, two young marshals responded by running from the pitwall across the track. The one carrying the fire extinguisher, Frikkie Jansen van Vuuren, never made it. They were just beyond the brow of a hill and suddenly four cars appeared at 170mph; one was Zorzi’s team-mate, Tom Pryce, who struck van Vuuren and the extinguisher, the impact killing both driver and marshal.

This was one incident that would have persuaded Howell never to get too close to drivers. The one that convinced him he was right came in 1999 when cheery and talented Gonzalo Rodriguez was killed in a Penske at Laguna Seca.



Howell asserts: “Drivers are just commodities like the rest of us, they’re employees like the rest of us, they’re mortal like the rest of us. So they go in and out of your life according to contracts or death. So I’ve never wanted to get close with our drivers. Hanging out with them away from the track isn’t my idea of fun because drivers at this level are generally selfish bastards. I’m sure that’s what makes them fierce competitors, but it doesn’t make them congenial company.

“I liked calling the races for Paul Tracy at the start of his career, although he could be brutal. I liked spotting for Helio [Castroneves] – him and Gil de Ferran made a good team – and I liked working with Will [Power, above] because he was young and eager to learn ‘The Penske Way’, so if you told him to jump, he’d ask how high. But they’re working relationships, and that’s far as it needs to go.

“When [Juan Pablo] Montoya came to the team [in 2014], he was

the epitome of your typical race car driver. Tim Cindric had asked me to call the races for Juan and I said, ‘OK, if you can’t find anyone else.’ Well that lasted until Detroit [round six]. Juan ripped into us about something or other, and I think it’s important to maintain self-respect so I told him to go f**k himself.”

Brabham F1 drivers from the first stage of his career didn’t impress Howell much either.

“They all seemed a bit aloof from where I was standing, but that may have just been because I was new on the scene,” he says. “John Watson was a decent and polite guy but I can’t say I really knew him.

“The only driver who I’ve regarded as a friend is Rick [Mears]. We can hang out and talk about racing but also motorbikes, boats, remote control planes and so on. Maybe it’s because he’s the only top driver I’ve worked with who didn’t come across as a headcase in some way or other!”

THE BATHURST-WINNING ENGINEERS FINDING THEIR WAY IN IMSA

After scaling the heights of Mount Panorama, two top Supercars engineers are taking on a fresh challenge in sportscars

BY JAMES NEWBOLD

Bathurst 1000 victory is the biggest accolade an Australian Supercars engineer can have on their CV. For many, it's a career-defining moment, the culmination of years of striving to reach the top of the nation's most famous series and conquer its most prestigious race, all the while growing their understanding of what makes a car and driver tick.

So where do you go once you've scaled the heights of Mount Panorama? For John 'Irish' McGregor, who last year engineered Triple Eight veterans Craig Lowndes and Steven Richards to their seventh and fifth Bathurst victories respectively, and Dr Geoff Slater, the chief engineer at Tekno Autosports when Will Davison and Jonathon Webb earned the spoils in 2016, the answer to that question was identical.

Both have broadened their horizons and taken on the challenge of the IMSA SportsCar Championship's tightly contested GTLM class, which makes up for what it lacks in car count with factory entries from Ford, Corvette, Porsche and BMW. McGregor didn't take long to make an impression, engineering the championship-leading #912 Porsche 911 RSR of Earl Bamber and Laurens Vanthoor to back-to-back wins at Long Beach and Mid-Ohio, while Slater runs the #24 BMW Team RLL M6 of Jesse Krohn and John Edwards that finished fourth at Sebring.

Slater, who has a PhD in mechanical engineering from his home-town university of Wollongong, New South

Wales after completing a thesis on welding fume dispersion, actually has two Bathurst wins on his CV. Earlier in 2016, he had engineered Tekno's McLaren 650s GT3 in which Shane van Gisbergen, Alvaro Parente and Webb dominated the Bathurst 12 Hour, giving him a unique double that went some way to making up for losing out on victory in the 1000 to a starter-motor failure 11 laps from home in 2014.

"I don't think words can sum it up," he says of the 2016 double. "It was very stressful, I still lie awake at night wondering how we did it."

Despite the potential doors in academia that a doctorate could open, Slater's passion for the sport meant that was not an option and has been a driving force throughout his career. Swapping several different hats, he engineered van Gisbergen's single-car Tekno entry to five wins and second overall in 2014, a preciously rare feat in Supercars.

"I always wanted to be a driver, but the next best thing is telling a driver what to do, so I took up engineering," he says.

But Slater's academic prowess didn't guarantee that people would listen to him, and it wasn't until he gained hands-on experience as one of two engineers working with 1998 Bathurst enduro winner Jason Bright at the start-up Britek team that he won the respect of his peers.

"It's strange – in motorsport you need both the academic side and the

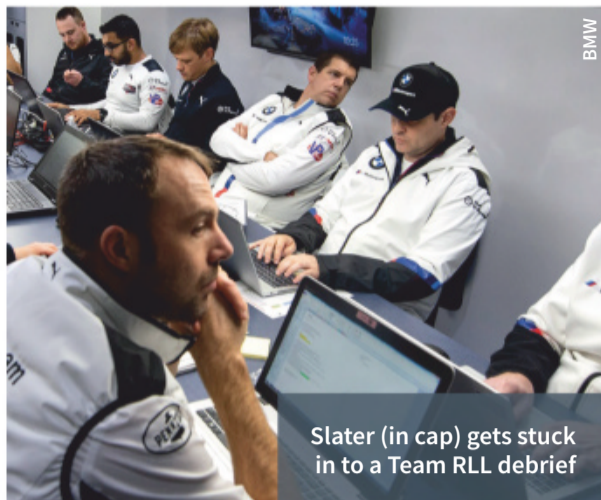


MAIN PIC: SAM COBB



Davison and Webb caused an upset with Bathurst 2016 win





Slater (in cap) gets stuck in to a Team RLL debrief



McGregor downloads with Vanthoor at Sebring

experience,” he says. “The experience counts a lot more than what you’ve learned from a textbook, but having both is great. If you’ve got the experience and the knowledge, people will listen to you more. Just having the knowledge, you have to prove yourself – motorsport still has a very old-school mentality.

“I started as a data engineer so I immersed myself in that, then did the race engineering, built the dampers and learned everything, which gave me the experience I could take on. With

we took everything in the back of a Transit van” – McGregor found Roland Dane’s multiple championship-winning team a considerable step up in professionalism.

The 31-year-old admits that 2017, in which Lowndes finished outside the top four for the first time since 2004 and didn’t win a race, was “much harder than I anticipated” as he learned to cope with management responsibilities, but is now much more confident for the experience.

“It’s OK when everything is going smoothly, but when it’s not you’ve got a tyre man and three mechanics and a team manager and a boss like Roland

“If I ever made a mistake, we made a mistake together and the same with him”

Jason, a textbook would say one thing but the driver would say what it actually meant, so it was good to learn from him what the changes affected.”

Northern Irishman McGregor had a similar experience after succeeding Jeromy Moore – now a Porsche development engineer – and being promoted from Lowndes’ data engineer to race engineer in 2017.

Having made his start on two wheels with Nutt Racing in British Supersport, before relocating to Sydney to engineer for Australian GT squad Simply Sports Cars – “a very small garage-run set-up,

Dane all looking at you,” says McGregor. “When I first talked to Roland about taking on Craig, he said, ‘Look, he’s so well known that you’ll either do really badly and never get a job again, or you’ll do OK and things will open up for you’. He was quite frank about it!

“Craig in his last couple of years and me in my first couple of years, it couldn’t have gone better. The two of us got along like a house on fire and he was very respectful. If I ever made a mistake, we made a mistake together and the same with him. It worked well, and from there you gain the respect of other people. ▶



McGregor engineered Richards and Lowndes to Bathurst win last year



A reliable, responsive heat treatment service to keep your production schedule on track.

By continually investing in the latest technology and processing techniques, we can work with you as your requirements evolve.

High Vacuum processing with optional high-pressure quench (Ar / N2) now available.

We process these materials and many more:

- Inconel
- Titanium
- Tool steels
- Stainless
- Aluminium
- Some Composites

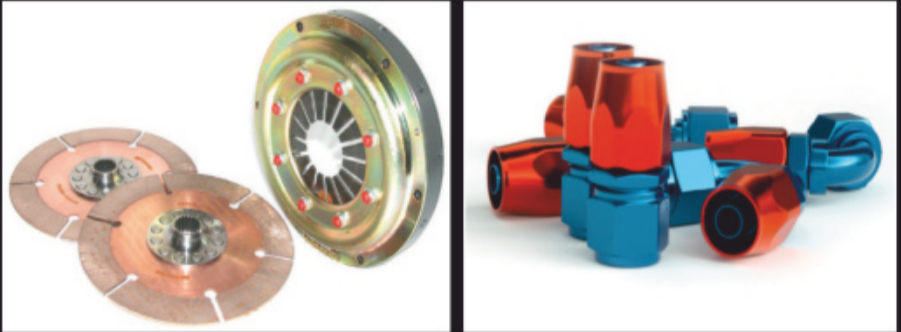
Tamworth Heat Treatment Ltd
7 Darwell Park, Tamworth.
Staffordshire, UK.
B77 4DR

sales@tamworth-heat.co.uk
www.tamworth-heat.co.uk
+44 (0) 1827 318 030



RACEPARTS

**WORLDWIDE SUPPLIERS
OF MOTOR RACING
COMPONENTS**



3 Rockfort, Wallingford, Oxon, OX10 9DA
Tel: +44 (0) 1491 822000
e-mail: sales@raceparts.co.uk

www.race.parts

QUESTMEAD LTD
Competition Friction Specialists

The Lodge, Meadowcroft Mill,
Off Bury Road, Bamford,
Rochdale, Lancashire,
OL11 4AU, United Kingdom.

sales: +44 (0) 1706 363939
email: sales@questmead.co.uk
web: www.questmead.co.uk
social: search Questmead



Questmead Ltd sell quality products and provide unrivalled services to the motorsport industry. Look out for our vans at your event or contact us with your requirements.



“I still have so much to learn, but coming to IMSA gives you a bit of confidence too because, even though these guys are operating at a very high level, I don’t feel like I’m too far behind the 8-ball.”

Slater, well known to Triple Eight due to Tekno’s customer relationship with Dane’s squad, was drafted in to support McGregor at Bathurst in 2017 but, although they see each other “all the time – it’s like seeing a friendly face”, McGregor has so far resisted the temptation to cross into enemy territory and compare notes.

“It wouldn’t help anyway,” he says. “The cars are different between the teams, at least [compared to] a Supercar, where you probably could help if you wanted to, but now it’s all completely different.”

McGregor’s adaptation to IMSA has been smoothed by working with Bamber – who he knew already from his endurance outings with Triple Eight alongside van Gisbergen – but, despite the respect the Bathurst win confers, he cannot afford to trade on past successes.

As well as mastering how the mid-rear-engined 911 works compared to a front-engined V8 brute, he also has to get to grips with the vagaries of multi-class racing on an all-new collection of tracks and race formats, ranging from 24 hours at Daytona to the 100-minute blast around the streets of Long Beach, as well as a completely different ruleset. While the endurance format of Bathurst or Sandown is loosely comparable, McGregor is quick to point out that’s largely where the similarities end.

“The rules dictate a little bit of difference, like the fact that when the safety car comes out, the pits are closed – one of the biggest things [in Supercars] was double-stacking, but here you’ve got a separate crew and a separate boom, so having to split strategies is not as important,” he says.

“The longest race we had in the year was Bathurst, which is only six hours. I wish we could go back and do it again because it used to seem like it took forever. Well, the last two stints last year took forever...”

Lowndes’ final victory as a Supercars full-timer was far from straightforward,



McGregor’s Porsche heads Slater’s BMW at Mid-Ohio

“I still have so much to learn, but coming to IMSA gives you a bit of confidence too”

with steering problems hampering his practice, and a cool-suit failure in the race.

“He just did it old-school and brought it home,” says McGregor with a grin. “It is a special track for Craig, that weekend he really zones in, he’s very good there.”

It was McGregor’s close links with his predecessor Moore that helped him choose a new direction when, in the wake of Lowndes’ retirement, Triple Eight decided to scale back to two cars.

“I thought, ‘It’s a good time’,” he says. “I was looking to do something different and also to go back to Europe to spend more time with family and friends, so it all coincided at the one time.”

Slater admits he found the winter in Ohio where RLL’s BMW shop is based something of a culture shock, but has no regrets on his decision to head Stateside. Having departed Tekno at the end of 2016 to gain more experience in GT racing with Scott Taylor Motorsport and help develop young drivers at Super2 squad Kostecki

Brothers Racing, he regarded RLL as the next natural step.

“I just wanted to branch out,” says Slater. “As an engineer, you always want to improve yourself and I thought that there was a better way to do that than just staying in an old routine. I also wanted to do more overseas, which has led me to where I am now.”

Although he is yet to get off the mark, Slater has already notched up a professional highlight, engineering Daytona debutant Alex Zanardi. Despite the foul conditions, which caused the race to be halted prematurely after 22 hours, the experience was one he cherishes.

“Working with Alex was great, the stories he told and learning from him as he drove the car,” says Slater. “He pushes himself and the team to do the best that they can. He’s not ultra-demanding in the sense of a prima donna driver, but he knows what he wants. He was complimentary when we did something right and obviously if something was wrong he called us up on it!”

It’s still early days in the season and there will be many lessons ahead for the expat engineers, but there’s plenty for both to look forward to – not least for McGregor’s reduced travel schedule.

“I wasn’t planning on travelling between America and Australia for the first six months of the year,” he laughs. “But it was an opportunity I couldn’t turn down, so I’ve just been dealing with jet lag for about four months!”

Such are the sacrifices involved in chasing the dream. But if the #912 is still atop the points standings come the chequered flag at IMSA’s Petit Le Mans finale, it will certainly be worth it. ■



Slater achieved Bathurst double in 2016 but wanted new challenges

HOW MOTORSPORT EDUCATION IS MAKING ITS MARK

Motorsport-centric education is on the rise, and students at the Universities of Wolverhampton and Cranfield are reaping the benefits from their industry links

BY JAMES NEWBOLD

It doesn't take a genius to think of a few oft-repeated stereotypes about students. In the tabloids, they are lambasted for being just as likely to be found in bed until mid-afternoon as swotting up in the library and reluctant to take on any real-world responsibilities, to name but two. In some cases such generalisations might be true, but try telling that to the group of University of Wolverhampton Motorsport Engineering undergraduates beavering away on an ex-Fortec Dallara F308 Mugen at the opening round of the F3 Cup series for pre-2017 single-seaters.

Their main competition may be professional outfit Chris Dittman Racing running a much newer F311-spec machine, but the University of Wolverhampton Racing outfit – 70% of which is made up of enthusiastic first-year students, some working on a racing car for the very first time – came away from the Donington Park season opener with a trio of second places in class. Mission accomplished.

Over the past decade, higher-education establishments at undergraduate and postgraduate level offering courses specifically dedicated to motorsport have become increasingly common, with some – such as the University of Bolton's programme that allowed student technicians to work on Century

Motorsport's Ginetta in British GT – commanding a higher profile than others.

This new wave of courses has had its detractors, especially among the older generation, which only knows 'the school of hard knocks' and views well-educated graduates with suspicion, either for being too raw or too specialised to contribute in a broader sense. Fortunately, times are changing, and as more motorsport graduates prove themselves it confers legitimacy on the establishments and academics they learned from. While all experience can be beneficial, it can always be bolstered by a well-structured programme that develops a good base of understanding through theoretical and hands-on practice.

With its mix of students straight from A-levels and mature students seeking to retrain, the UWR F3 awning is a hive of activity as final pre-race set-up tweaks and component checks are completed. But there's more to the F3 programme, set up to complement the university's Formula Student scheme in 2015 by Motorsport Engineering and Automotive Engineering principal lecturer David Tucker, than bolting bits together and following an instructional manual. For starters, there isn't one.

Mentored by UWR driver Shane Kelly and senior engineering technician Matt Fenton at the track and back at the workshop – Telford, the birthplace of industry, makes for an appropriate location – students are encouraged to push the boundaries of the F3 Cup's regulations and use the full extent of technologies at their disposal, including CFD modelling and additive layer manufacturing (ALM). New components are then tested in the windtunnel and the metrology lab to develop skills crucial for industry, but students are also given a chance to fail – after all, it's much easier to make a car slower than make it faster – and then to rectify the problem.

"The first thing I noticed on coming here was that the Institute has an incredible capacity to manufacture, but it didn't have a purpose for manufacturing," explains ▶



UWR technician Fenton supervises a student

WALKER



HOLBON



UWR's Shane Kelly presses on at Donington

WALKER



HOLBON

Kelly and the MTA's Josh Dugdale in conversation

Second-year student Dan Bird has taken on the role of UWR's lead student engineer on the F3 programme



MOTORSPORT IMAGES/ETHERINGTON

Cranfield alumnus Vowles has found success in F1



HOLBON

Temple shows off Cranfield's off-road environment simulator (ORES)

Tucker. “I started the race team to give an outlet for all the manufacturing we do and that gives us the ability to go from a conceptual design phase to on-track testing and anywhere in-between.

“It’s about providing a roundness to the education, including the technical theory in the classroom environment, the mathematics and the physics to aid with aerodynamics, but equally there is a hands-on requirement that’s often missing from a classroom environment, so getting that practicality element is critical.”

This philosophy is similar to that held by Cranfield University, a post-graduate-only establishment focused on technology and management that is constantly engaged with industry by necessity, since it cannot rely on undergraduate income. Topics of study on the Masters in Advanced Motorsport Engineering course – which counts Mercedes chief strategist James Vowles and FIA circuit and rally safety head Stuart Robertson among its first intake in 2000 – are by nature more specialist than those covered on the UG programme at Wolverhampton, but the same need for practicality applies.

Students are given access to the same cutting-edge resources used by OEMs and Formula 1 teams, which include Cranfield’s

“We’re using those assets in the context of our teaching so students have a practical dimension”

FIA-accredited Impact Centre – one of only two in Europe – for testing composite structures, a four-wheel dynamometer used for simulating vehicles in off-road environments (ORES) complete with an articulated floor to replicate elevation changes, and an autonomous vehicle test track (MUEAVI), among others.

“We’re using those assets in the context of delivering our teaching, so students have a practical dimension,” explains Cranfield MSc programme director and senior lecturer Clive Temple. “It’s not just the theory, we run sessions where students go down to Shrivenham and have a session on the four-post shaker rig, they use the windtunnels in the context of the aerodynamics teaching and use FLUENT, which is an industry standard, on our high-performance computing network

to ape what they do in motorsport.”

A lifelong motorsport enthusiast since he watched Jim Clark at work at the 1962 Daily Express Trophy as a young boy, Temple has a keen appreciation for the needs of students today and is backed up by an advisory board, currently chaired by single-seater designer and Cranfield alumnus Adrian Reynard. F1’s Pat Symonds and composites expert Brian O’Rourke – at Williams from 1982 until last year – are also on the board and give semi-regular guest lectures to further underscore the connection to industry.

“When we embarked on developing education specifically for motorsport at Master’s level, we did that with the knowledge that we were already engaged with a lot of motorsport companies,” explains Temple, an active historic racer.

“We put the programme together with the view that an individual would have a broader understanding from the modules. But then by specialising within the context of the group design project and then going much further with their thesis project, they could develop their understanding of powertrains, for example, but still also have an appreciation of structures, materials and all those considerations.”

Cranfield students are given license to choose their own thesis projects, within reason, and encouraged to contribute research to challenges facing the motorsport industry. Some are currently working with Liberty’s engine group, led by former Cosworth man Nick Hayes, on future F1 powertrain regulations for 2025 and beyond.

They are then assigned into groups for a project that Temple describes as “almost impossible but possible”, which is intended to help students develop collaborative habits they can carry into industry. This year’s challenge is to produce a cost-no-object yet feasible design concept for a hybrid F2 sidecar running on LPG, opening students’ eyes to a world beyond F1.

“We try to help them understand that, while some will be specialising on the powertrain aspects of the group design project and others on vehicle dynamics, they have to communicate regularly,” says Temple, “so that their way of thinking is



Cranfield students developed the autonomous Mustang demonstrated at Goodwood last year

JEP motorsport IMAGES



Lyll advises Wolverhampton students on ALM best practice

for the good of the team rather than an individual ending up in a cul-de-sac.”

That collaboration is also evident in Wolverhampton School of Engineering’s advanced manufacturing suite, with Fenton and Innovative Product Development consultant Iain Lyall passing on best practice. Lyall, himself a Wolverhampton graduate, has been instrumental in positioning the university as a frontline force in ALM that creates parts to short turnarounds for use in the top echelons of motorsport, including F1.

“It trains us as university employees to work within the real world and we can pass that on to the students,” Lyall says. “The students believe in us as academics that we know what we’re talking about and they buy into that, which not only helps them to get their degree but it also pitches them at a very high level because they can talk the talk – they’ve done it.”

One of those to benefit is second-year student Dan Bird, the head student engineer on UWR’s F3 team, who cast strakes for the underside of the front wing using carbonfibre. As well as channelling air more effectively, they are designed to break away in the event of an impact.

“They’re applying what they’re learning in the classroom for a project which they’re then using on the car, so they’re gaining experience in running a car professionally in industry but also backing up the theory that they’re learning in the classroom,” says Fenton. “It gives them the experience they need to almost go straight into a job.”

Both Wolverhampton and Cranfield are members of the Manufacturing Technologies Association (MTA), which works in standards and legislation for the manufacturing and technology sector, and fosters links between OEMs and universities that keep academics abreast of the latest developments in manufacturing.

“We’re thrilled to be working with the MTA because having that one-stop shop, that takes us to see so many other people, regardless of where they are in the supply chain, means we’re fully aware of how the wider world is working and where our place can be in it,” says Wolverhampton development manager Terry Gibson.

“Motorsport isn’t one thing and manufacturing isn’t one thing, so

THE ALUMNUS’S TALE

Having cut his teeth at GP3 team Status Grand Prix while writing his thesis on lap time simulation, Gustavo Beteli’s stock has risen rapidly. After graduating from his MSc in Motorsport Engineering and Management at Cranfield in 2012, the Sao Paulo native built experience in single-seaters before moving to sportscars, first with JRM and then Aston Martin Racing, becoming its lead engineer in 2017.

He currently runs the #97 GTE Pro Vantage of Alex Lynn and Maxime Martin in the World Endurance Championship, attends all tests – where he looks after

all lap time simulations – and supports Aston’s GT3 customers.

“I spend over 100 days per year at race tracks – that’s what I wanted to do, so I’m not complaining!” he says.

Beteli chose Cranfield for its industry links – “it’s not only what you learn, but you need to leave with a job, otherwise there’s no point” – and enjoyed the academic nature of the course, which built on his undergraduate degree in mechanical engineering from the Centro Universitario da FEI in Brazil.

A two-hour lecture given by Pat Symonds about tyres was a highlight, but there was a practical dimension to the course too – the 2012 cohort’s group design project concerned the development of a hybrid system complete with energy recovery for a Formula Ford. Within his group, Beteli was assigned to developing an electric motor attached to the turbo, similar to the MGU-K used in F1, although the technology available then was limited.

“It was good fun to try to create something that would fit in a Formula Ford that would be viable as well,” Beteli recalls. “We didn’t have to physically purchase the parts, but we had to design something that would package and simulate it because you’re increasing performance but also the mass.

“There’s not much help in a sense, you just need to do it. It’s like when you leave university and get a job, you just need to get on with the work.”

Beteli engineered #97 to victory at Spa



NICK DUNGAN

we want to give our students the widest opportunity to pick and choose what they want to be involved in. But it’s also about giving manufacturers at the SME level the opportunity to pick the brains of academics and hopefully assist with their issues.”

This is especially important because manufacturing technology underpins the motorsport and automotive sectors and far beyond, as the MTA’s technology manager Josh Dugdale explains: “The manufacturing technology sector is key to every other sector being able to function; if you’ve got a great concept but you can’t manufacture it, you’re going to be stuck.

“At the top level of motorsport, there’s a constant evolution of the cars and we need the manufacturing technology to keep up with that. We’re keen to get that message out so students are aware of the latest technology and can learn on the relevant equipment so they’ve got the skills needed by the industry.”

No university establishment can credibly guarantee employment – that will boil down to the individual and how well they come across in an application. But if students are critical in their appraisal of courses (basing their decision on whether the university has a strong record of working with industry practitioners), proactively seek opportunities to gain more experience and can demonstrate a logical process for solving problems in an interview scenario, they will be well placed for success in the job market.

On Tucker’s part, success on track with the UWR F3 team is always welcome validation of his efforts, but that of itself isn’t the biggest priority.

“The end goal for us is graduates who can work effectively within a team,” he says. “You have to be flexible, adaptable, reliable, and that’s not necessarily something you can teach. But you have to be able to offer experience towards it.” ■

HOW TO BE AN ACE ENGINEER

Brian Lises recalls working for two giants of motorsport, Ken Tyrrell and Carl Haas

BY JAMES NEWBOLD

Loyalty is a rare trait in the cut-throat world of motorsport. But in a career that started in 1977 and only finished when the lights at Newman/Haas Racing were finally turned off for good in 2015, Englishman Brian Lises worked for just two teams, both run by no-nonsense titans of the sport – Ken Tyrrell and Carl Haas.

Having gained experience in Clubmans racing while a student at Loughborough in the 1960s, Lises continued to design and construct his own series of Clubmans cars while working at Chrysler UK and British Steel, before landing at Tyrrell. It was the start of the post-Derek Gardener era and Lises quickly got stuck in, his varied roles including chief designer and race engineer.

He soon won the trust of team patriarch Tyrrell, whose honesty and integrity won loyalty from his employees despite the lure of a better wage at nearby McLaren.

“He always paid his bills regardless of his circumstances and never hung anyone out to dry,” says 73-year-old Lises. “It was the same with Carl. He was honest, always paid on the dot, his word was his bond. I was lucky to work for men with such integrity.”

Despite still using the venerable Ford DFV engine, Tyrrell remained a competitive force into the 1980s. Lises engineered Michele Alboreto to Tyrrell’s first win in four years at Las Vegas in 1982, and repeated the feat the following year at Detroit. But by 1988, the team’s lack of budget was beginning to tell, as Jonathan Palmer and Julian Bailey sometimes failed to qualify. At the request of his homesick



Lises compares notes with Michele Alboreto at Tyrrell

PHIPPS
motorsport
IMAGES

American wife, Lises departed for NHR in 1989 to engineer Mario Andretti.

He had no oval experience, so his first race at Phoenix was an eye-opener – “all I did was carry the stopwatch!” – but he soon got to grips with the minute details required and formed a good partnership with Michael Andretti, winning the title together in 1991.

“Mario’s talent is well-documented, but Michael was a huge talent, one of the most under-appreciated of the lot,” Lises says. “He was an unstoppable force in a race.”

Lises became NHR’s general manager in 2000 and, after Cristiano da Matta swept to the CART title in 2002, he implemented the increasingly systematic event preparations and post-race summaries that helped NHR stay on top, as Reynard’s collapse prompted all teams to switch to Lola. He took pride in the team generating its own engineering talent and Craig Hampson’s rise through the organisation from data engineer to race engineering Sebastien Bourdais to four titles between 2004 and 2007 reinforced

his mantra that “everybody is crucial”.

“If they do their job well, everybody can in some way make the car and therefore the team better,” he explains. “Not necessarily in terms of points of downforce, but in the smooth running of the team so you don’t have any failures, everybody gets to bed on time and is in better shape the next day.”

Following the Champ Car-IndyCar merger in 2008, NHR won first time out at St Petersburg with Graham Rahal, and Justin Wilson added a second victory that year in Detroit. But when Newman lost his fight with cancer one month later, it was the beginning of the end. Amid increasing sponsorship struggles, NHR fought on until Haas pulled the plug at the end of 2011. Lises stayed behind with a skeleton crew restoring the Haas collection and, after 26 years of service, retired in 2015.

“I used to say to the guys, ‘I know I’ve done my job well when you don’t need me’,” he says. “When everything runs smoothly, the manager can step away and it wouldn’t make any difference.” ■



Justin Wilson took final NHR win at Detroit in 2008

MOTORSPORT IMAGES/SUTTON

TOP TIPS FOR ENGINEERS

- Nearly all our hires out of college at NHR had Formula Student on their CV – it gave them practical experience and demonstrated their initiative.
- Trackside engineering isn’t for everyone. Some people don’t like being away that much, but you need to find that out for yourself.
- Sometimes a valid criticism comes from unexpected sources because they look at it in a totally different way, so always have an open mind.

MACH 2020

THE EVENT FOR INSPIRING, INNOVATING AND **CONNECTING** MANUFACTURING

Taking place from **20-24 April 2020**, MACH will be the event to connect the world of manufacturing technologies and be the destination of choice for manufacturing engineers, decision makers, buyers and specifiers looking to discover new technology, adopt and invest in the digital revolution.

Be **part** of it...

TO **BOOK** YOUR SPACE AT MACH 2020,
PLEASE CONTACT THE SALES TEAM:

020 7298 6400



The Manufacturing Technologies
Association

Join in the conversation
@MACHexhibition
#MACH2020



MACH
20-24 April **2020**
NEC Birmingham UK
machexhibition.com