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VETTEL **MY FERRARI** **MISSION IS** **NOT OVER**

Four-time champion tells us he's still targeting title number five despite new challenges

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Has Vettel got one more title push left in him?

In the run-up to the Australian Grand Prix, we were fortunate to speak to Ferrari's Sebastian Vettel. That race event, just like the rest of the world, was soon overwhelmed by the coronavirus pandemic, but much of what Vettel said will still be relevant when – eventually – racing restarts, and we have chosen to focus on that this week.

Given all the recent errors and his struggles against upcoming star Charles Leclerc, it's easy to forget that Vettel is one of the sport's greats. Yes, he had Adrian Newey Red Bulls at his disposal for his four Formula 1 world titles, but he was hardly the first top driver to have a car advantage and he used it well, particularly when it came to the machines of the blown-diffuser era.

As Alex Kalinauckas reminds us on page 18, the German has also starred in red. It's *likely* that Vettel has already had his best chance to take the crown with Ferrari. He's also shown an interest and understanding of the wider world that can sometimes be a prelude to retirement from racing, but it's clear Vettel doesn't feel ready for that *just yet*. Rekindling some of his old magic would be a great reminder to everyone how special he can be. And be good for F1.

Keke Rosberg was a driver with incredible resilience. This week we also take you back to 1982, when the recently crowned world champion was typically forthright in an interview with Nigel Roebuck (p38).



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FREE INSIDE

ENGINEERING SUPPLEMENT



Switching from Formula 1 to Formula E, the threat of COVID-19 to motorsport, and Ray Mallock feature in this issue.



MERCEDES FAST-TRACKS COVID

FORMULA 1

Engineers from the Mercedes Formula 1 team have helped fast-track the design of a breathing aid to assist COVID-19 patients, and it has now been approved for use by the NHS.

As the impact of coronavirus continues to be felt around the world, F1 teams have diverted their engineering capabilities towards helping manufacture medical devices through the 'Project Pitlane' scheme.

Mercedes has been working with engineers at University College London to develop Continuous Positive Airway Pressure machines – known as CPAP – that are already widely used in Italy and China.

A group of engineers from the Mercedes F1 engine division – High Performance Powertrains – and UCL Mechanical Engineering first met on 18 March at the university's Bloomsbury campus to try to reverse-engineer a device that could be produced rapidly.

A first device had been made within 100 hours of the engineers coming together, after round-the-clock work. The device received approval from the Medicines and Healthcare Products Regulatory Agency within 10 days, paving the way for NHS usage.

One hundred devices have been delivered to University College Hospital for clinical trials before rapid roll-out across the country ahead of an anticipated surge in COVID-19 hospital admissions.

"The Formula 1 community has shown an impressive response to the call for support, coming together in the Project Pitlane collective to support the national need at this time across a number of different projects," said Mercedes F1 engine chief Andy Cowell.

"We have been proud to put our resources at the service of UCL to deliver the CPAP project to the highest standards and in the fastest possible timeframe."

Six-time world champion Lewis Hamilton wrote on Instagram that he was "so proud" of the Mercedes team for its role in the project.

Prof Tim Baker of UCL Mechanical Engineering explained that the group had been able to reduce a process that could take years down to "a matter of days".

"From being given the brief, we worked all hours of the day, disassembling and analysing an off-patent device," he said.

"IT SHOWS WHAT CAN BE DONE WHEN WE JOIN FORCES FOR THE NATIONAL GOOD"

"Using computer simulations, we improved the device further to create a state-of-the-art version suited to mass production. We were privileged to be able to call on the capability of Formula 1 – a collaboration made possible by the close links between UCL Mechanical Engineering and HPP."

The CPAP device helps COVID-19 patients suffering from serious lung infections breathe more easily and can keep them move out of intensive care, easing some of the strain on the medical services.

CPAP works by pushing a mix of air and oxygen into the mouth and nose at a continuous rate, helping to keep the airways open and increase the amount of oxygen that enters the lungs.



First device made with Mercedes' help within 100 hours and approved for NHS use in only 10 days

BREATHING AID

According to UCL, reports in Italy have shown that 50% of patients avoided the need for invasive mechanical ventilation after using CPAP, but devices are on a short supply in the UK.

Prof David Lomas, UCL Vice Provost Health, said the breakthrough “has the potential to save many lives and allow our frontline NHS staff to keep patients off ventilators.

“I would like to pay tribute to the incredible team of engineers and clinicians at UCL, HPP and UCLH, for working round-the-clock to develop this new prototype. It is, quite simply, a wonderful achievement to have gone from first meeting to regulator approval in just 10 days. It shows what can be done when universities, industry and hospitals join forces for the national good.”

All seven UK-based F1 teams have committed to produce more ventilators for the health services. The teams are part of a consortium known as ‘Ventilator Challenge UK’ that also includes engineering giants such as Airbus, Rolls-Royce, BAE Systems and Ford.

The UK is predicted to need 30,000 ventilators for the height of the COVID-19 outbreak, but currently has only 8000 in circulation, with a further 8000 on order from international suppliers. The British government has placed an order for 10,000 ventilators with the consortium, which is set to begin production this week.

Consortium chief Dick Elsy said the group was “working together with incredible determination and energy to scale up production of much-needed ventilators and combat a virus that is affecting people in many countries. I am confident this consortium has the skills and tools to make a difference and save lives.”

LUKE SMITH



The traditional May race has been pushed back to 23 August

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Coronavirus delays Indy 500 until August

INDYCAR

The 2020 edition of the Indianapolis 500 will now be postponed to 23 August, as IndyCar continues to push back events amid the coronavirus pandemic.

IndyCar’s blue-riband event will move from its original date of 24 May, while the Grand Prix of Indianapolis – which takes place on the Indianapolis Motor Speedway’s road course – will move to 4 July, meaning it will now form a double-header with NASCAR, whose inaugural Xfinity Series race on the circuit will follow the same day.

“The Month of May at the Indianapolis Motor Speedway is my favourite time of year, and like our fans I am disappointed that we have had to reschedule the Indianapolis 500,” said Roger Penske, whose Penske Entertainment group now owns the IMS and the IndyCar Series.

“However, the health and safety of our event participants and spectators is our top priority, and we believe that postponing the event is the responsible decision with the conditions and restrictions we are facing.

“We will continue to focus on ways we can enhance the customer experience in the months ahead, and I’m confident we will welcome fans with a transformed facility and a global spectacle when we run the world’s greatest race.”

Penske Entertainment Corp

president and CEO Mark Miles added: “Memorial Day weekend has always provided Indianapolis 500 fans an opportunity to honour the men and women who have fought and sacrificed for our nation’s freedom.

“This August, we’ll also have a unique and powerful opportunity to honour the contributions and heroism of the doctors, nurses, first responders and National Guard members serving on the front lines of the fight against COVID-19.”

On-track action in August will begin at IMS with practice sessions on 12-13 August, followed by the traditional ‘Fast Friday’ session on 14 August and the qualifying sessions on the following two days.

As a result of the schedule changes at IMS, the races set for 16 August and 22 August have been rescheduled; the round at Mid-Ohio is now scheduled for 9 August, and the oval race at Gateway is now due to take place on 30 August.

Miles has also said that he is hopeful that the delayed season can begin in May. The double-header event in Detroit is scheduled to go ahead across 29-31 May.

There could also be a surprise reinstatement of St Petersburg as the season finale. The street/runway course serves as the traditional IndyCar opener, but was cancelled soon after practice for its support races began.

DAVID MALSHER-LOPEZ

Red Bull storms into Le Mans Esports lead

LE MANS ESPORTS

Red Bull Esports took the lead in the 2019-20 Le Mans Esports Series Pro Team standings with a brace of second places in the penultimate round at Sebring.

Igor Rodrigues (Fast Racers Forza) and Shaun Arnold (Total Performance Racing) picked up their first wins of the season, but it was Red Bull's Aurelien 'Laige' Mallet who took the spoils by dislodging pre-event leader Lazarus Esports from top spot.

The LMES Pro Team series is a 16-team invitational championship that consists of five rounds, with the top six in the points booking their place in the 2020 Super Final – held at the 2020 Le Mans 24 Hours.

Round four of the season featured GTE Pro-spec Ford GTs around the virtual Sebring circuit, with a sprint race followed by a reversed-grid endurance race – with the grid set by championship positions.

Fast Racers Forza, which scored its first podium of the season last time out, took a surprise pole position. FRF's Rodrigues dominated the sprint race, taking a lights-to-flag victory ahead of Red Bull's Alexandre Arnou and Lazarus' Tobin Leigh, with the former reducing the gap from five points to just two in the process.

Arnold, whose Total Performance Racing team sits third in the standings, fell from second on the grid to finish fourth, but he atoned for his disappointing first race with



Pre-event leader Lazarus Esports was knocked off its perch by Red Bull

a stunning drive in the endurance event.

From 14th on the grid, Arnold (inset, above) stormed to second in just four laps and took the lead on lap five when Kieran Millward (Alien Motorsport) ran wide at Turn 1. Arnold dominated the race thereafter to take his team's first win since the season opener on the Le Mans circuit.

Leigh and Mallet made contact on multiple occasions throughout the race as they battled from the back of the grid.

McLaren Shadow finalist Rodrigues put FRF into the mix, and made two bold

moves on Mallet, only to lose out to the French gamer during the pitstop phase.

Mallet emerged in second place ahead of Rodrigues, who capped off his team's strongest round of the season, while Leigh could only muster fifth, Lazarus' worst result of the season.

It was enough for Red Bull to storm into a 10-point lead, with the chance to earn the biggest share of the \$50,000 prize available for the qualification period. The final round will take place at Spa on 25 April.

JOSH SUTTILL



Alex Marquez wins first MotoGP race

MOTOGP ESPORTS

Alex Marquez cruised to victory in MotoGP's first #StayAtHome Grand Prix around Mugello, while there were crashes for brother Marc, Maverick Vinales and Fabio Quartararo.

In lieu of real-world racing, MotoGP organised a six-lap Esports race for 10 of its riders, potentially the first of many.

Petronas SRT's Quartararo beat Francesco Bagnaia by over 0.2 seconds to pole in the five-minute qualifying session, while future works Yamaha team-mate Vinales completed the front row.

Marquez started the race from

fourth position but threw himself into a lead battle with Bagnaia on a frantic first lap.

Bagnaia ran wide at the San Donato right-hander at the start of the second tour, and Marquez assumed the lead.

Bagnaia attempted to catch Marquez but a crash on the penultimate lap ended his victory chances and ensured Marquez won the race by 7.093s.

Quartararo crashed at the first turn on the opening lap, with his errant bike wiping out Vinales. Both dropped to the back of the field.

Vinales recovered to finish on the podium, while Quartararo had another incident just a

couple of laps in.

A crash for reigning six-time MotoGP champion Marc Marquez at the halfway stage dropped him off the podium, but he still took fifth place – having only had two days of practice on the game.

Suzuki riders Alex Rins and Joan Mir finished in sixth and seventh place respectively.

Tech3 KTM's Miguel Oliveira struggled to adapt. He was eighth, but ahead of his 2020 team-mate Iker Lecuona, who had multiple crashes.

Alex Espargaro's limited time in the virtual world showed. He was 10th and last.

JOSH SUTTILL

McLaren F1 driver Norris dominates Veloce opener

VELOCE ESPORTS

McLaren Formula 1 driver Lando Norris crushed the opposition in the first round of a new sim racing series launched by Veloce Esports and Motorsport Games.

After two successive weeks of the #NotTheGP series entertaining F1 fans in the absence of the Australian and Bahrain Grands Prix, the action moved to simulation-focused title iRacing for the Veloce Pro Series.

Real-life racing stars such as Norris and three-time Indianapolis 500 winner Helio Castroneves raced alongside sim racers and content creators in Australian Supercars around the Silverstone circuit.

Norris took pole for the first of two races by over 0.5 seconds, and then went on to dominate the race. He crossed the line 10.935s ahead of his nearest competition, which was 2019 World's Fastest Gamer winner James Baldwin. IndyCar racer Ed Jones disconnected from second position due to internet issues.

This promoted Baldwin into second, having just overtaken 2019 Japanese Formula 3 champion Sacha Fenestraz into the Loop on the previous lap. Freshly re-signed Haas F1 reserve driver Louis Deletraz pressured Fenestraz for the final podium place but ultimately had to settle for fourth place ahead of

one-time F2 racer Ryan Tveter.

#NotTheBahGP reversed-grid race winner Cem Bolukbasi closed the top six ahead of F2 veteran Luca Ghiotto and ex-F1 driver Esteban Gutierrez.

With the top 10 reversed for the second race, ninth and 10th place finishers – former Ford factory driver Harry Tincknell and 2020 Bathurst 12 Hour class winner Martin Kodric – started the race on the front row. Mercedes Formula E driver Stoffel Vandoorne was demoted out of pole by Kodric.

The partially reversed-grid race was dominated by Croatian racer Kodric, who escaped down the road in a similar fashion to Norris.

Norris started the race from 10th on the grid and survived opening lap contact on the way into Village with Baldwin and Vandoorne, who were both sent spinning.

Norris charged up the field and passed his former European Formula 3 team-mate and roommate Fenestraz for second into Stowe corner with just five minutes to go. He eroded Kodric's leading margin with ease but didn't have enough laps left to make an overtake.

Fenestraz and Deletraz were third and fourth ahead of Bolukbasi and current FE points leader Antonio Felix da Costa, who shot from 22nd on the grid to finish in sixth place.

JOSH SUTTILL



Sage Karam snares IndyCar Esports victory

INDYCAR iRACING

Part-time IndyCar driver Sage Karam was victorious in the first IndyCar Esports event on iRacing, complete with TV commentary team and most of the grid.

Five-time series champion Scott Dixon, Andretti Autosport's Ryan Hunter-Reay and 2017 Indianapolis 500 winner Takuma Sato were the only major absentees.

Fans voted for Watkins Glen to host the opening round, meaning overtaking was at a premium. Karam, the 2013 Indy Lights champion and an experienced sim racer, led from the pole and only relinquished the lead during the two mandatory pitstop phases.

He was followed in second place by Chip Ganassi Racing's Felix Rosenqvist, another avid sim racer. Team Penske's Will Power beat IndyCar debutant-to-be Scott McLaughlin for the final podium place.

McLaughlin denied fellow 2020 rookie and Arrow McLaren SP driver Oliver Askew with a bold move at the Bus Stop chicane with just over five laps to go.

Penske's Josef Newgarden was seventh behind his team-mate Simon Pagenaud.

Ex-Formula 1 driver Scott Speed, who was previously banned from iRacing due to intentionally crashing into another driver, was on for a strong finish before binning his car into the wall on the exit of the Boot.

Dayle Coyne Racing's Santino Ferrucci was the first driver to be lapped and finished in eighth, a testament to the speed of Karam and Rosenqvist.

Indy Lights racer Kyle Kirkwood subbed for the absent Hunter-Reay and recorded ninth, with Conor Daly closing the top 10.

Seven-time NASCAR Cup champion Jimmie Johnson finished 16th on his virtual IndyCar debut.

James Hinchcliffe couldn't start the race due to poor internet connection, while ex-team-mate Robert Wickens was denied an IndyCar return by a delay in the shipping of his simulator. He will be participating in the next race at Barber Motorsports Park this weekend.

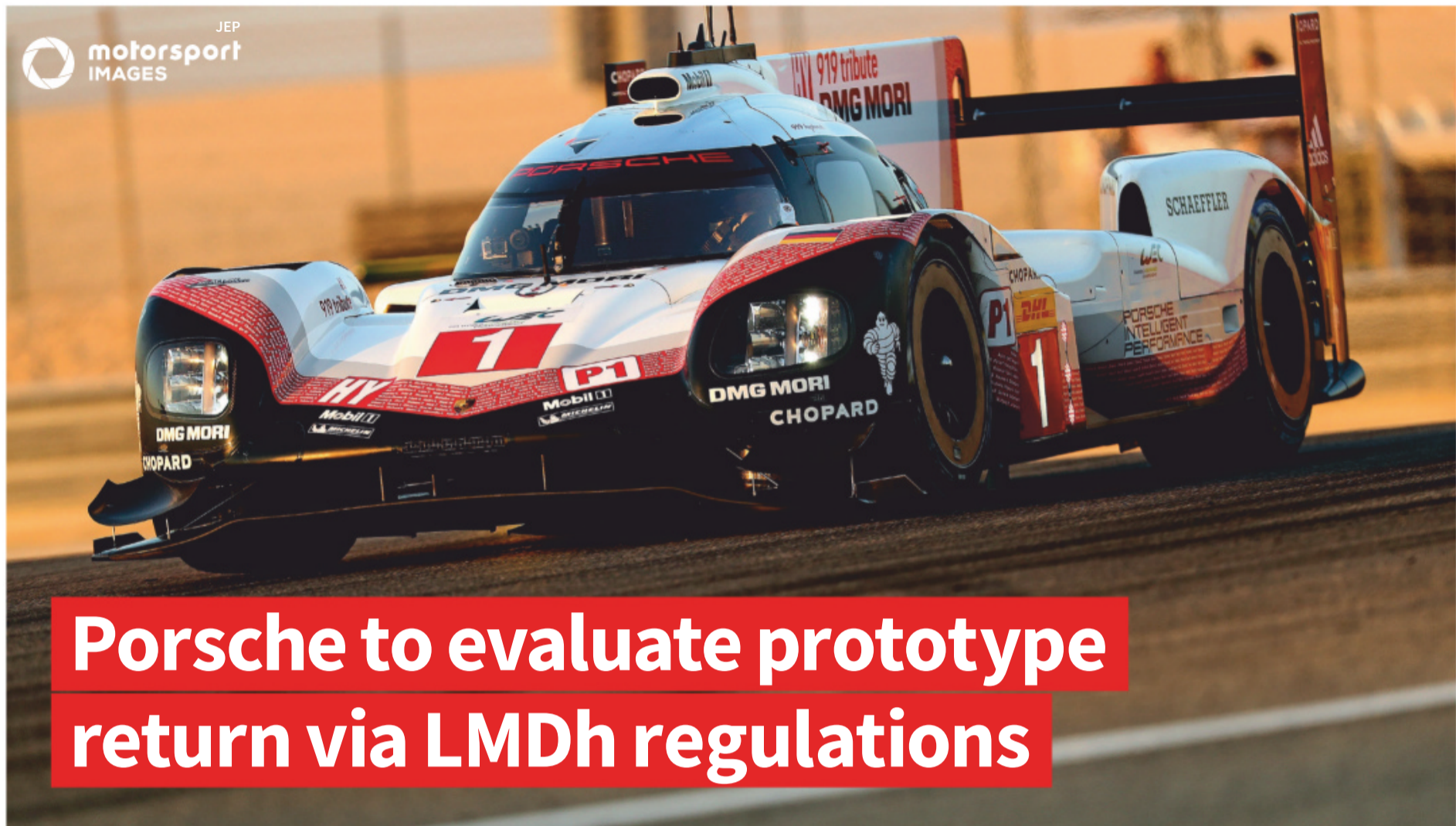
JOSH SUTTILL



Norris smashed the competition in first Veloce Esports race

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➔ P15 OPINION



Porsche to evaluate prototype return via LMDh regulations

WEC

Porsche's last absence from the front line of sportscar racing stretched from the end of 1998 until 2014. It could be back much sooner this time around – after quitting the LMP1 ranks of the World Endurance Championship at the end of 2017.

The German manufacturer has revealed that it will be undertaking an evaluation of the new LMDh rules that will give manufacturers the chance to race in the WEC from 2021-22 and the IMSA SportsCar Championship in North America from 2022

with the same machinery. It's not making any promises yet, but the signs are that it could be back at the Le Mans 24 Hours competing for outright honours soon.

“Our board member Mr Michael Steiner [who is responsible for motorsport as research and development boss] has asked us to do a study to see what is possible,” said Pascal Zurlinden, head of Porsche factory motorsport. “Porsche is seriously looking into it, but there is no decision yet.”

The rules for the LMP2-based class that builds on the principles of IMSA's existing Daytona Prototype international category

have yet to be outlined in detail. But Zurlinden expressed the hope that the delay in the next round of announcements that had been due at the ‘SuperSebring’ IMSA/WEC doubleheader last month would be short.

IMSA boss John Doonan has said that the rules would only be “delayed a little bit” after the cancellation of the Sebring WEC round and the postponement of the IMSA race until November. It seems, however, that right now there is no timeline for any release of further details.

GARY WATKINS

Sims collecting NHS donations

FORMULA E

BMW Formula E driver Alexander Sims and his performance engineer Andrea Ackroyd have set up a campaign to collect protective equipment from UK motorsport companies and donate it to the NHS to combat the coronavirus.

The group has requested unopened stock – including face masks, goggles, gloves, shoe covers, plastic aprons and detergent wipes.

A letter sent by Sims read: “I am writing to you to see if we can try to pool

together and help the NHS save the lives of the vulnerable people in society, due to them being completely overstretched through COVID-19.

“This is 100% to help the NHS keep their staff safe and able to work tirelessly to ensure more lives are saved. We know that they do not have enough equipment to operate safely.

“This may well be a drop in the ocean compared to the big manufacturing companies that are scaling up but it's something small we can do to help. NHS

stock is not going to be replenished in the next few days!”

Since Sims revealed the relief effort, hospitals have been in touch requesting any donations due to the scarcity of equipment.

He has set up an email for correspondence and can be contacted at alexander.sims@hotmail.co.uk.

The London ExCeL Centre, which is still due to host the FE season finale in July, will open imminently as a temporary hospital with two wards and 4000 beds.

MATT KEW





Wickens targets DTM test in Zanardi's BMW

DTM

Robert Wickens wants to test Alex Zanardi's modified BMW M4 DTM car as he bids for a racing comeback following his horrifying 2018 IndyCar crash at Pocono, which left him with multiple fractures – including one to his spine.

With the Arrow McLaren SP team, for which he acts as a driver advisor for Patricio O'Ward and Oliver Askew, Wickens has been developing an adapted steering wheel.

"We've done a lot of prototype steering wheels," he explained. "3D-printed concepts of what I would need in terms of hand controls. It's moving along. Obviously, it's not at the rate I'd like it to be – I was hoping to step in an IndyCar in 2020.

Wickens says the next port of call is to test a car with existing hand controls, such as the adapted BMW M4s used by Zanardi in 2018 and 2019, or the Italian's M8 GTLM sports car.

Wickens has extensive DTM experience, having won six times in a five-year spell for

Mercedes between 2012 and 2017 – finishing fourth in the 2016 standings.

"I would love nothing more than to get hold of Jens Marquardt at BMW and ask if he can let me in the DTM car that Alex Zanardi raced, or the GTLM M8 that Alex ran at Daytona, just to see what different hand controls look like," Wickens said.

- The DTM has issued a heavily revised 2020 calendar in the wake of the coronavirus pandemic, with the season now due to begin in early July.

The Norisring is set to host the opener on 10-12 July. An inaugural DTM race at Russia's new Igora Drive circuit could take place either in late July or early October, with a Swedish round at Anderstorp Raceway on standby for either slot.

DTM has managed to retain all 10 events originally planned, but the season will now stretch well into November with the season finale at Monza.

D MALSHER-LOPEZ, J BOXALL-LEGG AND R THUKRAL

Muller and nephew to be team-mates

WTCR

Four-time World Touring Car Championship title winner Yvan Muller and his nephew Yann Ehrlacher will race together at Cyan Racing in 2020, each driving a Lynk & Co 03 TCR.

Both drivers raced for the four-car outfit last year, but with Ehrlacher driving under the Cyan Performance banner while Muller scored points for Cyan Racing. As part of a rejig, both have now been placed together at the Cyan Racing team.

Muller has been a title contender in both seasons of WTCR so far, and most recently finished third behind champion Norbert Michelisz and Esteban Guerrieri in 2019.

Ehrlacher, who scored six podiums in 2019 to finish ninth in the standings, said: "Yvan has been in every situation possible in motorsport, either on the track or out of the track. I am in this business now for three years, which is not even 10% of his career. So, it's a mega opportunity to catch as much experience as I can from him.

"If I knew, seven years ago, when I was coming to the WTCC races to watch and was dreaming about being a driver, that one day I would be in one of the best teams, pairing with my uncle, I would have signed straight away."

Cyan Racing is yet to announce its other two drivers for the 2020 season. The team fielded 2017 WTCC champion Thed Bjork and ex-Ford FIA World Endurance Championship driver Andy Priaulx alongside Muller and Ehrlacher last year.

RACHIT THUKRAL



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IN THE HEADLINES

LE MANS TEST CANCELLED

The rescheduled Le Mans 24 Hours in September will not have an official test day, which has normally taken place two weekends before the race since 2005. Automobile Club de l'Ouest president Pierre Fillon explained that there was a desire not to “overtax” competitors in what is likely to be a crowded schedule for the World Endurance Championship and the European Le Mans Series after the resumption of racing.

HAAS F1 RESERVES REVEALED

Haas has confirmed Pietro Fittipaldi and Louis Deletraz will serve as its official test and reserve drivers through the 2020 Formula 1 season. Both made their F1 test debuts with Haas at the end of 2018, and were affiliated to the team last year in support of race drivers Romain Grosjean and Kevin Magnussen. Fittipaldi served as Haas' test driver through 2019, while Deletraz was the team's official simulator driver.

WRC DELAYS TWO RALLIES

The 2020 World Rally Championship has been hit by further delays due to the coronavirus outbreak, with Rally Portugal and Sardinia officially being postponed. Portugal was due to host round five of the season on 21-24 May, while Rally Italy Sardinia was scheduled for the start of June. No new dates have been announced yet.

IMSA SHUFFLES THREE RACES

The IMSA SportsCar Championship has rejigged its 2020 calendar as a result of the coronavirus. The Mid-Ohio event, postponed from 3 May, will now take place on 27 September. The Laguna Seca round has been brought forward by one week to 6 September to assist IMSA teams competing in the Le Mans 24 Hours. The Petit Le Mans enduro at Road Atlanta will now run on 17 October, a week later than planned.

WESTBROOK TO CONTEST N24

Sportscar ace Richard Westbrook will return to the Nurburgring 24 Hours this year, teaming up with fellow Briton Jamie Green and defending winner Frank Stippler in a Phoenix Audi R8. Former Corvette and Ford works driver Westbrook has twice finished second in the event, his Marc VDS BMW Z4 missing out by just 40 seconds in 2015 and by 30s in a Rowe BMW M6 in 2017.



Audi partner bags hybrid gig

WORLD RALLY CHAMPIONSHIP

The FIA has appointed Compact Dynamics as the exclusive hybrid systems supplier to the World Rally Championship.

Last year, the FIA launched an invitation to tender for the 2022-2024 seasons – when the next generation of Rally1 vehicles are to be introduced. The hybrid systems will only be fitted to manufacturer entries.

The decision to award the contract to Compact Dynamics was approved by the FIA World Council via a special e-vote.

The German company is a part of the Schaeffler Group that has a well-established technical partnership with Audi. A specialist provider of drive systems and motor generator units, the company has supplied Formula 1 teams and Audi's Formula E programme (below).

The hybrid system will be used on road sections and partly on special stages, but at the discretion of the organisers so as

to avoid increasing the average speed.

Among the other items discussed by the World Council were provisions for Rally1 engine technical regulations to retain the same base engine as the current WRC cars, but with measures to reduce costs.

The full technical regulations for Rally1 have yet to be published, possibly because of the need to compromise between the different marketing aims of the WRC's remaining manufacturers and the FIA's desire to tightly control costs.

This will be partly achieved through the development of a survival cell common to all cars, developed by the FIA, which, together with the hybrid system, it is hoped would facilitate the entry of more manufacturers to the championship.

The proposed ruleset was blasted by Hyundai's Thierry Neuville. The Belgian suggested the “shit” plans for “R5-plus” would not interest him.

JAMES NEWBOLD



John Campbell-Jones 1930-2020

OBITUARY

John Campbell-Jones – who died on 24 March, aged 90 – was an ambitious privateer who played a cameo role in the Formula 1 World Championship. He claimed a 100% finishing record, albeit in last place following pitstops, in his two frontline races.

The Surrey-born garage owner, restaurateur and businessman finished 11th in the 1962 Belgian Grand Prix at Spa, driving a Lotus 18 loaned when his Emeryson's gearbox broke in practice. Despite sustaining burns when he crashed an Emeryson in practice for Germany's non-championship Solitude GP that September, Campbell-Jones bounced back to finish 13th in the 1963 British GP at Silverstone in one of Tim Parnell's Climax V8-engined Lola Mk4s. Unreliability in minor league outings with a Parnell Lotus 24 V8 meant he rarely finished, except in the GP di Roma at Vallelunga, again at the back.

Campbell-Jones had been more successful in sportscars, in which he debuted in 1957 and raced extensively. At Goodwood on Easter Monday in 1958 he'd showed his mettle by winning a competitive Chichester Trophy 1100cc race, staving off Tom Dickson and future Le Mans winner Roy Salvadori in similar Lotus 11s. In 1959 he and John Horridge won their class in the Nurburgring 1000Km with the car.

Campbell-Jones raced an F2 Cooper in 1960 and sometimes in a Lotus Elite. He bowed out after the 1966 Oulton Park Gold Cup, from which his BRP-Climax retired after four laps with gearbox issues.

He is survived by acclaimed TV and film actor daughter Emma Campbell-Jones.

MARCUS PYE



SCHLEGELMILCH/MOTORSPORT IMAGES



F1 bans teams from developing 2022 cars

FORMULA 1

As Formula 1 continues to be impacted by the COVID-19 pandemic, teams have been banned from developing their cars for the new regulations due in 2022 for the remainder of the year following a World Motor Sport Council ruling.

The bid to reduce costs through 2020 comes after the new regulations had already been pushed back a year from 2021, a move that received formal WMSC approval at a meeting earlier this week.

Teams are braced for a predicted fall in income following the cancellation or postponement of the opening eight races of the season, the hosting fees for which fund much of the sport's revenue.

Changes have also been made to the sporting regulations to allow the FIA and F1 to "react to the crisis and organise a race calendar that best safeguards the commercial value of the championship and contains costs as much as possible".

The FIA and F1 now have the

power to change the calendar without a vote, while certain articles of the regulations now only require majority support from teams instead of unanimous backing.

FIA president Jean Todt has been given extraordinary powers "to take any decisions in connection with the organisation of international competitions for the 2020 season, which may be required as a matter of urgency".

A new shutdown period has been introduced for power unit manufacturers, moving in line with the enforced three-week break all F1 teams are currently taking. Engine arms, such as Mercedes' High Performance Powertrains, had been exempt.

The FIA also confirmed the current shutdown period can be extended "in the event that public health concerns or government restrictions continue beyond the shutdown period initially envisaged".

Mercedes has also agreed to a plan not to allow dual-axis steering to remain in F1 in 2021.

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It was a very good year

The crisis-enforced pause in the 2020 season provides an opportunity to reflect on the great seasons of the recent past, and ask what made them so special

ALEX KALINAUCKAS

There's something special about a title fight going down to the wire in any league or points-gathering-based sport. It piles on the drama, the pressure, the climactic imagery. Such scenarios speak to our urge for things to be as good as they possibly can.

Some sports – American leagues especially – cap their regular seasons with playoff competitions to guarantee finale drama, something NASCAR adopted in 2004 with 'The Chase', which became its own playoffs in 2016. Formula 1 doesn't do all that – and the closest twist it has added, the double-points ending to 2014, was rightly cast off immediately.

But F1 hasn't had that ultimate climax all that much lately. Since the start of the past decade, only four times – 2010, 2012, 2014 and 2016 – has the title been decided at the final round. Taking it back to the start of the century for a recent cut-off, four more seasons – 2003, 2006, 2007 and 2008 – went down to the wire. That's eight in the past 20 campaigns, but the current run of three campaigns matches the longest streak (2000-2002) that contemporary F1 has had without a final-race decider.

As the current campaign is on its unfortunate coronavirus hiatus, there is time to pause and reflect on what has gone before – even if the usual, busy-but-less-tragic, alternative would be better for F1 and humanity in general – and what made some seasons so good.

Looking back on those title deciders of recent times, there's one

“2010 was special, given the number of teams with drivers in contention at the final round”

that really stands out, which will celebrate a big anniversary this year. The 2010 season was one for the ages, given that that year's title winner, Sebastian Vettel, ended up making plenty of history (see page 18), but the main reason to consider it a standout campaign was the number of teams that still had drivers in contention at that final round.

Although Lewis Hamilton arrived at the 2010 season finale in Abu Dhabi in the hunt by just one point, he nevertheless made it a four-way, three-team battle. No season since then can compare in terms of a year-long scrap between two or more teams. Other seasons – 2012 (six different teams won races) and 2013 (four) – had more squads take home victories, but those campaigns respectively ended with a decider between two teams (Vettel's Red Bull and Fernando Alonso's Ferrari in 2012) and Vettel waltzing off

to wrap up the championship with three rounds to spare (2013).

A title-deciding fight between more than two teams is relatively rare. Even in 2003, when Williams and Juan Pablo Montoya battled Ferrari's Michael Schumacher and McLaren driver Kimi Raikkonen, the Colombian was already out of contention at the final race on victory countback. And F1 hasn't got close to that scenario since Mercedes' domination of the V6 turbo hybrid era began in 2014.

The 2017 and particularly the 2018 campaigns came close – with debate raging over which car from Mercedes, Ferrari and Red Bull (with engine performance taken out of the equation) in the latter was the best. They shared the early wins that year too, and, with the close battle between Vettel and Hamilton by that year's summer break, it could easily have been the season that ended Mercedes' title hegemony. But Vettel's run of errors in the second half let Hamilton escape to clinch the title with two rounds to spare, while Red Bull was even further adrift in third place – largely thanks to its reliability woes.

There was hope that 2019 would finally be the three-way scrap F1 had been missing for so long but, as we know, Red Bull's early struggles with the front wing rule change and Ferrari's knack for turning favourable positions into defeats allowed Hamilton and Mercedes to once again clean up early.

Hope remains that the delayed 2020 season could yet return the rare element that has been missing in F1 for 10 years, but the signs from winter testing suggest the current limitations of Ferrari's SF1000 may hinder a three-way fight for supremacy – even if the team does eventually turn things around as it reckons it can. And with the current cars now set to be used in 2021, there's no guarantee that such problems can be overcome for next season either.

Such speculation cannot be replaced with real racing-based evidence due to the coronavirus crisis. So, while many of us wish to escape the horrors of the current pandemic with a few moments of distraction and relief, there are worse ways than to remember F1's last proper multi-team championship fight.

The 2010 season will stay etched in many memories because of the storylines it produced, as well as its ending. There was Jenson Button's successful debut in 'Hamilton's team' at McLaren, Alonso bringing his unique demands to Ferrari and so nearly taking a famous title with the Scuderia. Vettel – fast, fresh, but wild. Hamilton – back to the front but prone to the wheel-to-wheel errors he has largely eradicated since his move to Mercedes. Michael Schumacher's comeback, Mercedes returning to F1 as a works team. Red Bull's rise to champion squad. The team-mate wars of Turkey and Germany, and of course that cagey (Abu Dhabi really wasn't a great race!) finale, which delivered a new champion.

In a time of uncertainty, let's savour the magic we have enjoyed, and look forward to the moment when it will finally return. ✨

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The new role of Esports

Entertainment is the number one name of the game while we long for real racing to return. But online action has another, more important role to play for fans

LEWIS DUNCAN

Esports. Whether you understand it or not, it has become the primary source of sporting action now as the coronavirus pandemic has forced the world into a global lockdown. Formula 1, MotoGP, IndyCar, NASCAR, World Endurance, DTM, World Superbikes, UK national racing (see page 58), to name only the obvious, have all had their 2020 campaigns delayed indefinitely.

Sport is humanity's great escape: something we all look forward to around the everyday grind of life. In times of crisis it's needed more than ever, but is out of bounds for the time being.

Motorsport's Esports platform offered up a chance to give people an escape, with F1, IndyCar, NASCAR and Supercars all launching their own official online series – to varying degrees of success. MotoGP was the latest, with the #StayAtHomeGP, played on the Milestone-developed *MotoGP 19*. Unlike F1's Bahrain Virtual Grand Prix, whose current F1 star power was limited to obsessed gaming fan Lando Norris and Esports novice Nicholas Latifi, MotoGP managed to assemble 10 of its 2020 stars – including reigning six-time world champion Marc Marquez and his likely season rivals Maverick Vinales and Fabio Quartararo. MotoGP legend Valentino Rossi was initially on the bill, but his participation was withdrawn. No reason has yet been given.

The five-minute qualifying/six-lap race format wasn't exactly a huge portion of racing action on a Sunday afternoon, but the high

“Marc Marquez hit the (virtual) deck having only played for the first time two days prior”

entertainment value went some way to making up for that. The skill level of each rider was massively mismatched, which meant the event was a hilariously crash-strewn affair – a result of amassing ultra-competitive riders in a no-consequence situation.

Honda rookie and reigning Moto2 world champion Alex Marquez won the race, fending off avid gamer Francesco Bagnaia on the Pramac Ducati to win by seven seconds at the flag.

Behind, chaos ensued, with future Yamaha team-mates Quartararo and Vinales wiping each other out on the opening lap, while Marc Marquez hit the (virtual) deck on the third lap having only played the game for the first time two days prior.

The whole event was enhanced by all of the riders being able to voice-chat in the online lobby. The relaxed nature of their banter was juxtaposed with the steely focus each one had on their face

during the race – even here, racing to win is their natural state.

Some will likely bemoan the lack of Esports talent present. After all, MotoGP does have its own Esports championship it devotes a lot of resources to. But watching 10 of the premier class's best in a more relaxed environment was far more fun.

But it was also hard to shake a feeling of sadness. MotoGP's pre-season testing has set up a finely balanced championship fight, with the grid set to be as close as ever. Yet, as each week passes and another race gets postponed, the season feels like it's slipping further out of reach. The #StayAtHomeGP gave us virtual glimpses at what might have been in reality.

Quartararo guiding his Petronas SRT Yamaha to pole position wasn't uncommon in his sensational rookie season in 2019, and he'll be a hard rider to beat on Saturdays this year. He was a cut above the rest in Esports qualifying too, but off the line he was matched by Vinales. Crashing at the first corner and wiping out a helpless Vinales is all too believable in reality, too, as both strive to end Marquez and Honda's MotoGP stranglehold, while also drawing the battle lines for when the pair team up on works Yamahas in 2021.

Then there was the elder Marquez. His lack of experience on *MotoGP 19* meant he took the race steady, keeping upright and out of trouble – until he crashed. Honda endured a tough pre-season with its 2020-spec RC213V, its new aerodynamic package only found to be the cause of the bike's poor cornering on the last day of the Qatar test, and Marquez is still recovering from an off-season shoulder operation. His early races would likely have mirrored his Mugello Esports outing: riding within himself with the cards stacked against him, and hoping to profit from surrounding chaos.

By the time we do go racing again, Marquez will be fully healed and any physical advantage will have evaporated for his rivals. As for the Honda, which has improved in certain areas over its predecessor, it will likely mean he will be harder to beat again.

For now, we only have imagination to wonder just what MotoGP would look like, had racing been underway for real.

But this is where Esports is perhaps at its most beneficial. Alex Marquez said prior to Sunday that it was MotoGP's “responsibility” to keep people indoors and self-isolating for their own safety and, more importantly, that of others through the #StayAtHomeGP event.

So long as people are tuning in at home, they are staying safe. And ultimately that longing for real racing to return will only heighten as they watch a virtual contest unfold.

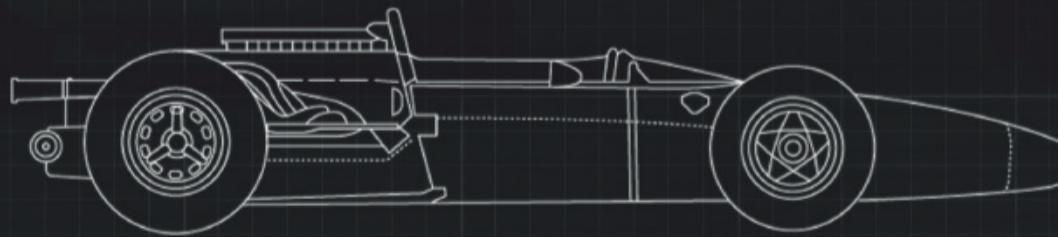
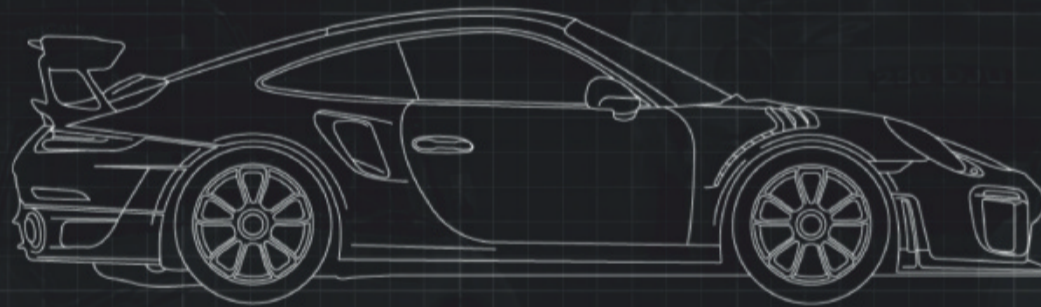
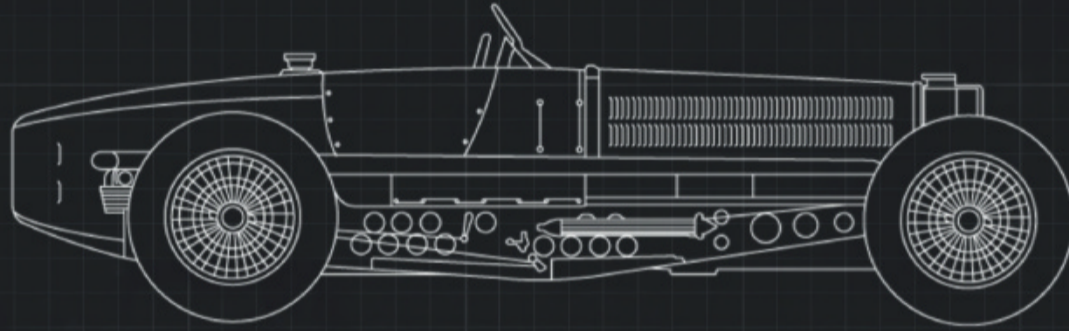
Crucially, it will ensure they commit to adhering to worldwide government advice on social distancing. Because the sooner we all get on the same page, the sooner COVID-19 disappears and the sooner we all get to go racing for real again. ✨



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SION

A lot has changed since Sebastian Vettel won titles with Red Bull and set himself the goal of winning with Ferrari. There have been a lot of mistakes too, but he's not ready to give up

ALEX KALINAUCKAS

PHOTOGRAPHY  motorsport IMAGES

T

here's a lot to be said for the 2010 Formula 1 season, looking back 10 years later. There were team-mate clashes and team order rows, wet-weather thrillers and high-profile crashes. But one feature that really stands out, with the smug wisdom of hindsight, was the way the title fight ebbed and flowed across multiple teams – Ferrari, McLaren and Red Bull – and drivers – Fernando Alonso, Jenson Button, Lewis Hamilton, Mark Webber and Sebastian Vettel. Few seasons since then can boast such an open contest.

The winner, crowned at the final race, which he had started in third place in the standings, was Vettel. At 23-years-and-134-days-old he was, and remains,

F1's youngest world champion.

In the nine seasons following his maiden title, Vettel became one of two drivers to define that era. The other is Hamilton, whose five titles in six years have taken him clear of Vettel's four championships, which the German driver picked up in consecutive years between that 2010 breakthrough and the end of 2013, when he set a record for consecutive wins, and tied Michael Schumacher's record of 13 wins in one season. Both drivers have made career-defining team moves, with Hamilton's switch from McLaren, the team that brought him to F1, to Mercedes coming ahead of the turbo hybrid period that the Silver Arrows have so far dominated. Vettel's own move from the team that made him, Red Bull, took him to Ferrari – a decision that emulated Vettel's hero, Schumacher.

By the time of Vettel's most recent title, he had established himself as the youngest driver to win multiple world championships. But even before he had clinched his first crown, back in that sumptuous 2010 season, Vettel had made his mark on F1 history, as the youngest race winner and podium finisher, the youngest points scorer (which he achieved on debut at the 2007 US Grand Prix with BMW Sauber), the youngest driver to lead an F1 grand prix, and the youngest polesitter.

But in 2020, as F1 waits and hopes for the start of its coronavirus-delayed new season, Vettel only still possesses the last of those (non-title related) accomplishments. In 2010, he was the up-and-coming hotshot taking on the established favourites in Alonso and Hamilton, as well as the reliable Webber and Button. Now, there's a new crop of young superstars ready to take centre stage.

Max Verstappen has taken Vettel's accolades when it comes to F1's youngest race winner, podium finisher, points scorer and race leader, while Charles Leclerc won the Italian Grand Prix at his first attempt as a Ferrari driver – a victory in red that Vettel is still searching for after five attempts (although he did of course famously win at Monza with Toro Rosso in 2008 and did so again with Red Bull in 2011 and 2013). Then there's Carlos Sainz Jr, Esteban Ocon, George Russell, Lando Norris, Alex Albon and Pierre Gasly. F1's latest generation has arrived in force.

Today, Vettel – while still arguably Ferrari's benchmark, in that he's a proven world champion who has made it to the top of the game, whereas Leclerc is still working to reach his peak – is the fourth oldest driver on the grid at 32, behind Kimi Raikkonen (40), Hamilton (35) and Romain Grosjean (33). That's by no means a disparagement – these are Vettel's golden years. And the career longevity enjoyed by many drivers in >>



2013 saw Vettel equal Schumacher's record of 13 wins in a season



Vettel was youngest ever F1 title winner with Red Bull in 2010



In 2010, Vettel (far r) was the fresh-faced emerging superstar

SCHLEGELMILCH



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Class of 2019 included a growing line-up of youngsters

VETTEL'S F1 STATS

STARTS
240 (11TH IN ALL-TIME LIST)

WINS
53 (3RD)

POLES
57 (4TH)

FASTEST LAPS
38 (5TH)

POINTS
2985 (2ND)



motorsport shows that there is still potentially much success to be had at this stage of his journey. What's different is that Vettel and the rest of his generation are now the reference – the targets to be hunted, not the disruptors coming with a surge of momentum from the lower formulas.

Vettel's place in F1, and his thoughts on what drives him now, were among the subjects the Ferrari driver discussed with Motorsport.com's Roberto Chinchero at last month's aborted Australian Grand Prix.

When asked if his reference had changed after winning his first title, Vettel replies: "When you are 15 and go karting, your perspective is very different to when you are 30. So, that is something that life teaches us. Some people learn it sooner, some later, some never. But that might also not be a bad thing. Don't get me wrong, I think it depends who you are, what kind of person you are, what is important to you and so on. But, for sure, it would be ignorant to think that Formula 1 is the centre of the universe and the world, and everything is turning around F1. I think having three kids and [being] a certain age, I think I am old enough to understand, and this is not the case. Having said that, for sure, this is

ON THE GRID IS WHEN YOU REALISE NOW IS THE TIME. AND THAT'S STILL VERY EXCITING

my passion, so this is a big part of my life, it plays a very central role.

"It's just something that life does to you. It's the experience you gather and so on. So, you know, it's also fair to say that 15 years or 10 years ago for me there was nothing but racing. Everything was centred around this. Now, as I said, things have changed a little bit, which doesn't mean that my passion has shrunk, not at all, but, for sure, you are able to see more.

"Your horizon grows and you are simply aware of more things going on. So obviously since then, I had 10 years to see the world and travel the world, thanks to my job, and to think about what's going on and what's changing. And then you have certain other interests that are growing as well. You mature, you know?"

Ahead of the start of the 2020 season – whenever that will be in these challenging, uncertain and ever-changing times – Vettel is a veteran of 240 career F1 starts. By the time his first title-winning campaign began he'd already completed 43 races.

Ahead of what should have been his 13th start at Albert Park – a track where he has won three times, for Red Bull and (twice) for Ferrari – Vettel reflected on how he feels approaching an F1 race weekend now he's moved from young upstart to established champion.

"[There are] similarities, but it is different," he explains. "What I mean is, obviously, I was a lot more nervous in a way back then, because I didn't know what was coming. My first race here, I didn't really know the track, so [there were] a lot of question marks. But now it's obviously a bit different. You know the track and I mean after 10 years you realise, 'I've done this before'. Obviously this gives you a certain confidence but come qualifying and the race, for sure, I am excited.

"And that is also an important thing. I think if I don't feel that excitement anymore, and the nervousness, than that's when you also don't care anymore.

"Now, on the build-up, I'm probably more relaxed because you have the routine. Coming to the moment when we are all on the grid that's when you realise: now is the time and now it is when it matters. And that's still very exciting."

It's not just Vettel that has changed since his first title, F1's nature is different too. As well as the change of overall ownership from CVC and the Bernie Ecclestone regime to Liberty Media and the Chase Carey/Ross Brawn-fronted administration, the cars and the rules have altered.

Vettel made his debut in the V8-powered, downforce-packed, lightweight machines of the late 2000s. He scored his title success in the downforce-stripped, often unsightly, cars of the start of the last decade, which covered the final season of Bridgestone's durable tyres, as well as the degradation-mandated Pirelli rubber that has been used since 2011. DRS was established during Vettel's championship-winning run, when the first hybrid systems were introduced.

The 2014 season, which ended Vettel's title years, brought the >>

massive switch to the V6 turbo powerplants, and then, in 2017, the cars were fundamentally changed again. This time they packed the downforce back on to bring down lap times and made F1 about overall speed.

After all the change, there's one aspect he'd like to be reversed: "I think the cars are phenomenal in terms of downforce, and it's ridiculous how much downforce we have and how fast and how quick the cars are in medium-speed, high-speed corners. But in low speed you can feel the weight. That's something – when you throw the car from one side to another in a chicane or hairpin, it's really [noticeable]. The cars are, in my opinion, too heavy. I think we could get rid of some of the downforce, we don't need it, but [I'd] rather have the cars lighter. Overall, we would still be the same lap time, probably even faster.

"That's the direction that happened because of the power unit and all the extras that come with it. Obviously some of it is safety measures, which you don't want to go back on. The halo alone is like 10kg. You could do it maybe a bit lighter, and still be as strong. But what I'm saying is some stuff probably is fair, that we have the kilos. Other stuff you can

I'M VERY FORTUNATE, I CAN DO A LOT OF THINGS ONCE I HAVE DECIDED TO STOP RACING IN F1

debate. But I think remembering these cars, for sure, it was a great feeling to have 600-620kg only. Now the minimum you get to is 750kg."

Vettel's F1 future was the subject of much speculation over the winter, as his current deal with Ferrari is set to run out at the end of this year. He began 2019 as the team's "priority", as team boss Mattia Binotto said ahead of that campaign, but ended up fifth in the drivers' championship – his worst result in red – and behind Leclerc in both wins and poles, and his team-mate ended up one place above him in the standings.

There were some theories that Hamilton, who is also out of contract at Mercedes after 2020, might seek to make another career-defining move to Ferrari. But at the launch of Ferrari's 2020 car, Binotto moved to reinforce Vettel's position to stay alongside Leclerc, who now has a contract with the squad until the end of 2024.

"Seb is our first choice at the moment," said Binotto. "And obviously it's something we are discussing with him and we will continue discussing, but he's certainly our first option, our preference at the moment."

But Leclerc's contract extension indicates that Ferrari does view him as its future – hence the long-term commitment. When Vettel and Binotto addressed the media during an official F1 press conference during the second pre-season test in February, the room was packed – rumours had spread around the paddock that Vettel might be about to announce his retirement. But he did not, saying instead of any contract negotiations: "We are very busy with other stuff and therefore right now I would say zero [in terms of thinking about a new contract]."

Nevertheless, when it comes to looking forward – not about his current contract situation, but about his place in motorsport and the world further down the line – Vettel acknowledges "this is something, naturally, you start to think about and I have thought about".

"It is also something you start questioning yourself," he continues, "when you are 30 or 32 more than when you are 20. Where are you going to be in 10 years? Because with 20 everything or nothing could be different, with 30 I think, given the fact that I'm in sports, my time is limited.

"So you can see something coming towards you, even if you don't want to. You would be stupid in a way to ignore that, but that doesn't mean that every day I wake up and wonder, 'What will I do in five years?' I'm quite relaxed. I think I'm in a very fortunate position that I can probably try and do a lot of things, once I have decided to stop racing in F1.

"Maybe race something else, maybe do something different in motorsport or do something completely different outside. [A] new challenge. I have some ideas, but I haven't decided. I am still here [in F1], obviously."

The prospect of Vettel sampling Le Mans and the World Endurance Championship – where Ferrari has a factory presence in the GTE classes – is enticing, as would him cutting ties with the manufacturer and forging his own path in championships such as Formula E or IndyCar.

The latter raises an interesting point – perhaps Vettel will follow Alonso's quest to claim motorsport's triple crown. After all, like Alonso, as an F1 world champion and Monaco GP winner, he qualifies under both interpretations of that accolade...

But while such potential scenarios would excite fans and observers, it seems he isn't going to leave F1 just yet. Indeed, given Binotto's assertions, he may well remain part of the Ferrari grand prix squad for some time yet.

Although he faces increasingly stiff competition from Leclerc – who took just two races to prove he would not accept a supporting role in 2019, with his decisive pass to retake the lead early on in the Bahrain GP he would later heartbreakingly lose – an extension would give Vettel more time to achieve his "mission".

The goal is the same one he set ahead of 2015 and his move to the Scuderia – win the world championship with the Italian squad, as Schumacher eventually did after his move from Benetton for the start of 1996. There are more than a few similarities between their initial struggles to win the title with Ferrari, but even with the delay to the start of the 2020 season, Mercedes' current dominant form does not seem like stopping anytime soon – Schumacher could easily have won two titles in 1997 and 1998 had just a few things worked out slightly differently.

"Well the mission is still the same, because we are not at the top," Vettel says of his desire to achieve the ultimate success with his current squad. "Obviously Mercedes has beaten us the last years, so the mission is still [on]. We had a lot of races and we made a lot of experiences – I think there were some great moments. [But] there were some moments that were not so great. But, as I said, the mission is still there and the target is still there to achieve the mission, to win with Ferrari."

In an alternate (and altogether more pleasant) coronavirus-less universe, the 2020 F1 season is already nearly 1/10th completed – with the two rounds in Australia and Bahrain kicking off what should have been a 22-race calendar. But, assuming that reality had winter testing develop exactly the same as it did in the real world, then Ferrari would have gone into those races with the likely third-fastest car.

Indeed, the SF1000's "extreme" design – per Binotto – means it generated more drag in winter testing, and the sense from watching the car trackside was that it gives its drivers a hard time with understeer – something that does not play to Vettel's strengths. Then there was *that* settlement with the FIA regarding the Ferrari power unit. All of which added up to the team striking a downbeat chord throughout the tests in Barcelona. If that was some extremely elaborate bluff, it still remains to be seen after the coronavirus crisis stopped world sport in its tracks.

But it therefore appears that if he is to finally achieve his goal and become Ferrari's first world champion since Raikkonen won the 2007 title, Vettel will need his team to turn around a deficit that it insists is there compared to Mercedes and Red Bull, which has not finished second in the constructors' championship since 2016. It's also worth remembering here that, thanks to the chaos COVID-19 has caused on F1's schedule, the current cars will be used again in 2021, with some parts frozen for development. This is intended to ease the financial burden on the teams when it comes to developing cars to the new regulations now starting in 2022, but it also means any fundamental problems with the current car could be a handicap for longer.

"The feeling is that we have done a step forward, but the question we have is whether it's enough," Vettel says of his initial feeling for the SF1000. "Currently we would probably rate it as 'no', as we see Mercedes and Red Bull ahead, but we will have to wait. So far nobody has done a single qualifying, and we don't know.

"Maybe we get a surprise in a positive way. But no matter what it is, this will be our starting point and then we go from there. The challenge will be to be the team that has the bigger steps in development throughout the season – because given the season will be so long, [with] some races postponed, it will be more and more important.

"You can win [the first] race and dominate, and dominate the next one, but it means nothing if you are not as strong in the last race."

Even if Ferrari can turn around the SF1000's potential, Leclerc's position as F1's latest rising young superstar to score poles and race wins will arguably make it even more difficult for Vettel to achieve his mission.

The tension at Ferrari last year crystallised after Monza, where Vettel said Leclerc had disregarded an instruction to give his team-mate a >>



Ferrari struggled to catch Hamilton and Mercedes in 2019

SUTTON DUNBAR



Can Vettel see off threat from teammate Leclerc (I)?



GALLOWAY

3

GREAT VETTEL DRIVES FOR FERRARI



DUNBAR

2015 MALAYSIAN GP

Vettel claims Ferrari's first Formula 1 victory in nearly two years in his second start for the Scuderia, as his superior tyre management means he bests the Mercedes squad, which was expected to dominate once again. Ferrari forces Mercedes into an early strategic mistake of pitting during the safety car, but lap times suggest Vettel would have won anyway.



HONE

2017 AUSTRALIAN GP

Mercedes' expected pre-race pace advantage disappears as Vettel, who split the Silver Arrows in qualifying, pushes Lewis Hamilton hard early on, without appearing to suffer significant tyre wear. This pressure forces Hamilton into an early stop, which gets him stuck behind Max Verstappen's Red Bull. Vettel takes the lead at his sole pitstop and runs clear.



SUTTON

2018 CANADIAN GP

Vettel and Ferrari strike a timely blow to Mercedes at what was generally considered Hamilton's turf, overcoming a disastrous start to the weekend in practice. Vettel nails pole and the start, then fends off Valtteri Bottas at an early safety car restart, and enjoys a clear advantage as the Finn overconsumes fuel trying to stay in touch.



MAUGER



GORIA



Ferrari appeared
downbeat during
Barcelona tests



Vettel is convinced
Ferrari has talent to
get back to the top

tow in that shambolic final run in qualifying. Then there was Vettel benefiting from Ferrari's strategy call in Singapore, which enraged long-time leader Leclerc, and the team orders spat in Russia. The third incident more than likely cost Ferrari the race victory after Vettel's retirement triggered a virtual safety car, which allowed Hamilton to take the lead.

But it was the collision in Brazil that summed things up. Leclerc attacked Vettel, with a bold move at Interlagos's first corner, and then Vettel appeared to have a red-mist moment – attacking his team-mate back again and moving over on him on the subsequent straight, which triggered the clash that put them both out of the race.

F1 fans and the media are very interested in how the next chapter of their rivalry will play out, but Vettel insists "it is not so important, whether I have five points more or less [compared to Leclerc]".

"The important thing is that we are heading in the right direction as a team," he adds. "Obviously last year was a step back, because we were not as strong as the years before. There are reasons, those we need to understand and make sure we eliminate to make progress again. Then

THE FOCUS IS THERE TO KEEP WORKING BECAUSE I BELIEVE THAT ONE DAY WE'LL BE THERE

five points up or down, for sure in the moment I care, but really what all our target is here, is to make sure that Ferrari comes back to the top."

Unlike Hamilton, Vettel started his career in F1's midfield, with what was then called Toro Rosso. Raikkonen opted to prolong his career in F1 by moving back to the squad where he started his career – Sauber, now Alfa Romeo – after losing his Ferrari drive to Leclerc.

Would Vettel consider a similar move? "I don't know. I really don't know. I was in the midfield when I started with Toro Rosso, and at the beginning of Red Bull – which very quickly became a proper winning team. But when I started with Toro Rosso, the first year we were looking for P17–P15. We weren't fighting for much.

"The year after [2008] was amazing, because we were able to fight for more. We were like P12, top 10, top 10 regularly at the end of the year. So, it depends – when you start from there, obviously top 10 means a lot to you, top five is incredible.

"When you spend 10 years in the top five, going back to P15 doesn't feel the same. Whereas if you're P15 for the first time because you have been P18 before that, it's the greatest thing ever. I don't think you can unsee what you have gone through. I think if you take Kimi, for example, he's not going for the win now [with Alfa Romeo]. I think he would love to – if he could choose, he would rather love going for the win. But yeah, I think, you can also seek or see pleasure from driving and racing alone."

Schumacher carved himself a unique place in Ferrari's history with his run of five titles at the start of the current century. Vettel desires to do the same, but he has already endured more seasons of disappointment than his compatriot did at the start of his Ferrari career.

But Vettel remains convinced that his team has what it takes to achieve their shared aim. "We have a lot of young, great talents in the team – great people with great ideas, creative ideas," he explains. "And that's why, in a way, it's a shame that we haven't – in terms of results – had that breakthrough yet. But that's why also the focus is there to keep working, do our thing, because I believe that one day we'll be there."

However Vettel's career ends, there can be no doubt that he has earned the right to be known as an F1 great. The second act of his GP journey so far has certainly been filled with more disappointment than triumph, but it makes for a more compelling story than his run – index finger pointed aloft in joy – of domination with Red Bull.

He is different, naturally more mature than the fresh-faced emerging superstar who rode that succession of bulls to glory. But it doesn't feel as if his tale is at an end just yet.

If he can cut out the errors that have blighted his most recent campaigns, help Ferrari turn things around with the SF1000, and see off Leclerc and the rest of the new wave, as well as finally best the Mercedes/Hamilton alliance, then Vettel will have earned an ending worthy of his initial triumph in 2010 – victorious against all-comers at the last. ❄️

WHY INDYCAR'S LATEST F1 EXPAT CAN TAKE CARLIN TO THE NEXT LEVEL

He'll have to wait a little longer for his IndyCar debut, but IMSA champion Felipe Nasr has all the tools to make a success of the switch

JAMES NEWBOLD

PHOTOGRAPHY  motorsport
IMAGES



Nasr only got a short run on his first test outing with Carlin at COTA, but shone at Sebring

When Felipe Nasr got the call on 1 February from Carlin's IndyCar team manager Colin Hale to attend a test at Sebring the following day, he had a slight problem. The former Sauber Formula 1 driver was in his native Brazil, having a barbecue with his parents, and all direct flights to Florida were fully booked.

After a three-hour connecting flight to Fortaleza, Nasr flew another eight hours overnight and landed in Miami around 9am, took a taxi home and then drove the 2.5 hours to Sebring, where he scoffed down a sandwich offered by his mechanics, checked his belts and seat, and went on to top the times – despite missing the morning's running. All the more impressive was that it was only his second time in an IndyCar, after sharing with Sergio Sette Camara in a rain-blighted test at COTA in which he “only drove 20 or 30 laps”. Nasr is quick to point out that only around 80% of the grid was present at Sebring, but it's hardly the point.

It's not too many drivers who, once accustomed to being treated like a deity in F1, would willingly lump it in economy just to attend a test session. But Nasr is no prima donna and is serious about grasping this latest opportunity to revive his single-seater career.

“Sometimes we have to take ourselves out of that comfort zone,” he tells Autosport after his planned IndyCar debut with Carlin in St Petersburg was halted by the coronavirus pandemic. “I could have been complaining the whole way, ‘I didn't sleep all night, I didn't have breakfast, I didn't have this’ until I sat in the car, but I didn't. All I said was, ‘Here's an opportunity, that's why I love racing and why I choose to be a racing driver.’”

The 27-year-old will have to be patient to discover when he'll next get a chance in IndyCar, given the continued uncertainty over the schedule and the fact that his main commitment is in the IMSA SportsCar Championship with Action Express Racing, the team with which he won the 2018 title and added victories in the Sebring 12 Hours and Petit Le Mans last year. And should Carlin sign a driver who brings budget for its second Dallara-Chevy, Nasr's IndyCar foray may be over before it begins. But he admits that he's already “thinking way ahead of time” about doing ovals in the future and getting a proper shot at the series. If he does, the opposition should sit up and take notice.

The path from IMSA to IndyCar isn't exactly a well-trodden one, with Scott Pruett and Robby Gordon (two wins apiece) the main success stories. But neither had Nasr's luxury of an extensive background on the European single-seater scene to aid their



Carlin delivered Nasr to the British F3 title in 2011



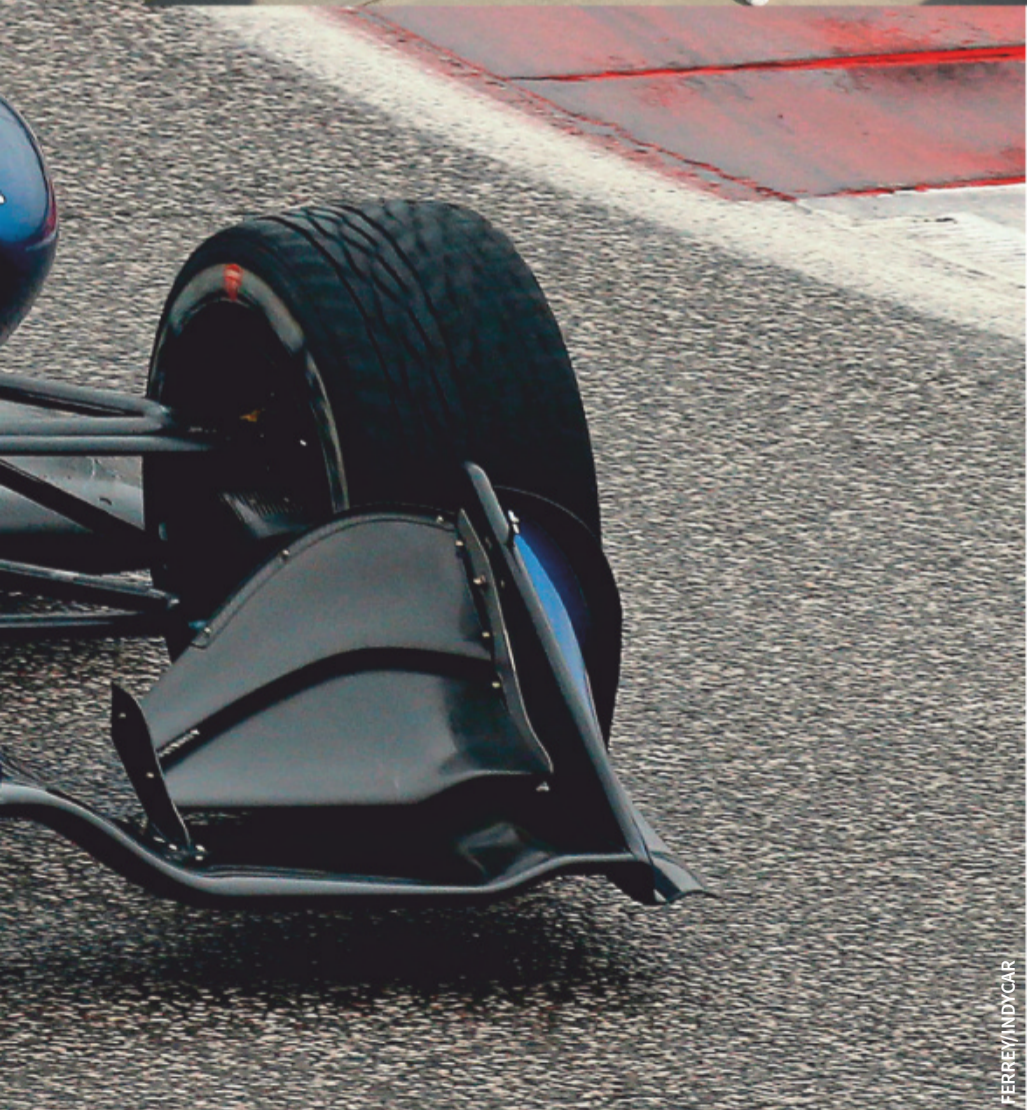
Nasr scored the lion's share of Sauber's points in stint alongside Ericsson

“CARLIN WAS THE PLACE WHERE I LEARNED THE MOST AS A DRIVER WHEN TALKING ABOUT SET-UP”

transition and he is already comfortable in the team environment, having worked with many of its staff before.

“I think that was the place where I learned the most as a driver when talking about set-up and about understanding the technical side,” Nasr says of his time at Carlin, with which he won the 2011 British F3 title and took four victories in GP2. “They were running six cars at that time in F3, and there's so much you can learn in that environment talking to different engineers, different drivers. That accelerated the process of being a more complete driver, so all I have is good memories from Carlin.”

After a 2014 season in which Nasr finally broke his GP2 duck – at the 50th attempt, at Barcelona – and challenged Jolyon Palmer for the title, he graduated to F1 with Sauber in 2015. He was fifth on his debut in the Australian GP and scored another good haul of points with sixth in the Russian GP to comfortably outscore team-mate Marcus Ericsson. But 2016 was a struggle as Sauber battled against a lack of funds, and it was only Nasr's ninth place at Interlagos that lifted it above Manor for 10th in the constructors' >>



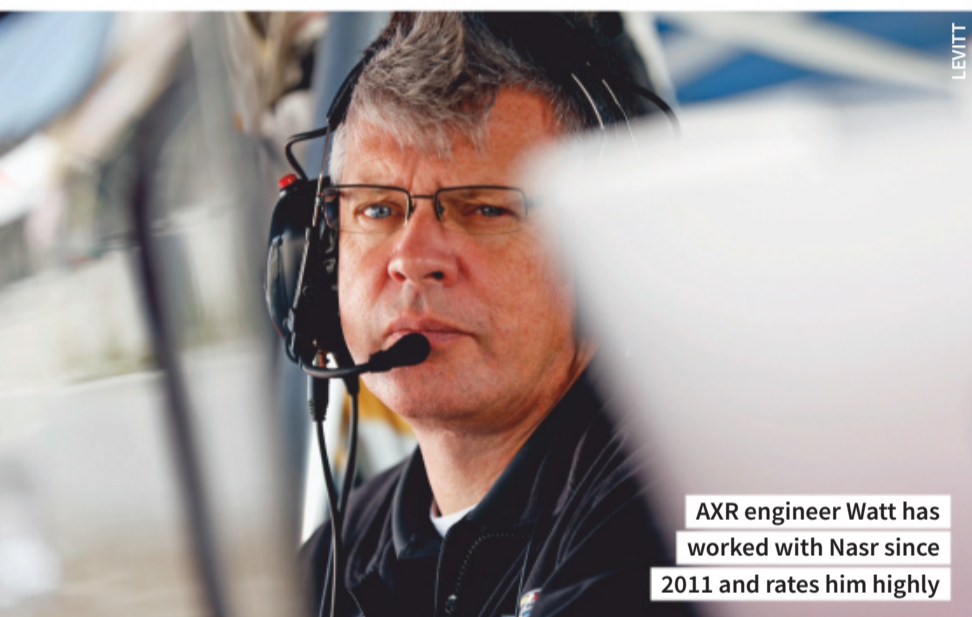
FERREY/INDYCAR

championship, thereby saving the Swiss team while condemning Manor. Yet it wasn't enough to keep his F1 career alive, as Sauber replaced him with Pascal Wehrlein for 2017, while new investment ensured Ericsson – who failed to score in 2016 – kept his seat.

Following a year on the sidelines, Nasr bounced back by winning the IMSA title at the first attempt in 2018, and forged a close working relationship with Scottish engineer Iain Watt. Having previously worked in the Indycar paddock with drivers of the calibre of Cristiano da Matta, Dario Franchitti and Tony Kanaan, Watt has a good understanding of what is needed for success, so when he says people don't realise how talented Nasr is, it's worth listening.

"I've known him since 2011 when we first tested him as part of the Sunoco Challenge at Daytona and we've kept in touch all

“BECAUSE THEY’RE DEALING WITH GT CARS, GOOD SPORTSCAR DRIVERS TEND TO BE GOOD OVERTAKERS”



AXR engineer Watt has worked with Nasr since 2011 and rates him highly



Nasr (centre), with Eric Curran and Pipo Derani, is one of IMSA's leading lights

these years," says Watt. "The Felipe I know and respect is a very well-rounded driver and I don't think people understand quite how much of a talent he is. I've watched him mature and ultimately become IMSA champion. For a 27-year-old he's pretty mature."

Although there's relatively little ostensibly in common between the Cadillac DPi he races in IMSA and the Dallara IR-18, Watt says the skills Nasr has picked up with Action Express will serve him well in IndyCar.

"Sportscar racing teaches drivers that they're part of a team, as opposed to they're the rockstars and everybody else is there to serve them," says Watt. "In sportscars they're reliant on their team-mates and the team for strategy; there's many more aspects to winning races than just driving flat-out the whole day.

"It sounds a simple thing, but it's a good skill for drivers to understand, especially in America where you can race your ass off to build up a 30-second lead, and then the yellow comes out and it's all gone. All you've done is wear your equipment out and the guy that was 30s behind you is now right on your tail and there's nothing you can do about it."

Racecraft shouldn't be a problem for Nasr either, Watt reckons. "Because they're dealing with GT cars, good sportscar drivers also tend to be very good at overtaking," he says. "They're overtaking five or six times a lap quite often, so that's quite a good skill for a racecar driver to have – the ability to overtake and understand risk management."

But according to Watt, where Nasr really shines is in his technical competence, cultivated from racing in several different

categories in recent years. He made a three-race Formula E cameo with Dragon last year, which ultimately came to little: he was 19th in Mexico City, thwarted by floor and suspension damage; he crashed in Hong Kong after his front wing was dislodged in a first-corner fracas; and he didn't even get off the line in Sanya. But it only served to broaden his experience.

"Some drivers are no good at testing but they're good at racing, and some can do both – Felipe falls into that category," Watt says. "He's using 50% of his brain to drive the car and the other 50% is analysing what's going on, as opposed to using 100% of his brain to drive, in which case you come in and there's not much to say."

When speaking to Nasr, it's clear that he too regards the diversity of his career as a strength that Carlin can utilise. "Funnily enough, this month was going to be a full schedule for me because I was going to do the St Pete race, the 12 Hours of Sebring, and then I was going to fly back to do the first round of the Brazilian Stock Cars, where they always bring a guest driver," he says.

"Doing 10 races in IMSA is fantastic, but if you can do more than that it's fantastic, so I'm really thankful that Action Express lets me do that. Every time you hit a track, you read the track better, you read the car better, your conversations with the engineer, you become more aware of everything and you know where to put your energy.

"Speed is one thing, but then you start working on other



GRAYTHEN/INDYCAR

Nasr now faces an uncertain wait for his next IndyCar chance

areas that I think are pretty key to establish yourself as a professional race driver – it’s your attitude, it’s being a team player, it’s so many more things than just being quick, and the different cars that I drove so far in my career all helped me to be a better driver.”

He overshadowed new Chip Ganassi Racing signing Ericsson – a podium finisher in his rookie season last year for Schmidt Peterson Motorsport – in their time together at Sauber, and also fared well against Andretti Autosport team leader Alexander Rossi in GP2, so Nasr has every reason to think that he too could make a successful transition to IndyCar, with the added benefit of circuit knowledge already established from his time in IMSA that Rossi and Ericsson didn’t have when they started.

“There are a lot of drivers that can be quick, but a driver that can give guidance to the team and know if they’re going to the wrong or the right direction is what makes the difference, and that’s what I focus on,” he says. “At the end of the day if a team is moving forward, that’s what matters and I think I could showcase that pretty well at COTA and Sebring, working closely with the technical group on the tyres, how they warm up, how the car copes with the bumps, the kerbs and what it takes to get some more time out of the car.”

That only makes the uncertainty over when he’ll make his IndyCar debut that much more difficult to stomach, but Nasr is optimistic that his time will come.

“I don’t know what will be the schedule and when and where we’re going to go racing, so we have to be patient,” he says. “I was sad for not having the opportunity at St Pete – I was pretty confident heading there and I feel like we had a great package. Max [Chilton, Carlin team-mate] as well when he drove the car at Sebring was happy with the handling, so everybody was optimistic for that first round, but I understand that safety and health comes as a priority right now. I totally agree on the decision.

“I’m very grateful to Trevor Carlin giving me the opportunity, and I hope we can keep the good faith and that first race will happen some time when the world gets into a more neutral situation.

“For now all I have talked with Trevor was to do that first round at St Pete and I don’t know where that’s going to lead afterwards, but I do have the intention to be in IndyCar in the future and if that means this year doing more races I don’t know, if that’s next year I don’t know. But just having that opportunity to test the car and to prove that I could be up there, I think made a lot of people aware of what I’m capable of bringing.”

We’ll have to wait a little longer to find out exactly what he’s capable of doing in an IndyCar when the heat is on, but the latest ex-F1 driver to pursue the American Dream in open-wheel racing could be well worth waiting for. ✎

➔ P33 TOP 5 IMSA-TURNED-INDYCAR DRIVERS

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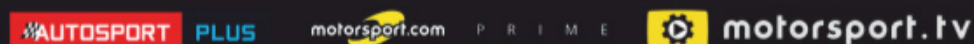
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TOP FIVE



IMSA-TURNED-INDYCAR DRIVERS

While Felipe Nasr will have to wait to enjoy his IndyCar debut (page 28), there are plenty of IMSA drivers before him who have tried their hand. We pick those who made the best impression

JAMES NEWBOLD

ALL PHOTOGRAPHY
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5 LYN ST JAMES
 Drove solo to IMSA GTO class victory at Watkins Glen with a Roush Mustang in 1985, and got a first IndyCar test with Dick Simon Racing in 1988. Spent four years grafting for a race opportunity, and after 150 sponsor rejections got her chance in the 1992 Indianapolis 500, where she finished 11th as rookie of the year. Outqualified Nigel Mansell in 1994 and remained a 500 regular until 2000.



4 DAVY JONES
 A rival of Ayrton Senna in British F3, he finished runner-up in the 1992 IMSA GTP series with Jaguar and won the Daytona 24 Hours in 1990. He'd dabbled in Indycars since 1987, finished seventh at Indy in 1989, and starred in the first post-split 500 in 1996, finishing second. He won Le Mans the same year, but his career was halted by a back injury practising for an IRL race at the Disney World oval in 1997.



3 JOHN PAUL JR
 The 1982 GTP champion with a Porsche 935, his promising career was overshadowed by his imprisonment for drug trafficking offences in 1986. On the podium in only his second IndyCar race, the 1983 season opener at Atlanta, he won later in the year at Michigan. Following his release in 1988, Paul was an Indy 500 starter and won an IRL race in 1998 in Texas, but the best years of his career were lost.



2 ROBBY GORDON
 Twice runner-up in IMSA GTO in 1990 (with Mercury Cougar) and 1991 (Mustang), he looked a future IndyCar champion when he finished third at Surfers Paradise in 1993. He won twice for Walker Racing in a breakout 1995, but was ditched one year later and thereafter focused on NASCAR, but regularly attempted the Indy 500/Coke 600 double until 2004, almost winning at Indy in 1999.



1 SCOTT PRUETT
 The 1986 and 1988 IMSA GTO champion – in Mustang and Mercury Merkur – he was an IndyCar regular from 1989-99. Recovered from a serious test crash in 1990 to lead Patrick Racing and Firestone's return in 1995, heading the standings and taking a first oval win at Michigan. He won again at Surfers Paradise in 1997 and managed a best ranking of sixth in 1998, before making an ill-fated NASCAR move for 2000.







Ticktum was first to put 320 through its paces, at Varano

MATTEO VERNASCA

THERE'S A BETTER PAST AHEAD

Dallara has improved upon its old F3 car with the new 320 for this season's Euroformula Open, ensuring that single-seater competition's 'heritage' category can race into the future

MARCUS SIMMONS

The new weapon for Euroformula Open and Japan's Super Formula Lights represents quality for drivers, engineers and mechanics who will be working with it once motorsport returns after its coronavirus hiatus. The Dallara 320 is more expensive than its alternatives, but it's arguably a more satisfying product than the equivalents at this level – Formula Regional and Formula Renault, both of which use FIA Regional F3 chassis.

The 320 is Dallara's update of the old Formula 3 philosophy, before the FIA gave the name to the old GP3 Series for 2019. As such, no series for these cars can use the 'F3' title, but traditionalists will doff their hats to Dallara for continuing to apply its historic F3 naming pattern to the 320 (F3/2020).

As many as 22 of the new cars could be racing in Euroformula this season, although realistically it will more likely be a figure in the high teens. Even that lower estimate, however, represents an impressive tally when everyone has had to buy new equipment for a series that is a non-starter compared to its Regional and Renault rivals as far as FIA Formula 1 superlicence points is concerned. For Super Formula Lights (formerly the Japanese F3 Championship), 13 cars have been delivered via Dallara importer Le Mans Company – by contrast, when the previous-generation F3 Dallara was introduced in 2012, just five appeared on the grid in Japan during that first season.

"We had FIA F3 guys also doing Euroformula with us last year," says Timo Rumpfkeil, whose Motopark team dominated EFO in 2019, its maiden season in the series after crossing over from the defunct F3 European Championship. "They were always so happy when they were able to get in the 'real' F3 car – or old-style, or whatever you want to call it – because they found it so much more satisfying to >>>

"FIA F3 GUYS WERE SO HAPPY TO GET IN THE 'REAL' F3 CAR, BECAUSE THEY FOUND IT SO SATISFYING"

drive. In the end, it really rewards good driving and you learn how to make the differences. It's an educational car, it has a good calendar [seven F1 circuits, plus the postponed Pau Grand Prix and a return for 2020 to the Sicilian outpost of Enna-Pergusa] and a good race format [simply two qualifying sessions and two races per event]."

The trick for Dallara was to apply everything that was so good about the previous F312 generation of F3 car to the 320, while adding a halo for driver protection. By using titanium for the halo, it found that it could do so while adding a minimum of weight. When a series of FIA-requested safety updates were introduced to the F312 for 2017, the F3 championships went conservative – to Dallara's chagrin! – in raising their minimum weight limits. The upshot is that for 2020, even with the addition of the halo, the EFO minimum weight has been reduced from 580 to 575kg – 75kg lighter than the slower FRegional car, and 90kg below the FRenault...

"Our customers asked, 'Do you have something for us?'; and we responded by designing a car for them," says Jos Claes, Dallara's long-time F3 project leader and all-round category guru. "The idea came from the Japanese F3 Association and GT Sport [the Madrid-based company of Jesus Pareja, which promotes EFO]. At first I said, 'We don't have a Regional F3 car', and they said, 'We don't want a Regional F3 car – we want something better. Invent the car!'"

While the 320 had to be designed to FIA safety standards and homologated with the governing body, Dallara was no longer having to adhere to an FIA rulebook on F3 design, whereby theoretically it would be in competition with other constructors. EFO has always run to a spec-chassis format, but Dallara was also given word from the JF3A that it would not allow chassis competition either. "We opted not for F3 regulations on safety, but for F1 safety standards because that gave a little more freedom in the design," continues Claes. "We had no reason to look into the dimensions of the monocoque of an F3 Regional car, because it is not an F3 Regional car – it is a standalone thing."

This also allowed Dallara to look for more performance. "For 2012 we were designing an F3 car for an open market," points out Claes. "Now it is not an open market, and in a way the technical challenge has changed in character. We were suddenly free. We wanted extra downforce and we did it, not through 150 hours in the windtunnel, but through easy steps."

As a comparison, during 2010 and 2011 Dallara spent what Claes estimates to have been more than 800 hours in the windtunnel on the F312, but this was investment that could be recouped: "With most generations in the past we sold 100 cars. This time for sure we will not even reach half – we will reach 35 or 40. So



RC/NEW PHOTOGRAPHY

Claes is Dallara's long-time F3 technical 'guru'

the amount of money available to develop this car was limited."

One example of Dallara's freedom in building a spec car was changing the dimensions of the stepped floor. This was FIA-mandated in 1995 at 50mm and cost "a lot of efficiency", according to Claes. "Now we don't need to repeat that, so we reduced it to 35mm and immediately gained back downforce. You can permit yourself this when you have freedom in design. It's not that we don't want to face competition – we enjoy it – but in this case it was our promoters who opted for single-make."

Cost has gone up for a rolling chassis from just below €120,000 for the F312-generation car to €138,800, although those with the older hardware can buy a kit to upgrade to the 320 for €85,950 – Claes says that around 50% of cars that will race this year are all-new; 50% are upgrades. With regulations potentially locked in for several years, that represents a small depreciation per annum, but Rumpfkeil says: "Everything comes for a price. We kept our old [F312] cars for quite a bit, but it's romantic to look at racing a car for eight years. Our old monocoques were just standing in a workshop [and replaced by newer ones]. Over the circle of life you have to renew parts if you want to stay at the sharp end of competition."

The 320's first shakedown was undertaken at Varano – just across the gates from the Dallara factory – by two-time Macau Grand Prix winner Dan Ticktum. Dallara needed an engine, so Double R Racing brought a Mercedes-derived HWA powerplant, and added into the bargain a pilot who team boss Anthony 'Boyo'



Dallara expects to build around 35 cars for 2020, but that number could grow in the years ahead



Hieatt describes as “one of the fastest F3 drivers ever to walk the planet”. Ticktum had a 150km whisk in the older car at Pembrey before making the trip to Italy. “He said the 320 felt like the old car, which was good news,” says Claes.

That has been echoed among the teams, which conducted limited testing of the car before Europe shut down owing to the coronavirus pandemic, but have already found it to have a small edge on performance over its predecessor. Fortec Motorsport shook down its two chassis at Valencia with 2019 Aston Martin Autosport BRDC Young Driver of the Year Johnathan Hoggard, who is tipped to add an EFO programme with the team to his Asian Carrera Cup campaign. “It was fast out of the box,” says Fortec team manager and engineer Mick Kouros. “It’s by far the best car Dallara have ever built. It’s easier to work on because there’s more room around the chassis, and they’ve improved a lot of things. The bodywork fit is really good now, for example. You get what you pay for, and if you see this car in the flesh and work on it you appreciate that.”

Hoggard’s former British F3 rival Ayrton Simmons is already confirmed with Double R, and has driven the 320 at Silverstone. “It’s a very similar feel to the old car,” says Hieatt. “We haven’t done enough running with it to know if it’s better in the high-speed, but his lap times were very competitive. It’s just incredible how late these things brake! It’s a lovely car, built really well, and it’s been produced lighter than the old car, so that’s quite an achievement. Hopefully the racing world will wake up to what this car offers.”



“It takes the same style of driving as the old car,” remarks Rumpfkeil, whose Motopark team crammed in four days at Estoril before the coronavirus curfew hit. “It’s the same philosophy – there’s a fair amount of carryover, and the rear suspension is the same as last year. Dallara did a good job of bringing in what was necessary to satisfy the latest FIA regulations on safety, but the car is more aero-efficient and quicker than the older one by up to a second, depending on the circuit characteristics.”

“It’s pretty much like the older car, and that’s why it’s for us pretty cool,” echoes Van Amersfoort Racing chief Frits van Amersfoort, whose team ran Alexandre Bardinon for two days at the Alcarras test track in Catalonia. This is VAR’s return to this arena, having been a European F3 regular up to 2018. “The changes are not so big – the biggest difference is the tyres basically,” adds van Amersfoort. “Without pointing a finger at Hankook [the old Euro F3 supplier], I can already say that the Michelin [for EFO] is a lovely tyre to drive, with more feeling and response.”

“THERE IS STILL ONE OF OUR NEW CARS IN THE DALLARA WORKSHOP AND IT’S OUT OF REACH!”

Driver-wise, apart from those already mentioned, VAR will run FIA F3 refugee Andreas Estner and the German’s younger brother Sebastian, of whom the team has high hopes after running him in Formula 4. Other continental F4 converts include Ido Cohen at Carlin, Niklas Krutten at Motopark, and Spanish series runner-up Glenn van Berlo at EFO loyalist Drivex. Reigning British F4 champ Zane Maloney makes a sizeable step with Carlin, while ex-British F3 racers Manuel Maldonado and Pavan Ravishankar are in the Motopark stable. Two of last season’s EFO frontrunners are set to stay on and dovetail this series with FIA F3: Cameron Das at Motopark; and possibly Lukas Dunner with new entrant Manor Competition (as an offshoot of MP Motorsport). Intriguingly, ex-Formula Renault Eurocup star Yifei Ye is expected to line up with Motopark after a miserable year in FIA F3. Carlin is tipped to retain 2019 Pau Grand Prix winner Billy Monger for another season.

Motopark found itself with six drivers signed at a fairly early stage of the off-season, meaning a tricky situation as teams are limited to a maximum of four in EFO. It was reminiscent of the Carlin conundrum in British F3 of several years ago – you’d like to think that drivers would be redistributed among other teams, but there’s a strong chance that they could be lost to the series completely if they were unable to join the dominant squad. The solution is an additional team that Rumpfkeil says “we will support in the best possible manner. We will have a technical cooperation with those guys.”

The only other gripe concerning EFO’s new era is, says Kouros, that “Bosch have put the prices up considerably of components” – from €23,000 for the electronics/gearshift package to just shy of €40,000, although for those opting for the update kit on the Dallara 320 the existing electronics can simply be transferred. Still, that’s a lower-percentage mark-up than we’re experiencing in the toilet-roll panic-buying pandemic. And the current Italian lockdown means Dallara has had to close its doors for now. “There is still one of our cars in the workshop and it’s out of reach!” bemoans van Amersfoort. Thankfully, enough spares have been shipped out to Japan for testing to be able to continue there.

Other than that, the future of EFO looks strong, particularly as the series operates very few testing restrictions. That could prove crucial to survival of the teams, whose season budgets are often at or close to their costs. “Jesus Pareja is smart enough to know that you don’t limit testing, because that’s how teams earn their money,” remarks Hieatt. And with the quality of the 320, there should be no shortage of customers for that. ❄️



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WORLD CHAMPION 1982



Talking to the 'cheapest' world champion

Keke Rosberg came out of a dramatic 1982 Formula 1 season as a surprising champion. In the 23-30 December issue of Autosport that year our then-Grand Prix Editor interviewed him

NIGEL ROEBUCK

Photography  motorsport
IMAGES

IT IS A WET DAY AT SILVERSTONE in March of 1978, and the *Daily Express* Trophy has dissolved into fiasco. James Hunt, Patrick Depailler, Clay Regazzoni, Niki Lauda... all the stars are out, and much of the catch fencing is flat. In the John Player Team Lotus motorhome there are long faces, for Mario Andretti and the new 79 have slithered out of the lead at Abbey, and Ronnie Peterson, too, is out, unhappy with a car hastily refettled after a warm-up shunt. Mario and Ronnie stare out absently through rain-soaked windows. "Who's leading?" says someone. Colin Chapman thinks for a second. "Ro... Ro... Rosebury?" he ventures...

"That day taught me a lesson," said recently crowned Formula 1 world champion Keke Rosberg. "I always thought I was going to make it in the end – that was why I took the Theodore drive. I had no backing, and it was the only way for me to get into F1. Eddie Cheever didn't want the car. OK great, I'll take it! I even got paid for it.

"So I won my second race in the car, at Silverstone. Does it really matter what the circumstances were? I mean, at least I stayed on the road! Emerson Fittipaldi was second... I was a bit pissed off that Brett Lunger was third [*fourth – ed*]... but Emerson was second, and I was battling with him for the last few laps. So I thought that things were working out quicker than I expected, but I was in for a big surprise at the end of the season... By then Silverstone was forgotten, and people only remembered the races where I hadn't qualified.

"OK, I thought, it's going to take a bit longer. The important thing was to keep busy, drive in F2 here, Can-Am there, a race in Japan, all kind of things. Who knows what they might lead to?"

In fact, Rosberg's eventual arrival at the top took much longer than he expected. Four seasons with, at best, indifferent Formula 1 cars brought no success. At 33, he was in danger of being passed over.

"Last year, 1981, was the worst of all. I'd been around for a long time, and I was *still* not qualifying sometimes. Everything was wrong. I tell you, in my last year with Fittipaldi I was terrified. I was a very scared man, and I found that interesting because I didn't really know why. It wasn't that I thought the car was bad. It wasn't a matter of details, although I had two or three suspension breakages. Perhaps it was because we were not achieving anything, either, and the motivation wasn't there, that feeling that you're part of the gang in a competitive sense. I wasn't getting paid, so I had to fight for every penny, with a lawyer to help me. So

everything was wrong, and I'll admit to you that I became bloody terrified. I still don't know what caused that to happen to me. It took me half a year to forget it completely."

Working with a car designed by Patrick Head must have helped, I suggested, bearing in mind the overriding consideration he gives to safety. "Not really," Keke replied. "I know Patrick is very safety-conscious, but so is Harvey Postlethwaite. The problem was that Harvey left Fittipaldi early in the 1981 season, and it was later in the year that we had troubles. I moved to Williams, but even then my problem didn't disappear overnight. It wasn't until the early part of the summer that I was able to *enjoy* driving race cars again. I've never understood what the problem was, but I don't think it showed in my driving, simply because the will was so much stronger than the fear."

By the end of the 1981 season Rosberg was becoming depressed, starting to believe for the first time his big break was never going to materialise.

"We'd been so far off the pace at Fittipaldi, often not qualifying – and that gave you no chance to show people how you could race! Towards the end of the year I couldn't see where I would get a good drive. I had talked to Frank Williams, but at Montreal he told me that his team was settled for 1982. There was also a possibility of going to Ligier, but I heard at Las Vegas [scene of the final round of 1981] that Cheever had got that. And I had a small hope of McLaren. I had been a Marlboro driver for a long time, and obviously I had to be on the list somewhere. But realistically I knew Ron Dennis would never take me because he needs a big star around him, and I certainly wasn't a star at the time. Then Niki came back and that was the end of that.

"Then, after Las Vegas, I heard that Carlos Reutemann had retired, and I thought, 'I bet that wasn't in Frank's plans', and got in touch with him again. A little while later he called me to go testing at Paul Ricard."

So here was the big chance. There was no commitment from Williams, merely the offer of some testing, but Keke well knew what might come of it. In the circumstances you might have expected him to feel the pressure, but he says not.

"No I enjoyed it. I got a fantastic reception from the team, I must say, and that made a hell of a difference. There was no suggestion that the big stars had gone and now they were stuck with me. I travelled down with them and got to know them. And when I got there I forgot about the implications. It was simply a three-day test. >>

“What worried me a bit was that neither Frank nor Patrick came to Ricard, because I thought they were ‘the team’. But I was fairly sure that the reports on me would be good, and finally Frank called me. He was just off to Saudi Arabia and was in a rush. ‘You can have the drive,’ he says. I said, ‘Frank, we haven’t even talked about money or anything yet – but I’ll take it!’

“He was away about seven days, and then we had our meeting. I was a bit worried about the money, but sure, I could get by. What Frank offered me was not really a lot... I said, ‘Come on, we can’t do it this way. You’ve got to offer me a living!’ We talked for three hours, and Frank agreed to pay me exactly what I wanted. He was very fair with me because, let’s face it, he could have said, ‘Take it or leave it,’ knowing the position I was in. I probably would have taken it.”

So the deal was struck, and Keke came away with a contract for one year, Frank taking an option on a second season, which he decided to exercise as early as last June.

“Frank will tell you that I’m the cheapest world champion that ever was! But I can’t cry that I’m not paid enough. We did a deal,

“FRANK WILL SAY I’M THE CHEAPEST WORLD CHAMPION EVER. BUT I CAN’T CRY I’M NOT PAID ENOUGH”

and I agreed to it. I would do the same thing again. All Frank’s promises to me have been kept. But he already wants to discuss terms for 1984 – and *then* I want my real market value. He offered Alan Jones incredible money to come back, and I don’t want him to think that now he can get world champions cheap! I’m asking Frank for less money than he offered Alan at the end of 1981.”

Elvis and his ‘Memphis Mafia’ always used to wear badges bearing the legend ‘TCB’. Taking Care of Business. It would be easy to envisage a similar thing on Rosberg’s light grey track suit. If this actual retainer is comparatively low, his overall income is not. He doubts that any grand prix driver, save Lauda, earns as much as he does, and he puts this down to plain hard work.

“I’ve always loved the business side of my life – in fact, I enjoy it as much as the driving. To me, the two are equally important, and I wouldn’t be happy with just one of them. And I do work *bloody* hard. It’s been necessary. When I got into racing I decided that racing had to work for me, because I had no alternative! It’s true that I’ve never paid for a drive, partly because of pride and partly because I never had the money, anyway. I’ve made sure that I’ve always been well paid. Sure, I’ve lived well, but I’ve worked for it, done my own deals, and that’s the way it is now.”

Certainly, all the trappings are there. A year ago Keke bought a glorious house in Berkshire, and he also owns a villa in Ibiza and apartments in Monte Carlo and Los Angeles.

“I love this place,” he says, gazing through his study window at endless green beyond, “and I’ve always loved English people. Where else can you live like this, with so little hassle? The only problem is that I’m so seldom here. And my place in Ibiza... I guess I’ve been there for three or four days this year, not more. Crazy, isn’t it?”

“For the first time in years I have a garage to keep all the toys in.” The ‘toys’ include a Ferrari 308 GTS, a Stallion (an AC Cobra-copy bought in California), and sundry motorcycles. He also had a Mercedes 500SLC with all the flash AMG bits on it, but says regretfully that it has been sold “with only 2600 miles on the clock. I never had the time to use it.”

At the time of my visit Rosberg was fretting about the endless days spent registering his latest aeroplane, a turboprop Cheyenne. “I had my schedule all worked around it, and I still can’t use it. I’ve got to be in Paris tonight, Bologna tomorrow, Helsinki on Sunday, back here on Monday...”

“When the plane is operational, it will be fantastic. A turboprop is a bit slower than a jet, but much cheaper to run. It uses about half as much fuel, and you can use smaller airfields. I tell you, learning to fly was the best thing I ever did. It changed me. I find it tremendously relaxing – you forget any problems you might have because you must concentrate so hard.

“I was terrified at first, a real ‘white knuckle’ pilot, but now I love it. >>



“Everything was wrong” – 1981 season with Fittipaldi was Rosberg’s nadir. He even started believing his big break would never happen

SUTTON



Rosberg survived a soaking Silverstone to win the 1978 International Trophy in a Theodore – and then learned an important lesson when the world didn't wake up to his talent



Williams made great progress developing the FW08, producing “a fantastic race car”. Slow corners weren’t its strong point, but it was “tremendous” in the quick ones



Rosberg no fan of de Cesaris, especially after being blocked in Monaco. Later incident at Dijon provided a salutary lesson after de Cesaris’s antics caused Rosberg to lose his temper and go berserk in car

It means that flying can be fun. Unfortunately, though, I don't have the time any more to plan flights and so on, so I have a pilot working for me, and I can fly when I feel like it.

"On the Marlboro tour, you know, Niki did all the flying himself, and I must say I was impressed by his stamina. The other extreme was John Watson, who doesn't work very hard, let's face it. He drives race cars, and that's all. Good luck to him. By the end of the trip, though, John looked 60 years old!"

This Marlboro tour, a frantic series of whistle-stop press conferences around Europe, was all part of the job to Keke. He takes a thoroughly positive attitude to being world champion, unlike his predecessor.

"There are two ways of going about it," he says. "Nelson Piquet likes driving racing cars, and that's it. He doesn't want to know about anything else, and he's happy in his own way. I couldn't do that, because I'd feel I was doing only half a job. Niki has changed a lot in this respect. Like he says, he gets \$10 for driving and however many millions for publicity! I understand that, too, and I know that the harder I work, the longer I'll be associated with my sponsors."

In saying this, Rosberg is looking beyond his driving career, retaining links with companies after his eventual retirement. Jackie Stewart has done this with immense success, of course, and Keke respects him for it. However...

"Jackie handles his business incredibly well, and I admire that, even if he has been very critical of me in the past, which has not helped me *at all!* That was why I lost the Carl Haas Can-Am drive for 1979. I had a signed contract with Haas, who then calls me to say it's all off and he's having Jacky Ickx instead. I called my lawyer in Boston and told him to go for it as hard as possible.

"Well, I tell you, Haas was shaking. He was calling me all round the world, telling me that he's one of Bernie Ecclestone's best mates and he can do so many things for me – so long as I don't burn my bridges. I said to him, 'Listen, if I can't make it without you, I'll never make it.' Eventually I signed for Paul Newman's team, and that was the end of the lawsuit. But this hate from Haas – because I had the courage to start proceedings against him – was so strong that when he heard that Frank was thinking of signing me he called several times to say he shouldn't take me. He took the trouble to call from Chicago for that.

"So there we were at Las Vegas, about two hours after the race. I'm checking out, and there, at the reception in Caesars Palace, is Haas, big cigar in his mouth. He comes over with a broad grin and, 'Oh, I always knew you'd make it!' I said, 'Carl, you are the same guy who took the trouble to call Williams, saying not to sign me. Is that correct?' Well, he caught his cigar just before it hit the ground... and then I said, 'Today I won the world championship, but my biggest pleasure of the whole day has been to see your face.' And then I left."

Rosberg, as you can see, is an immensely self-assured man, chirpy and full of humour, but also a character of steely resolve. His mind is sharp, and he loves to talk – "Yes, as long as I know what I am talking *about*. If I don't, I shut up, and I wish the same was true of some of the people I have worked with."

For a long time, during his days of Formula Vee and Super Vee, he lived in Heidelberg, quickly becoming fluent in German. His manager, Ortwin Podlech, is based there still, and Keke raps away to him constantly on the phone, reverts to Finnish for a couple of minutes to speak with Yvonne, his girlfriend, and Jan, his pilot, then comes back to the interview: "Now, where were we?"

His English is perfect, too, to the point that he *thinks* in the language, and this allows him to be very quick on his feet when it comes to the quick rejoinder. I recall the press conference after Vegas...

"Keke, did you find the track different at all this year?"

"Yes, sure, I thought it was much better than last time?"

"Oh, really? Why is that, Keke?"

"Well, since last year we've been to Detroit..."

Languages, then, have always come easily – "I said to Ligier, give me two months and I speak French, no problem" – and Rosberg has always used them to speak his mind. After winning at Dijon, the joy of the moment was almost swept aside by the antics of Andrea de Cesaris, who stubbornly refused to let Keke lap him.

"I learned a very good lesson there, because I actually lost my temper.

I went berserk, and that is a very dangerous thing to do in a race car. De Cesaris was going to make me lose that race – he cost me 12 seconds or something, which is why I only passed Alain Prost two laps from the end. It reached the point where I was banging my front wheels against the sidepod of his car – at 170mph at the end of the straight! That was as close as I could get because the Alfa was quicker in a straight line. How do you get the message to a guy like him? Afterwards he says he thought I was Derek Daly, racing with him – for 10 laps!

"When I came into F1, the basic etiquette was that you challenged a guy into a corner, but you never closed the door and you never weaved on the straight. You didn't behave like Formula 3 guys, in other words. You kept your line, and if you braked later it was your corner. If not, the other guy was going to take you – and you didn't close the door. Last three laps do whatever you want. That's the way it was, and I learned it there and then.

"Now I don't know what's gone wrong. F1 today is like F3. There's a lack of discipline. So now we have a great association like the Professional Racing Drivers' Association. You know who is the loudest member at the meetings? Mr de Cesaris... he thinks he leads the whole bloody group."

"I DON'T KNOW WHAT'S GONE WRONG. F1 TODAY IS LIKE F3. THERE'S A LACK OF DISCIPLINE"

After Dijon, Rosberg and Lauda (who was similarly delayed by the Italian) decided to put in a report to FISA, but Keke never got around to doing it, which he now regrets.

"If I'm honest, after Dijon everything but the world championship went out of my mind. And the other thing is that I was ashamed of myself for losing my temper, because I'm well aware that I could have caused an accident myself that day. I think FISA should have taken action, anyway, but that doesn't excuse the fact that I neglected my report.

"Andrea, you know, drives quite well these days – in terms of being quick. But he *will not learn* from his mistakes. At Monaco I was behind him and the only place I could think of overtaking was the tunnel at the approach to the chicane. Several times I got alongside – and what does he do? He edges me over into the barriers. Earlier I had been behind Michele Alboreto. I showed Michele that I was quicker, and he let me through. But de Cesaris – no way.

"Now this is not racing. This is not being a hard racing driver. Gilles Villeneuve was a hard racing driver, the toughest bastard I ever knew! If I'd have been in that position with Gilles at Monaco, he wouldn't have lifted – but he wouldn't have moved over on me, either. And that's the difference – apart from the fact that Gilles was about 10,000 times better."

It is inevitable that comparisons are made between Rosberg and Villeneuve, both out-and-out racers. Keke remembers Formula Atlantic battles with Gilles as the most enjoyable days of his racing life.

"I had enormous respect for Gilles – not that I ever admitted it, of course! We had some *incredible* races in 1977, and we never spoke to each other, believe it or not. We wouldn't even say hello to each other. Perhaps it was a competitive thing, I don't know. But it seemed like we hit each other in every race. I remember one race at Edmonton, where he was on pole and I was second. He took the lead and I was chasing him. Now my Chevron wasn't *quite* as quick as his March, and when he missed a shift I knew that was my only chance to get by. I took him, but he wouldn't give up! We came out of the corner side by side, and we hit each other because neither would lift. Off on the grass we went, one on each side of the road, came back on at the same spot – and hit each other again! At the end of the race there was a round piece of my sidepod missing, cut cleanly like a piece of cake. That had been Gilles's rear wheel.

"And, you know, I found myself thinking of that again at Zolder this year. I heard about the accident, knew how bad it was, and it was difficult for me to concentrate. At a race a driver is very absorbed in his own thing, you know. A driver is there in a very egotistical capacity. I am there to look after Rosberg. But that weekend was very difficult, very poignant. We had so many battles, and now here I was, leading a GP for the first time, >>>



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and he had died the day before. I had to work hard to put it out of my mind during the race, I can tell you. But it didn't really hit me until the Monday, when I had to go to the track to do some pictures. And all that was left was garbage and Gilles's helicopter."

For a long time now I, and others, have been very critical of qualifying tyres, hopeful that one day they would be banned. Rosberg disagrees with this, although he goes along firmly with the contention that, at any rate, qualifiers should not be limited to two sets.

"That's the *real* danger, having only two chances to set a time. But if you banned qualifiers, everyone would simply use new race tyres, when they're at their quickest, so it wouldn't solve the problem. I think we should have *unlimited* qualifiers, so that you can sacrifice a lap if necessary. Yes it would cost the tyre companies more, but so what? They're the people who want qualifiers.

"I've had an idea for some time now that different types of tyre should have different colours. Rubber doesn't have to be black, after all. You could have white for qualifiers, red for soft race tyres, black for hard race tyres and so on. Think how good that would be for the public's understanding of what was going on. They would know that so-and-so was leading by 10s, but that was on soft tyres, and that the guy behind might be in better shape later in the race. I think it would help enormously, provided you could get everyone not to cheat, of course. The public would love it – and it's the public we're there for, after all."

The public, I suggested, were given scant consideration at Imola when

"IT DIDN'T REALLY HIT ME UNTIL MONDAY. ALL THAT WAS LEFT WAS GARBAGE AND GILLES'S HELICOPTER"

most of the Formula One Constructors' Association boycotted the event after FISA's decision to ban water tanks and to disqualify Piquet and Rosberg from the Brazilian GP. Keke considered his words carefully.

"First of all, my heart said that we had to fight for Brazil. I don't mind rules being changed, but I don't see how you can change them retrospectively. It was crazy to disqualify Nelson and me from Rio – and allow all the other 'water tank' cars to stay in the results. That moved Watson up to second for instance, which was the only reason he was in contention for the championship at Vegas!

"Having said that, I was surprised at Frank not going to Imola. Before anything else, the aim was to win the world championship, and you can't do that if you're going to miss races. *Of course* there were going to be points for Imola! By not going we could easily have lost the title. As well as that, I had two personal Italian sponsors, so it was a difficult situation for me.

"Frank was also in an awkward position. You have to remember that Patrick Head had given six months of his life, night and day, to FWo8, which he designed with the rules in mind as they then were. And he came



up with a fantastic car. In its original form it was amazing, quicker on race tyres than the Renaults were on qualifiers. And when Patrick heard of FISA's decision he went into orbit. I think they all wanted to get across to FISA the extent of their anger."

It took time for Keke really to settle down in his new team. At Zolder, he says, he and Frank had a screaming match during practice, but since then their relationship has been perfect.

"Frank works incredibly hard and I respect him very much in most ways. I always know that I will have the best equipment available to me. Whatever it takes, Frank will get it, and that is something I had never experienced before. He is a very reasonable man to work for, too, and I think the team settled down into a very happy atmosphere as the season went along."

Knowing both Williams and Head are obsessively anti-smoking, I asked Rosberg how he got away with it. Keke dips frequently into his pocket, one of very few modern GP drivers hooked by the weed.

"Ha! Well, I remember Charlie Crichton-Stuart – who also smokes – saying to me, 'For God's sake, don't light a cigarette until you've signed the contract!' After that you can chain smoke in front of him. No, it's not a problem. They don't like smoking in the motorhome, but I understand that. It's a confined space. Before the season I think Frank was worried that anyone who smoked might not be fit enough, but after Brazil it was never mentioned again."

Rosberg is plainly at home in the environment of the Williams team, finding fault only with its members' attitude to PR and promotion work. "I've said this to them, and I don't mind criticising them for it now. It's fine now when our sponsors are not necessarily the most commercial worldwide people, but the day may come when we have to go after companies like Coca-Cola, and I've been trying to get across to them the fact they must do PR – not for me, but for the Williams team. Make the team known."

"The same thing is true of this ridiculous anti-French thing. I do think the French journalists are biased towards their own teams and drivers, but one of the reasons I did the saloon car race at Montlhéry was to show the French that Rosberg is not an iceberg! Anyone who drives for Williams gets this anti-French brain-washing and I think it's ridiculous. They think it's all a joke. I'm not anti-French, but then I'm not English. I feel international, quite honestly, cosy anywhere."

Keke is also cosy with his success, and it is a pleasure to find a driver who takes an unashamed pride in what he has achieved. In his study are trophies and mementos. The walls are covered with framed photographs, some of himself, others of people and cars important in his life. Since the beginning of his career, Lars, his father, has devotedly collected press clippings, pasting them into scrapbooks which chronicle Keke's racing life. At present there are 80, and half a dozen carrier bags' full await attention.

"My father has always been my greatest fan, I think. In fact, he has just >>

Disqualification from second place in Brazil (along with on-the-road winner Piquet) promoted Prost to the win – and triggered Imola boycott

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SCHLEGELMILCH

Rosberg was very much at home at Williams and had a lot of trust and confidence in Frank Williams and Patrick Head – although the team’s “ridiculous anti-French thing” was a puzzle



SUTTON

published a book about me, written in the name of ‘Lauri Temu’. He was a vet, and he always said he would like to write when he retired. I think he’s done a very good job on it.”

The telephone rings, and Keke starts discussing crash helmets, placing his order for next season. He wants half a dozen, all with the smallest window possible. “I have an absolute horror of catch fence poles. In fact, the whole concept of catch fencing is primitive, considering that nowadays there are nets capable of stopping jets. And I don’t like tyre barriers, either, because they throw a car up into the air. Didier Pironi had a huge accident at Paul Ricard in June, when the car went end over end purely because it was launched off a tyre barrier. I’d rather take a chance on hitting Armco barrier once or twice.

“Whatever people might think, I’m actually a very safety-conscious man in a race car. I’ve been around a long time, and I don’t want to get hurt. I left the Grand Prix Drivers’ Association at the time of that protest at Zolder in 1981, which I thought was irresponsible, and I haven’t rejoined the PRDA because I don’t consider it serves my safety needs. But that doesn’t mean I don’t take safety very

“I’M NOT GOOD WHEN I’M TIRED. I’D NEVER DO LEMANS. MULSANNE IN THE NIGHT, RAIN, 350 AMATEURS...”

seriously. I dislike catch fencing because I’ve seen what it can do. At Buenos Aires in 1980 I crashed in practice, and one of the poles completely destroyed my helmet.”

One of the secrets of his success, Keke says, is knowing his limitations and making the most of his strengths. “For the first two hours of every day I make a point of not doing anything important. I’m not good at that time of the day, and I must recognise that, allow for it. A couple of years ago I got up early and went testing at Snetterton – and I wrote off a brand new Fittipaldi in the pitlane! I was going to take the chicane in fifth, and then decided to come in! There is a little chicane in the middle of the pit approach road, and I was never going to make it in fifth. I’m not good when I’m tired, which is why I would never do Le Mans. Mulsanne in the night, rain, 350 amateurs on the track... no, thank you!”

He looks to the future with confidence, considering that his chances next year should be even better than in the season past.

“I’m pleased with the new regulations, mainly because we were reaching a point where spectators were going to be hurt, and that was unacceptable. We’ve got a lower weight limit for 1983, and more power from the Cosworth. I think the non-turbos are going to be much more *driveable* than the Renaults and Ferraris – a bigger difference than in the ground-effect days.

“And I’ve got much more confidence in the team. Look at the progress we made with FW08. After the rule change about weight, it was a very difficult car for everyone – engineers and drivers. Very hard to set up properly. And because it was so nervous, I drove it more sideways than was desirable. With all that downforce *and* being sideways, it would destroy its tyres. But Patrick, Frank Dernie and everyone worked away the whole time, and in the end we had a fantastic race car. It was never good at turning in to slow corners, but on quick ones it was tremendous. During the last 20 laps in Austria, when I was chasing Elio de Angelis, it was perfect. And that’s the thing about driving for Williams. You always have this confidence that nothing will be wrong for long, that people are working away to solve your problems.

“I feel good about next year, pleased that Jacques Laffite will be with me. I think I’ll be able to work well with him, but in the race we’ll be rivals, just as if he was still in a Ligier.

“I feel I need a rest now, some time away from the phone. Yvonne and I are going to a deserted Caribbean island for three weeks. It’s been a tough year.”

The telephone goes once more. “Yes, yes, I wanted to speak to you about this flight on Sunday. Now look, I must be in Helsinki by mid-afternoon on Sunday. It’s a strong commitment. Would you see if there’s any earlier flight from Paris? Thanks. Talk to you later...” ❄

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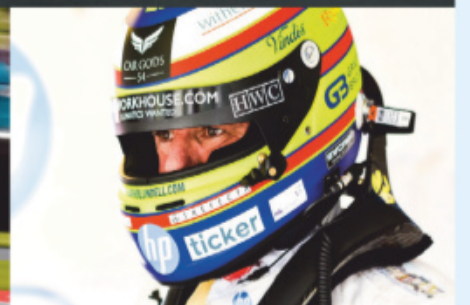
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ESPORTS AND TABLE-TOP RALLYING ON THE RISE



Britcar is among the national series and clubs to set up their own Esports categories

CORONAVIRUS

The Britcar Endurance Championship is among the UK categories and organising clubs to launch their own online racing series amid the coronavirus-induced delay to the start of the season.

Details for the Britcar ESeries are due to be finalised in the next few days but it is likely to mirror rounds of the championship that have been postponed due to the coronavirus pandemic. This includes Donington Park and Silverstone as well as the non-championship round at Spa. The first event is scheduled for the week following Easter.

Races totalling 30 minutes will take place on PC via the *Assetto Corsa* game with registrations for the category's teams and drivers set to open soon.

"It's been something on the backburner since day one but it's not an area I know very well," said Claire Hedley, Britcar's managing director.

"David Hornsey [championship technical manager] has been talking about it and at least five people have asked, 'Why don't you do it?' We have had it in the back of our minds and some people suggested taking it a step forward and now we have more spare time it's going to be really good fun.

"We're trying to follow the calendar but David has suggested doing a mid-week date so we might do one on a Wednesday and then another on a Saturday.

"Dunlop [championship sponsor] are supporting it, they want to see our competitors busy because the isolation is an issue."

The Classic Sports Car Club is another to launch its own informal Esports category. Named the Virtual Racing Series, it will use the *Project Cars 2* videogame and is open to contestants with an Xbox One, PlayStation 4 or PC.

The first scheduled round is set to mimic the original 2020 CSCC calendar by taking place at Snetterton and players will race in Renault Clio Cup cars.

Others following suit include the Junior Saloon Car Championship and the Scottish Motor Racing Club.

As well as online racing, table-top rallies have also proved popular during the break in motorsport activity. The Historic Endurance Rallying Organisation is running six weekly competitions, which include plotting regularity tests, and the £5 entry fee is being donated to the NHS Charities Together fund. By the end of last week, 174 competitors had taken part.

"The classic and vintage rally community are as determined as the rest of the motorsport sector to play a part in the fight against this deadly virus," said HERO events managing director Patrick Burke. "We are working on other fundraising and help programmes that will hopefully engage the classic rally community as the Table Top Rally has managed so far."

STEFAN MACKLEY, MATT KEW AND STEPHEN LICKORISH



Another CSCC meeting is axed

CLASSIC SPORTS CAR CLUB

The Classic Sports Car Club's race meeting on the Silverstone National Circuit has been cancelled due to a clash with the rescheduled World Endurance Championship round.

Amid the widespread calendar disruption caused by the spread of the novel coronavirus, the six-hour UK round of the WEC has been brought forward from 5 September to 22 August.

A statement from the CSCC to its competitors read: "Work has already begun on securing another venue, ideally on the same weekend. It is our aim that all of the CSCC series due to race at Silverstone

will be accommodated at the new event."

This is the second time the club has been forced to call off a weekend at Silverstone, after its 2013 meeting was halted when the circuit announced a planned 24-hour cycling race, which was never held due to insufficient entries.

Although the CSCC's Snetterton test day last month went ahead as planned, its opening four events have been cancelled, with competitors receiving a full refund.

While the Spa meeting in June is vulnerable, it is hoped the CSCC will still be able to race overseas on the Le Mans Bugatti layout (16-18 October), and at Mallory Park (1 November).

MATT KEW

HSCC LAUNCHES HERO AWARD FOR STAR VOLUNTEERS

HISTORIC SPORTS CAR CLUB

The Historic Sports Car Club has introduced a new Hero Award to recognise club members who have gone above and beyond during the difficult times brought about by the coronavirus pandemic.

The award is open to individual members or to any of the club's series or championships that have made an outstanding contribution to the community or motorsport during the current tough spell.

The winners will be presented at the annual awards dinner at Sywell in November.

"Our sport is quite rightly on shutdown at the moment, but club members will still be active in many ways for the good of the community," said club CEO Andy Dee-Crowne. "We'd like to show our appreciation for those who are working to help others at this most difficult of times.

"We are a community brought together by a shared passion and we have a number of older competitors and officials who are considered to be at greater risk. So, we felt it would be appropriate to recognise those making a major contribution."

The club is also helping to use its network of members across the country and beyond to try and support fellow members who may be struggling.

"We have members all across the country and all over the world," Dee-Crowne added. "If any of our members need help, we will try and find someone in their area who can give the support that is needed."

Those wishing to nominate someone for the Hero Award can send their suggestions to andy@hsc.org.uk



Festival of Speed is postponed

GOODWOOD

Goodwood's popular Festival of Speed event is the latest motorsport fixture to be postponed due to the global coronavirus pandemic.

The 9-12 July event attracts around 200,000 spectators and features a hillclimb competition, along with countless demonstration runs and a wealth of static displays.

On Tuesday last week, Motorsport UK announced that all event permits would be suspended until the end of June at the earliest.

But Goodwood organisers have now taken the decision to postpone the Festival of Speed amid uncertainty over when restrictions on

mass gatherings in the UK will be lifted.

"Over the last few weeks, we have been working together with everyone involved to understand the viability of the Festival of Speed going ahead in July," said the Duke of Richmond.

"Due to the uncertainty of the coronavirus threat and not knowing whether the situation will have significantly improved by then, we sadly need to postpone the Festival of Speed."

The event is now set to take place in either late summer or early autumn. The Festival of Speed is the second of Goodwood's three main events to be affected by the COVID-19 outbreak, after its Members' Meeting – which was due to take place last weekend – was also postponed.



BTCC champion Harvey to share Ford Ka with son



ENDUROKA

British Touring Car champion Tim Harvey will contest a part-time EnduroKa season alongside son Jamie this year, but plans for a Porsche Sprint Challenge GB entry are set to be shelved.

Harvey, the 1992 BTCC champion, tested a 1300cc Ford Ka in February and has signed up to race alongside Jamie and David Tan – a frequent trackday driver from Dubai.

Harvey Jr contested three rounds of the Citroen C1 Challenge last season, while Tan has never previously held a racing licence.

The trio will use a rented car from LDR Performance Tuning following a recommendation from 2015 Le Mans 24 Hours winner Nick Tandy, who won the IndyKa 500 contest last year.

“I drove the Ka at Brands Hatch and thoroughly enjoyed it, actually,” said Harvey Sr. “I managed not to frighten myself in it. I was pleased that it wasn’t flat out everywhere, there’s a lot of driving technique involved.

“You have to totally refine your driving style for minimum tyre scrub, maximum forward momentum, using the brakes as little as possible but getting the car rotated and getting back on the throttle immediately.

“I was honestly very surprised. I came into it thinking it would be like a Citroen 2CV and it was so much better than that. It’s a proper little racing car.”

The plan was to enter three rounds around calendar clashes, but that is subject to change depending on the revised MotorSport Vision Racing schedule.

But Harvey no longer expects to compete in the inaugural Porsche Sprint campaign in a 718 Cayman GT4 owing to backers withdrawing amid uncertainty following the COVID-19 outbreak.

Harvey added: “I’ve already parked it, to be honest. At the moment, unless a miracle sponsor comes on, I won’t be doing it.”

MATT KEW

Green to race BMW in new DTM Trophy category

DTM TROPHY

Ben Green will return to GT4 competition in a BMW M4 GT4 this season in the new DTM Trophy series, lining up against former team-mate Ben Tuck.

Sharing a Century Motorsport BMW M4 with Tuck, 2017 Ginetta GT4 Supercup runner-up Green fell one point short of winning the 2018 British GT4 title thanks to a pitstop penalty at Oulton Park.

The 22-year-old then stepped up to GT3 with Century last season with Dominic Paul, but endured a tough season in the team’s M6 with two fifth places at Oulton Park their best results.

Green will now return to the familiar environment of the M4 GT4 with the Bremen-based FK Performance Motorsport team, owned by Fabian Finck and Martin Kaemena, in the new-for-2020 series,

which supports the DTM at seven of the 10 rounds.

Tuck will also campaign a BMW M4 for Walkenhorst Motorsport.

The championship has recently released a revised schedule for its inaugural campaign in the wake of the coronavirus pandemic.

It was originally due to begin at Zolder on 24 April, but the season is now set to start at the Norisring over the weekend of 10-12 July.

JAMES NEWBOLD



BMW driver will swap GT3 for GT4 this year

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TOMMY CLAPHAM 1929-2020

OBITUARY

Tommy Clapham, who has died aged 90, hillclimbed his beloved Lotus Seven until circa 1999 and enjoyed driving his Porsche 911 to within days of his passing. His legacy is the Taydec sports racers with which he boldly took on the might of Chevron and Lola in the early 1970s.

Clapham started competing in the early '50s, with an MG TC. By the late '60s he was making a name running a race-prep business from an old bakery premises in Keighley in West Yorkshire.

The first Taydecs appeared in '70, the distinctive Mk2 powered by a 1600cc Lotus Ford twin-cam engine and driven by Clapham and Malcolm Payne. Despite the weight of opposition, the subsequent

Mk3 put the marque on the map.

F3 racer Peter Hanson finished sixth in Silverstone's '71 Martini International, a European two-litre championship round, then finished seventh at Dijon, sharing with Frenchman Francois Migault, before winning the Rouen GP.

After a third and a second at Paris' Montlhery in '71 and '72, the promising Taydec story ground to a halt when Clapham rolled his Mallock U2 at Shelsley Walsh, rendering himself out of action for months. By then he'd made a Formula Atlantic Mk5, but hire drivers had failed to qualify a Mk3 for Le Mans.

Tommy's wife Helen predeceased him, but the motorsport fraternity salutes him and extends sympathies to his daughters.

MARCUS PYE



Hanson raced a Taydec at Paul Ricard in 1971

IN THE HEADLINES

FOX BACK TO JUNIORS

Fox Motorsport will return to Ginetta Junior for the first time in three years this season. The team, which has enjoyed success in a variety of GT classes, last ran two cars in Ginetta Junior in 2017 but will now have a presence in the series again. It will run Liam McNeilly, the son of the team's founder Paul.

FORMULA FORD TO RADICAL

Former Formula Ford 1600 racers Will Alterman and Ian Ellis will team up in their own squad in the Radical SR1 Cup this season. The duo will be run by fellow ex-FF1600 man David Bailey in the new DB Motorsport operation. "Considering Will and I first met in a gravel trap at Oulton Park about 13 years ago, I'd say we've come a long way!" said Ellis. "We did enjoy our time in FFord but it felt right to move on."

JOHN GUNNING 1957-2020

We are sad to report the death of combative Irish Formula Fordster John Gunning, on his 63rd birthday. From Dublin's Rathmines suburb, 'The Gunner' was a rapid FF1600 pedaller at home in the 1980s. After a comeback in the mid-'90s, which showed that his pace was undimmed, his swansong came in the 2002 British Zetec championship in which he appeared with a Vector. Long based in the UK and living in care, Gunning had suffered with a brain tumour, which cruelly took his sight.

REYNARD'S NEW ROLE

Successful designer and club racer Adrian Reynard has been appointed as an honorary vice-president of the 750 Motor Club. Reynard began by designing Formula Ford machinery but went on to work on a variety of projects all the way up to Formula 1. He has raced his self-developed Radical SR3 (below) with the club in recent years. "The 750 Motor Club provided a great guide and inspiration when I first joined in the early '70s," he said.



ELSEY

BOB HICKS 1930-2020

OBITUARY

Bob Hicks, who died on 19 March, aged 89, was respected as a gentleman driver and constructor of racing cars.

Hicks was quick from his debut in 1955 with a Ford-engined Lotus 6 built from a kit. A Series 1 Lotus 11 was debuted in '56, when Hicks and pal David Piper embarked on a successful European racing tour. It ended abruptly when Bob rolled on a Sicilian hillclimb, but he escaped serious injury and rebuilt it for '57, when he won the Coupe d'Automne at Montlhery.

A used Eleven S2 was acquired for '58, when Hicks also raced Bill Frost's Lotus 15 and 11. He was leading the 1100cc class at Le Mans in the latter when he spun in

torrential rain at the Mulsanne kink and the car was wiped out by an Alfa Romeo. The following September, he and Dick Prior in the prototype Lola Mk1 completed a works one-two in the World Sportscar Championship finale, the RAC Tourist Trophy at Goodwood.

Hicks also entered a partnership with Richard Utley, who designed the rear-engined Formula Junior Caravelle, of which Hicks built three with Ford engines.

Tragedy ended Hicks' racing in 1962 as younger brother Joe died when his Lotus 11 rolled after wheel failure at Goodwood.

To Bob's wife Tessa and son James, who races a Caravelle skilfully, Autosport extends sincere condolences.

MARCUS PYE



Scottish club targets C1 boost as 30 sign up for 2020 season

SCOTTISH C1 CUP

The Scottish Motor Racing Club's business development manager Rory Bryant says he is confident of an increased Scottish C1 Cup grid for 2020 after receiving 30 registrations so far.

This year will be the second season for the one-make championship, which produced an average of 16 entries per round in 2019. Unlike its English

counterpart, the Scottish series predominantly features sprint races.

For 2020, Bryant anticipates an increase in grid numbers, which he believes proves the success of the championship.

"To get 30 registrations this early in the year is fantastic and it shows that the championship is popular, which is great," Bryant said.

"We think the average turnout will be stronger than last year and are expecting

around 20-22 cars per round."

Two series rookies expected to be on the grid this season are teenager Jamie Lewthwaite, brother of C1 Cup regular Elliot, and former Citroën 2CV racer Gordon Dundee making their championship debuts.

The season-opener is set to be delayed until at least the 4-5 July round after the first three meetings were postponed due to the COVID-19 outbreak.

STEPHEN BRUNSDON

Wilkinson joins Xentek's GT5 Challenge squad

GINETTA GT5 CHALLENGE

Successful Ginetta GT5 Challenge team Xentek Motorsport has unveiled a three-car line-up for this season, which features one-off US F4 racer Jonny Wilkinson.

Xentek powered Scott McKenna to the GT5 title last season, and Wilkinson will attempt to add to that success after setting the second-fastest time during the category's launch day at Silverstone last month, just a tenth of a second slower than pacesetter James Taylor (Elite Motorsport).



Wilkinson made his car racing debut in 2018 when he contested a part-season in Ginetta Junior before taking part in a one-off event in US F4 last year at Road Atlanta.

"I'm delighted to be back in the Ginetta family, driving a GT5 with the reigning

drivers' and teams' champion Xentek Motorsport," said Wilkinson (above).

"I've only had a couple of days behind the wheel and I cannot wait to get back racing."

Also part of Xentek's line-up will be fellow former Ginetta Junior

driver Conner Garlick. He was due to race with the team in the GT5 Challenge last year too, but a pre-season testing incident ruled him out.

"After not being able to compete with the team last year due to my accident, I am more excited than ever to get back behind the wheel and go racing," said Garlick. "We have been working hard over the winter to get me back up to speed."

Jesse Chamberlain, who contested a partial GT5 season with the team in 2019, completes Xentek's line-up for this year.





Playing the long game

The boom in Esports online racing has spread into the national racing world and shouldn't just be dismissed as a fad of our strange and difficult times

STEFAN MACKLEY

You only need two cars to have a race, so the saying goes. It's something that has often come to my mind over the past few years when I've covered a race with less than desirable grid numbers, which thankfully are few and far between.

But what about when there aren't even two cars to watch go around in circles? Unfortunately, the coronavirus pandemic has put us in that very situation and plunged national motorsport – as well as the entire globe – into uncertain times. What we'd give to see two cars race each other at the moment...

While the start of the national motorsport season is still some months away – the governing body, Motorsport UK, has suspended all events until at least 30 June – the rise in Esports has helped to fill the void.

Competitive online racing is nothing new, but the surge in the number of events over the past few weeks is unprecedented. Formula 1 and MotoGP have endorsed their own official series, and established real-world stars including Lando Norris and Marc Marquez have been taking part in their respective formats, which has helped bring a new audience to online racing.

But it's not just on an international level where Esports is being embraced. As you can read on page 58, the national motor racing scene has become involved, with categories such as Britcar and the Junior Saloon Car Championship, as well as racing clubs

“Who hasn't gone for a ludicrous overtake and ended up spearing into half a dozen cars?”

including the Scottish Motor Racing Club and Classic Sports Car Club, getting in on the act.

National drivers have already taken part, including four-time British GT champion Jonny Adam, 2017 Porsche Carrera Cup GB title-winner Charlie Eastwood and 2019 Ginetta Junior champion James Hedley – stepping in for Max Verstappen no less – with plenty more expected to compete on their home sims.

It's not unheard of for sim racers to try their hand at real-life racing – two-time F1 Esports Series champion Brendon Leigh is the most recent example as he joined Kevin Mills Racing in National Formula Ford 1600 last season – but it's less common to see it this way around. At least, quite so publicly.

There's been such a plethora of events that it's difficult to keep track of them all, but the promotional aspect is starting to improve.

And although the quality in terms of production and driving standards vary – Johnny Herbert's blatant cutting of the first corner of one event to take the lead comes to mind – it's at least entertaining.

But perhaps the biggest question now is what impact will Esports play in the future of motorsport?

There will always be drivers who look at the sport through rose-tinted spectacles, stating that it was 'better back in my day' and who have no interest in sim racing. Right or wrong, it's perhaps an archaic view to have and what these past few weeks have proved is there's an appetite – and certainly a market – for sim racing.

Consider the pros and cons. Esports offers you the chance to go to a variety of tracks around the globe and get behind the (virtual) wheel of any number of cars at just the press of a button. In-game chat and forums mean there is a community element as well, something fabled within club motorsport.

Yes, the cost of a top of the range rig is in the region of thousands of pounds, but running an actual car – with the added cost of storage, insurance and repair bills – could far exceed that over the course of a season. On the safety front, you're also unlikely to get hurt from the comfort of your own home.

There are downsides, of course. It doesn't provide the same buzz or adrenaline shot that travelling at 150mph in real life does, which is why thousands of people each year seek to go racing, including this writer.

In the virtual world, who hasn't gone for a ludicrous overtake and ended up spearing into half a dozen cars? All good fun on a game but not something to be taken lightly on a race track. This isn't to say Esports drivers are reckless or dangerous – far from it, as the top drivers have proven they can hold their own on a real circuit – but it's a different mentality and approach.

The rise in Esports could potentially be a blessing and a curse for Motorsport UK. It's no secret that more people are going to trackdays due to the ever-increasing cost of racing and that the number of people with a racing licence has been falling for years. So what's to stop the next generation of drivers staying at home on their sims? Or perhaps even current drivers, fed up with spending small fortunes and travelling the length of the country to get 20 minutes of safety car-interrupted track time from moving to the online world?

But while some may see it as a problem, others will see it as an opportunity and a way of attracting a new audience into the sport. If online racing can be used as a way of bringing new drivers to a real race circuit then that can only be a good thing.

Racing clubs and championships are embracing the Esports world now, but they shouldn't be so quick to dismiss it once the real-life racing actually begins. ✎

PROTOTYPE RACING FOR PEANUTS

Matt Nash has created his own low-cost machine, which is proving popular and achieving success in South Africa

MARCUS PYE



BEDFORD

Mainstream motorsport has always been beyond the majority's means. Not that financial reality ever dimmed competitors' aspirations. Thankfully, opportunities for the less wealthy still exist across the amateur racing world, in the spirit of the 750 Motor Club in the 1950s, and Major Arthur Mallock's basic but brilliant home-brewed U2s, fielded in Formula Junior to F2 and a mainstay of the Clubmans Formula from 1965. In these spheres, engineering ingenuity and passion transcended voracious appetites for cash, because they had to. That's apposite to South African club racing today, as evidenced by Nash Motorsport's budget brainchild, marketed complete for approximately £15,000 including VAT.

Cheap obsolete production cars open track gates and attract a following. But they tend to be functional rather than sexy, compromised beyond their comfort zones on the road. That's where Johannesburg-based race engineer Matt Nash's eponymous sports-prototype bowled confidently in during 2016. Focused by the nation's struggling economy, yet addressing both perception and pocket, it offers scaled-down LMP styling at a very affordable price. For three full seasons now, his cheap and cheerful design

has enabled averagely heeled punters to indulge their need for speed, properly, in a real racing car offering a challenging driving experience for peanuts.

The Nash MVW3's designation contains a big clue to its rationale and success. Without Volkswagen's ubiquitous Golf Mk1 – made in their millions in South Africa as Citi Golfs from 1984-2009, after the tooling had been transferred from Wolfsburg to Uitenhage, inland from Port Elizabeth on the Eastern Cape – and VW Motorsport's wholehearted support, the racer couldn't have happened. "The Golf 1, 2, 3 and 4 [models] are still massively popular here, so there is strong manufacturer spares support, and the engines are simple, robust and cheap – you can buy parts everywhere," asserts Nash.

"We use the two-litre eight-valve fuel-injected version, making around 130bhp, controlled by a Power Mods ECU on a plenum chamber we fabricate. The base unit costs us around £250. It's assembled by Cantwell Racing Engines, uprated with a mild camshaft, developed and supplied by SA racing legend Hennie van der Linde. A baffled Cantwell sump takes it to around £400, that's almost race-ready. After countless thousands of miles they've



Nash has made use of the Citi Golf's popularity with his prototype creation

“WE HAMMERED THE HELL OUT OF IT THROUGHOUT THE YEAR TO MAKE CERTAIN IT WAS UP TO THE JOB”

hardly ever blown up. On a tighter budget, a scrapyard engine hacked together on the floor has also worked well.

“Similarly, the standard five-speed Golf FFZ gearbox is inexpensive at about £125 complete, ready to bolt on. Inspired by Formula Ford, there’s no limited-slip diff, and on 13in x 7in hard compound cut semi-slick Yokohama control tyres – similar to those used in Australian FFord – it’s not overly stressed. My concept for the car, which weighs 550kg dry, with a 70-litre long-range fuel tank, was always to be very close to Formula Ford lap times. But it was never going to have as much grip. It had to be comparatively difficult to drive [approaching the limit] to offer an authentic racing experience.

“We shook the prototype down at Midvaal circuit at Meyerton on Christmas Eve 2015. We debuted it in the 2016 Phakisa 6 Hour race [on the former MotoGP circuit at Welkom, in the Free State] and finished, although we had to fix it half-way through. Then we hammered the hell out of it throughout the year, racing everywhere we could to make certain it was up to the job.”

The photogenic car attracted plenty of interest so the green light was pushed and major investment made in tooling-up for production. There was no turning back...

Nash made the chassis jig incorporating lessons learned from running the original muleta. The MIG-welded steel frame’s tubes are laser-cut for precision fit and ease of assembly and repair in the field. Helicopter designer brother Joe’s expertise was tapped during the MVW3’s evolution, with changes made for torsional strength and practicality prior to the car being productionised. An initial batch of 20 kits was laid down after the prototype, with first deliveries in 2017. The cars are left-hand-drive for better weight distribution with the transverse engine/gearbox, incidentally.

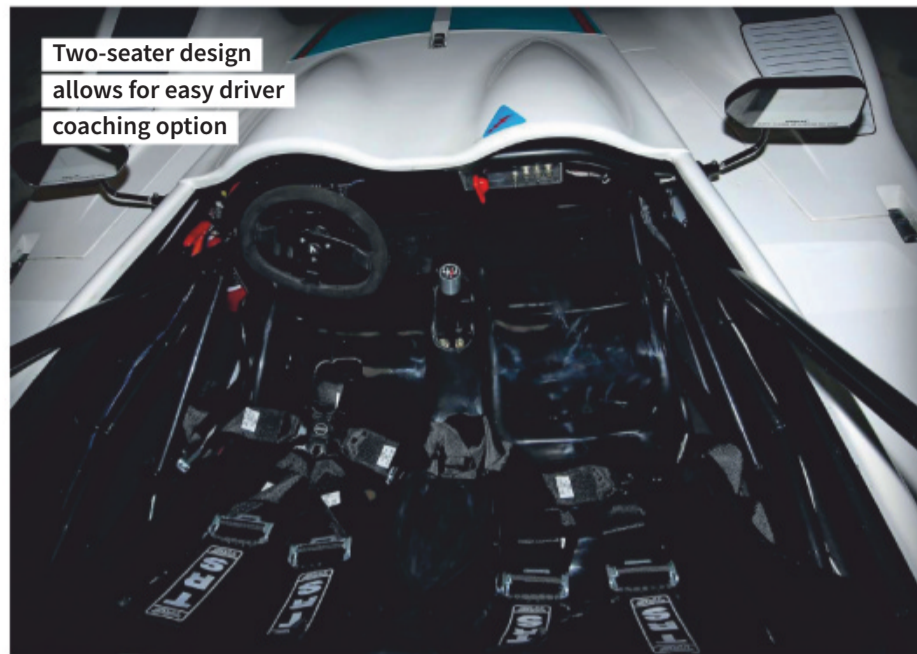
Sixteen are now on track, raced around South Africa in sprint and endurance events, plus popular end-of-day ‘run-what-ya-brungs’ >>

with a double-driver option to split costs. Nash is proud that his cars have proved to be giant-killers in exalted company.

“We finished on the overall podium at Zwartkops last year, beating a few Porsches and Lambos,” he smiles. Brothers Scott and James Temple and Andrew Horne/Howard Blake finished second and third there, beaten only by a considerably more sophisticated, powerful and expensive CN-spec Ligier-Honda JS53! Horne/Blake placed a class-winning third in the endurance series, and second on index of performance.

Suspension operation is by pushrod at the front and pullrod at the rear, actuating locally manufactured SAX dampers, which are custom-valved and not adjustable. The Swift SC91-inspired fabricated uprights are non-handed, common to all four corners, machined to accept rugged VW Golf hubs, bearings and brake calipers. For practicality, rod ends sourced from a company in Scotland are 7/16in all round, but for four left-hand thread and two 5/8in to make the uprights universal.

Double wishbones – interchangeable at the rear, as are the front uppers – incorporate what Nash regards as “the best features” of those on the Mygale, Swift and Van Diemen Formula Fords his National Championship-winning team has prepared and run over towards a decade at the sharp end of the pitlane. Citi Golf vented discs are grasped by PFC Performance Friction pads “which last forever” and cost £250 all-in. The steering rack



is also standard Citi Golf.

Aesthetically pleasing yet budget-friendly, the modular fibreglass bodywork, produced locally by former F3 racer Garth Waberski of DAW fame, envelops the chassis and shrouds the imported Minilite-esque alloy wheels. Just as Radical cut-and-shut a Robinson RS1 Sports 2000 body for its initial Clubsport model in 1998, the Nash’s nose is based on one from an ADR bought by Matt’s British-born business partner James Forbes.

“For simplicity we get everything moulded in white,

giving customers the option of adding contrasting stripes or [painting/wrapping] liveries,” adds Nash. “If a car gets hit it’s cheaper to buy new panels than repair them.” That might shock owners of proprietary British sports-racers for which mandatory factory-supplied nose splitters are eye-wateringly expensive.

A typical season could feature the customer-owned Nash fleet exercised over circa 20 race days, plus regular testing and trackdays, for which the standard two-seater set-up has proved perfect for driver training, corporate use and hot laps with celebrities. Affordable logistics have kept most owner/drivers faithful to the brand. Most race purely for fun and, while they love to be fiercely competitive as a few scrapes attest, have no desire to step up to higher leagues and spiralling budgets. When the cars do change hands, resale values are strong, because the original specs are fixed, thus there is no obsolescence as with bigger single-make

Only a far more powerful Ligier JS53(c) beat the Nash at Zwartkops last year





classes that compete globally.

Whereas some marques employ large workforces, Nash Motorsport's small staff including eager trainees, bolstered by weekend warrior spannermen, is lean in every sense. By crafting most of the product in-house, around mechanicals designed to withstand hundreds of thousands of kilometres' wear and tear, Nash and his team have achieved a sparkling rarity in the marketplace. A highly competent and good-looking race car built up to a quality and down to a price, usually mutually exclusive criteria. Most customers have bought factory-built turn-key cars, but there's a cheaper kit option.

"Every part of that car was thought out to ensure that it was affordable, available and fast enough," explains Nash. "Part of my mission was to enable a dad with a bakkie [pick-up] and trailer to go racing with his kid. No teams, no rocket science and no big

spares packages. One wheel and tyre, one rod end and a disc and caliper should be enough. All the expensive stuff has a sacrificial part which dies before it does. Even radiators are £50 over the counter at any motor factor. Our biggest crash repair invoice was £2500 – after a 194km/h [120mph] impact."

Four car sets are currently in stock at the North Riding, Jo'burg, factory, situated conveniently close to Kyalami and Zwartkops (Pretoria) circuits, an hour from Red Star Raceway (Delmas) and Midvaal, and two and a half from Phakisa.

Nash's "next adventure" will take him to Australia if all goes to plan. "We may take a couple of Nashes and try to do a similar thing down there," he says. While his tireless enthusiasm, determination and skillset will be a loss for South African motorsport, equally it will be a great fit within a more diverse racing scene on the vast sub-continent. ❄

FROM BRITISH F3 TO BUILDING HIS OWN CARS

Matt Nash, 37, grew up amid the hurly-burly of South African Formula Ford racing with father Allan and his pal Dave Sinclair in the 1980s. Nash Sr's claim to fame was destroying the ex-Roy Klomfass works Hawke DL11 at Kyalami, home of the country's F1 world championship round between 1967 and 1993. Sinclair built around 20 Ray copies there in the late '80s.

In 2001-2, Matt trained as a technician with Porsche SA, owned by Toby Venter, mastermind of the stunning redevelopment of Kyalami, now among the world's finest racing facilities. After a spell learning from master fabricators Andrew and Stuart Thompson, in 2005, in his early 20s, Nash drove a Mini from Johannesburg to London for BMW SA – "which gave me my first

taste of Silverstone" – and prepared national sportscar champion Ruan Pretorius' Shelby Can-Am.

Nash already knew Van Diemen racer Alastair Gibson, then working for the BAR F1 team. He followed Gibson – whose CarbonArt45 sculptures are now prized by collectors

– to England, joining the Ultimate Motorsport F3 team, owned by FF king Jim Walsh's brother Barry. Nash ran Argentinian Esteban Guerrieri and Irishman Michael Devaney (son of Bernard) over two seasons, but failed to land a Honda F1 job at the end of a two-year 'working holiday'

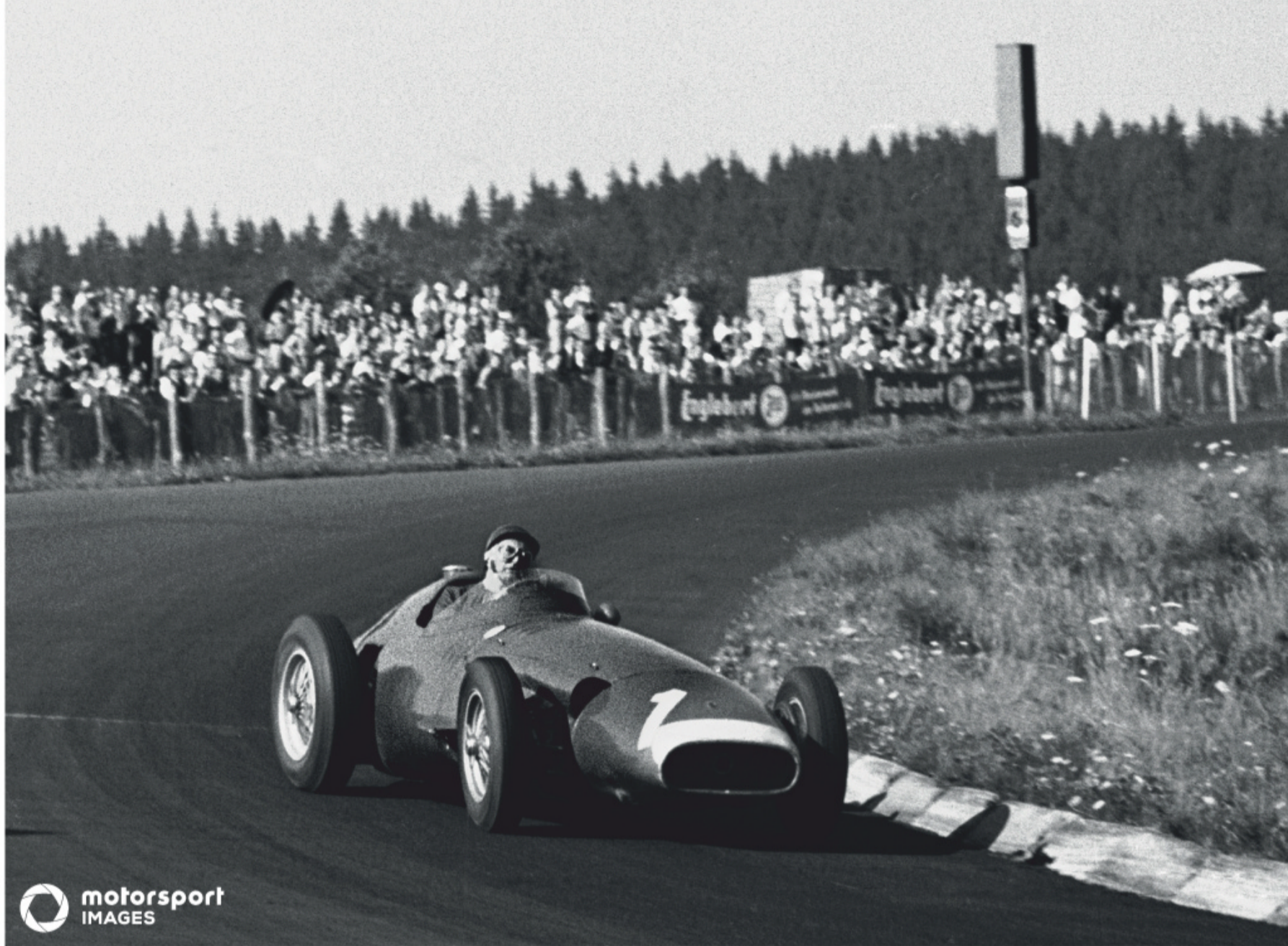
– "a Hail Mary moment before my visa expired!"

On returning home, he filled-in with work for Mercedes-AMG before setting-up Nash Motorsport Engineering to run Formula Fords at the start of the Duratec era. "My first customer was Stevie Morris, Rick's son," he recalls.

"Everything came right with Jason Campos, who won the 2013 championship in a Mygale. After lots of seconds and thirds we won the [slicks and wings Formula 1600] title last year with Cape Town's Scott Temple. We also ran Dean Venter [unrelated to Toby] to the Kent FF title in the ex-Tomas Scheckter Swift SC96."

With business partner James Forbes on board, designing and building the Nash cars, then becoming a leading distributor of race parts has kept Matt busy in recent years. While his own racing has taken a back seat – his CV spans circa 40 car events – the former karter's pace is unquestionable. He has won races in his MVW3s and recently, revisiting his FF roots, in Ian Hebblethwaite's 'Ecurie Hebble' Van Diemen RF81.





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FILM REVIEW

LIFE OF SPEED: THE JUAN MANUEL FANGIO STORY

Only in last week's issue of Autosport, we praised *Drive to Survive* for how the Formula 1 documentary series appeals to a broad audience, one that doesn't necessarily tune into grands prix on a regular basis. *Life of Speed: The Juan Manuel Fangio Story*, a 92-minute film now streaming on Netflix, tries the same trick but unfortunately misses the mark.

It finds itself lost between three narratives. As a result, viewers will come away cold from a project that should have been an engrossing exploration of the life of the five-time F1 world champion.

As well as its study into Fangio, the documentary tries to hype up the danger and gruesome mortality rate of the era. It's also set against a backdrop of a University of Sheffield research paper, which concluded that Fangio was the best F1 driver of all time. Incidentally, this writer remembers being sat in the institution's library when the results were emailed internally to students.

The issue is that *1: Life on the Limit* is already a stellar effort when it comes to exploring the risks and safety improvements in F1. The University of Sheffield study

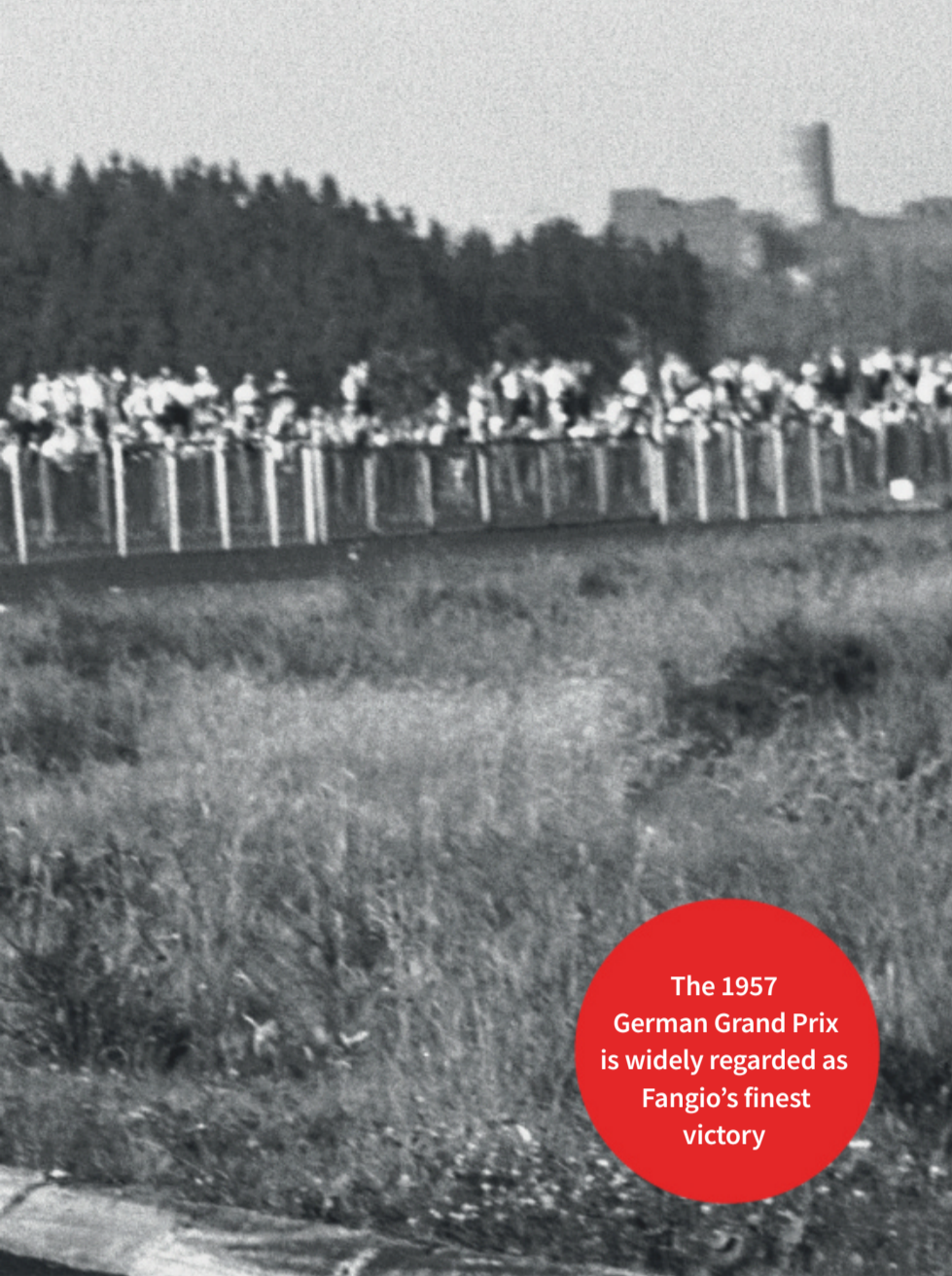
is used heavy-handedly as if to validate why the film has been made in the first place. The interviews with figures such as Hans Herrmann, Jackie Stewart, Mika Hakkinen, Alain Prost and more are clear in their admiration of the Argentinian. The inclusion of the study only serves as a distraction.

In the opening few minutes, Stewart states that "Fangio was the greatest driver, in my opinion, of all time". Excellent soundbites such as these reinforce to the audience why you should be invested in the story. The film needn't rely on statistical analysis, which only ever forms the foundations – never the entirety – of an argument for why one driver might be the greatest. Too much screen time is lost.

As a consequence, *Life of Speed* only touches upon Fangio's relationship with Mercedes team-mate Stirling Moss, and there's even less on his exploits in sportscars or his 1958 kidnapping in Cuba. Exploring these areas in greater depth would have added real grit.

Pleasingly, there is a wealth of Fangio interview film that's cut between the plentiful archive footage – although several of the old clips have Channel 4 F1 commentator Ben Edwards dubbing period-style narration over the top. In these interviews, Fangio is enormously philosophical. He believed heavily in the role of fate and luck determining a person's life. He lived by a maxim of 'Always try to be the best, but never think that you are the best'. He valued the role of his mechanics enormously and believed he couldn't win without them. He maintained that he never had persistent rivalries with any driver, and once the on-track competition was over he was extremely cordial with his contemporaries.

Any one of these areas is far removed from the approaches of the current F1 crop at the centre of *Drive*



The 1957 German Grand Prix is widely regarded as Fangio's finest victory

OF FORMULA 1



MOTORSPORT IMAGES

Little time is given to Fangio's relationship with team-mate Moss

to *Survive*. To hear about these aspects in more detail would have been excellent, but in the end they only are mentioned in passing.

There are factual errors, too. Most obvious is the 1949 San Remo race being depicted as Fangio's first European GP. He raced a Gordini at Reims the year before.

That said, *Life of Speed* is still worth a watch – especially as we should all be staying at home just now.

The interviews with Fangio and the names listed previously are stellar, as is the period racing footage of sliding Maseratis, Ferraris and Mercedes. The opening 20 minutes is very strong too, with Fangio recounting how he scraped a living during the Second World War – buying trucks to sell on the tyres, which were in short supply, and then selling the trucks during peacetime when there was a shortage.

This release never stirs the soul in the same way that 2017's *McLaren* and *Williams* did so well. For readers of *Autosport*, who will have some knowledge of Fangio, don't expect to come away having learned countless new facts, and then you won't be disappointed.

MATT KEW



[autosport.com/podcast](https://www.autosport.com/podcast)



THE RISE AND RISE OF ESPORTS



Esports has been thrust into the motorsport limelight over recent weeks owing to the spread of the novel coronavirus. On this edition of the Autosport podcast, we ask whether Esports can ever replace the real thing, or should we always think of it as complementary?



YouTube

[youtube.com/AUTOSPORTdotcom](https://www.youtube.com/AUTOSPORTdotcom)



5 WORST TITLE DEFENCES IN F1



Successfully defending a Formula 1 world title is an incredibly difficult task. Even taking that into account, there have been several occasions when a failed attempt was surprisingly poor as drivers plummeted down the pecking order. **Go to bit.ly/worstF1defence**

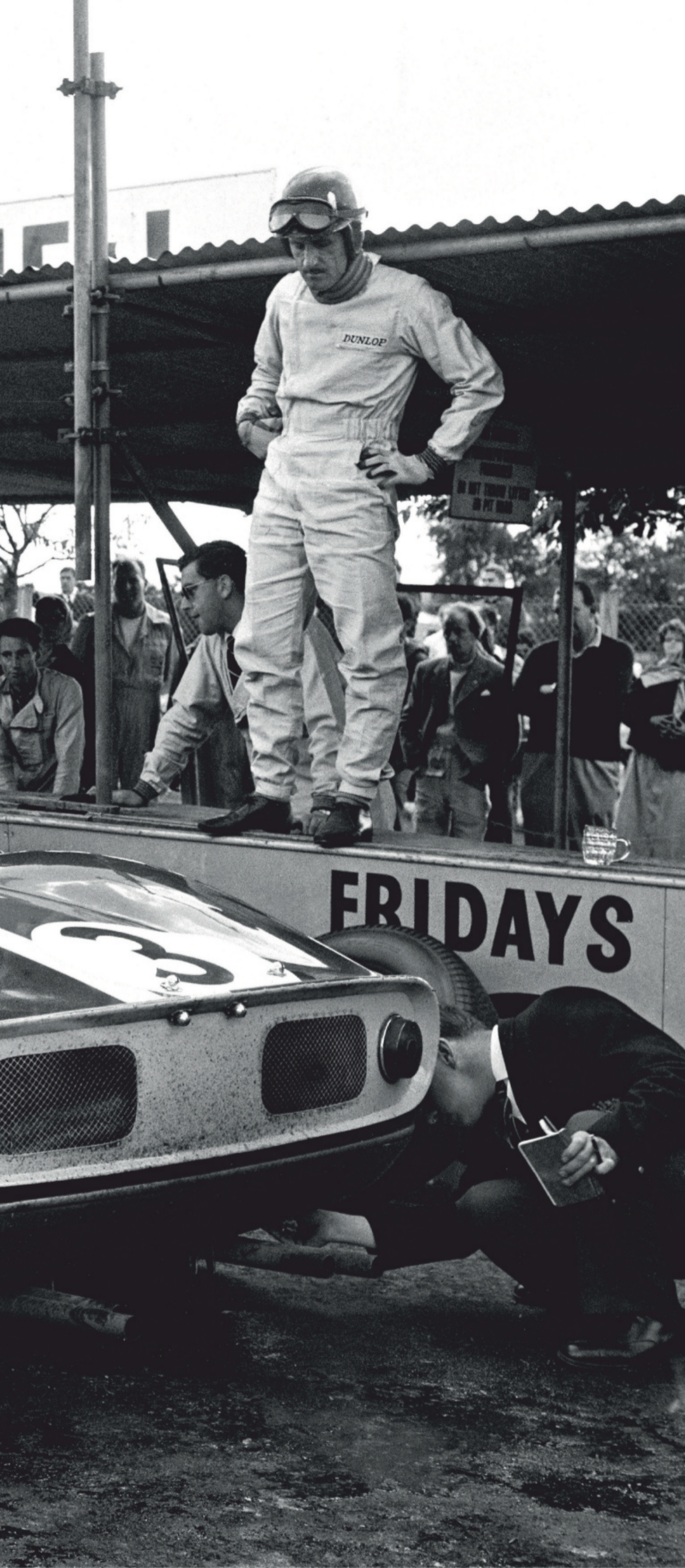
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bit.ly/superseasonF1

Should Formula 1 introduce its own superseason?

As F1 faces a tricky balancing act to fit a cluster of postponed races into an increasingly confined space, could it take a leaf out of the World Endurance Championship's book and merge its 2020 and 2021 seasons?





FROM THE ARCHIVE

Graham Hill stands by as his Maranello Concessionaires-entered Ferrari 330P receives the ministrations of his pit crew during the 1964 Tourist Trophy at Goodwood. Hill won the 130-lap event, finishing a lap ahead of runner-up David Piper's Ferrari 250LM and the Shelby Cobra Daytona Coupe of Dan Gurney in third place. Much of the event's entertainment was provided by Jim Clark (Lotus 30), who had led the race but lost out due to having to make an unscheduled fuel stop. A dramatic fightback followed but was cut short by a loose front wishbone, Clark finishing in 12th place.

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FROM THE ARCHIVE

Michele Alboreto's Footwork-Mugen FA13 is captured as a glorious blurred burst of movement, colour and sparks during the 1992 Italian Grand Prix at

Monza. Alboreto had qualified in 16th place, but managed to battle his way to seventh at the flag, albeit one lap down on the top five finishers. The race was won by Ayrton Senna

(McLaren-Honda MP4/7A), who finished 17 seconds ahead of the Benetton-Ford B192 of Martin Brundle, whose team-mate Michael Schumacher was a further seven seconds adrift.

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Two champions spar at Peugeot

4 April 2002

The rivalry between the World Rally Championship's two most recent title winners – Marcus Gronholm and Richard Burns – was explored by Autosport on this week in 2002. Reigning champion Burns had moved to join Gronholm at Peugeot to form a mighty line-up, bolstered by Gilles Panizzi and Harri Rovanpera.

Asphalt specialist Panizzi won two of the opening four rallies, but a sustained challenge for the crown always seemed unlikely as the roads became rougher. Gronholm took the spoils in Sweden and established a comfortable points lead, while Burns picked up a handful of podiums to keep himself in contention – including a very impressive second in Spain.

“Richard is taking some time to get used to the car and I think he might need a rally or two on gravel before

he's comfortable on that surface,” Gronholm said at the time. “He'll be competitive, but... I'm confident.”

Burns added: “In a way, the learning process has to start over again.” In Cyprus, Gronholm beat Burns by just under a minute.

Gronholm's emphatic form – including three wins in the last seven rallies – gave him a second title with more than double the points of second-placed Petter Solberg, while Burns slipped to fifth.

Elsewhere, Gordon Shedden was announced as a GR Motorsport Alfa Romeo driver in the BTCC – which never came to fruition. Juan Pablo Montoya and winner Michael Schumacher had a coming-together at the Brazilian Grand Prix, while Nick Heidfeld had a bizarre collision with the medical car in practice.

CRAIG WOOLLARD



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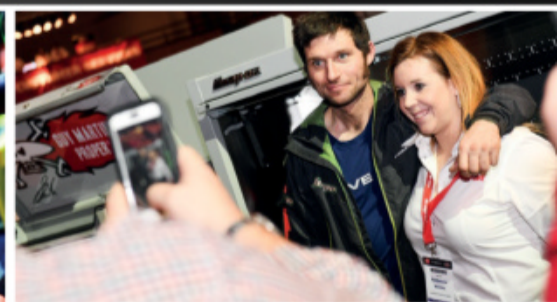
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Ross capped a decade with Nico Rosberg in F1 by clinching the 2016 world championship

TIME TO CELEBRATE THE PIONEERS AND DOERS OF OUR INDUSTRY

It goes without saying that these are uncertain times for motorsport. The coronavirus pandemic has dominated every conversation, reserved the top story on every news bulletin and forced unprecedented restrictions on our daily lives over the past few weeks, rendering motorsport a luxury that simply cannot be justified when the emergency services are being stretched to breaking point.

There is no telling when a return to normality with a petrol-infused soundtrack will be – July seems an optimistic estimate – which means the many businesses that are worried about survival are trying to plan while stumbling blindly in the dark.

There's a special feature on page 18 exploring how UK-based racing teams are planning to get through the shutdown, and while all polled by Autosport put a

brave face on matters, there can be no downplaying the seriousness of the situation as the hiatus continues.

At times like these, it's even more important than ever that the brains responsible for the innovations keeping motorsport relevant are celebrated and their contributions marked.

Of course, motorsport is a process-driven team game that takes much more than one individual to be successful. But the subject of this issue's cover feature (page 12), Mercedes stalwart Tony Ross, is a shining example of what makes the motorsport industry so special.

As he tells Matt Kew, "if you're not learning, you're not going anywhere", and those words take on a new meaning in the current climate. Even in times with no track action, there's still plenty that the very brightest minds can contribute ready for that day when racing finally resumes.



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LIFELINE FOR SELF-EMPLOYED

UK government steps in to help out-of-work freelancers, but not everyone is happy

Self-employed motorsport professionals facing a loss of income due to the coronavirus pandemic were given a lifeline last week with the UK government's Self-Employed Income Support Scheme. It offers a taxable grant for self-employed individuals worth 80% of average monthly trading profits over the past three years up to £2500 per month, and brings parity with furloughed employees who will have 80% of their wages paid by the government's Jobs Retention Scheme.

However, self-employed workers will not receive the relief until June, and only sole traders earning over half of their income from freelance work will be eligible to apply.

Danny King, a self-employed British Touring

Car Championship engineer who planned to combine running Chris Smiley's Excelr8 Hyundai i30 with a European Le Mans Series campaign for LMP3 team RLR Msport, will not be eligible for the self-employed scheme but can still apply for furlough.

"I think I'm in a minority in terms of the fact that I'm a director running a limited company in this industry, but there are a lot of people that don't qualify," he told Autosport. "There are also a few people who have recently gone self-employed that are going to struggle to see the benefit."

"I'm a bit disappointed in the help for the self-employed. It's not really going to help our industry much because you have to be earning

50% of your money from your freelance self-employed activity, but a lot of mechanics top-up their income with self-employed work."

Freelance race engineer Chaz Cleland was due to run BTCC rookie James Gornall's Trade Price Cars Audi S3 this year alongside parallel programmes in the ELMS with 360 Racing and Leipert Motorsport in Lamborghini Super Trofeo Asia. He told Autosport he was pleased to be getting anything to cover his lost earnings.

"I've chosen to be self-employed for a reason and if I wanted more job security then I'd go and get a full-time job with a salary," he said. "The fact that the government are doing anything at all is absolutely fantastic."



SENTRONICS PRODUCES NEW FUEL FLOW SENSOR TO COMBAT F1 LOOPHOLE ALLEGATION

Sentronics, the company which produces Formula 1's fuel flow meters, has developed an encrypted fuel flow sensor for 2020 to deter any teams from attempting to breach the 100kg/h fuel flow limit.

The new FIA fuel flow meter (FFM), will work in tandem with the original unit developed by Sentronics for the 2018 season, meaning each F1 car will have two installed to govern the amount of fuel entering the combustion chamber of the engine. The encrypted unit will be positioned in series after the standard unit to combat any rules violations.



The system was brought into F1 for the 2014 season, coinciding with the dawn of the turbo-hybrid era, and both the teams and governing

body the FIA had access to the data produced by the sensor. However, Red Bull queried a loophole in the regulations where a team could

theoretically exceed that by timing the intervals at which fuel flow was measured, and increasing the rate of fuel flow around that. It has been alleged that Ferrari's much-vaunted power unit performance benefitted from this in 2019.

The teams do not have access to the encrypted fuel flow sensor, which also randomises its own measurements. The device was hailed by Sentronics MD Neville Meech as "an important step forward in improving the FIA's policing of the maximum fuel flow regulations in F1".

Porsche will continue to offer combustion engines to customers



JEP
motorsport
IMAGES

911 WILL NOT GO ELECTRIC, PLEDGES PORSCHE CEO BLUME

Porsche CEO Oliver Blume has pledged that the marque will “always offer combustion engines” to customers, despite the rise of electric mobility.

As part of the VW Group, the Weissach marque is a sister company of Volkswagen, which announced last year that it would end its factory support of programmes using internal combustion engines and adopt an electric-only strategy in motorsport.

Porsche became the latest manufacturer to enter the all-electric Formula E championship last year, and while recognising that “we can’t

stop the onward march of electromobility”, in an interview published by Porsche, Blume said its instantly recognisable 911 would never go electric.

“Around 50% of all Porsche vehicles could be sold with an electric or hybrid drive by 2025,” he said. “However, Porsche will always offer combustion engines, particularly in the 911.”

Speaking before the coronavirus forced Porsche into a two-week pause in production, Blume also moved to address concern over the future of the automotive industry, and said that its expansion into electric vehicles had created 2000 new jobs.

IN BRIEF



CUPRA ETCR ‘ON TARGET’

Double DTM champion Mattias Ekstrom (above) has declared that Cupra’s ETCR racer is “on target” ahead of PURE ETCR’s inaugural season of ‘showcase’ events, beginning in July at the Salzburgring. Ekstrom, who will join Jordi Gene in the Cupra line-up, said the Spanish brand had made “extremely good” progress. “That development continues as we get hold of the latest ETCR control parts and incorporate them,” he said. “There’s a lot of work still to do, but we’re right on target for where we should be.”

ETCR BATTERY COMPLETE

PURE ETCR battery supplier Williams Advanced Engineering has completed the build of the first 798V units for in-vehicle testing. The bespoke battery pack, commissioned by series promoter WSC Group in May 2019, provides a peak power output of 500kW and 300kW continuous power, with provision for four ‘push to pass’ activations in each 21-minute race. WAE says the battery – which has a 62kWh capacity – can be recharged in less than an hour from 10% to 90% at 60kWh.

EX-F1 DESIGNER JOINS GLICKENHAUS WEC EFFORT

American sportscar manufacturer Scuderia Cameron Glickenhaus has announced a raft of new technical appointments ahead of its planned World Endurance Championship entry in the 2020-21 season, including experienced Briton Mark Tatham as chief engineer. A senior design engineer in Formula 1 with Tyrrell and Williams before taking in spells at Toyota, HRT, McLaren and Toro Rosso, Tatham has joined the Italian-based Podium Advanced Engineering outfit which has overseen Glickenhaus’s VLN operations in recent years and will be responsible for the design and development of its new SCG 007 hypercar racer (below).



SAUBER GROUP IN TECH TIE-UP WITH FE SPONSOR

Its Formula 1 team may now be called Alfa Romeo, but the Sauber name is alive and well in motorsport with its prototype development and additive manufacturing arm Sauber Engineering announcing last month a formalised alliance with technology company ABB.

Sauber Engineering is one of three companies under the Sauber Group umbrella based at its Hinwil factory, including Sauber Motorsport – which continues to operate the F1 team – and Sauber Aerodynamik, which conducts full and model-scale testing, including of its F1 cars, in the factory’s windtunnel.

As part of the tie-up, which a statement said would “focus on leveraging e-mobility and carbon neutral development projects”, Formula’s E title sponsor will install an EV charging station at Hinwil, with further collaborations envisaged.

ABB has previously worked with Sauber on a frequency converter that controls the fan speed in its windtunnel.



Sauber’s Hinwil base will get tech upgrades

SUTTON/MOTORSPORTIMAGES

Cooling properties of biofuels will present power advantages



SUTTON/MOTORSPORTIMAGES

BIOFUEL SET TO BE KEY IN F1 2022 DEVELOPMENT RACE

Formula 1’s impending switch to biofuels could trigger a development battle thanks to a change it brings in engine cooling characteristics.

Originally set for 2021 until its coronavirus-induced delay, F1’s new technical regulations require teams to run engines with a 10% blend of advanced sustainable ethanol. Work has already begun among F1’s fuel suppliers to optimise its cooling potential, with Benoit Poulet, F1 development manager for Ferrari’s technical partner Shell, telling Autosport: “It will be able to cool some parts of the power unit and that could be quite beneficial.”

Engine manufacturers could seek to optimise the cooling properties for a straight horsepower gain, or change the overall design and cooling characteristics to run the engine at a different temperature. This could then have a knock-on effect for the car’s aerodynamics.

Poulet added that Shell has been developing the new biofuel since the regulations came out last year. “I allocated one person full time on that question,” he said. “And now we have a good understanding in terms of the benefit of E10.”



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ENGINEER'S VIEW MICHAEL PEINSITT

HOW SIMULATION CAN ASSIST IN ANTICIPATING RULE CHANGES

Small regulation changes can impact multiple elements in the design chain, but simulation can shorten the learning curve

Whenever rule changes in any motorsport category are on the horizon, it brings about new challenges for engineers. Typically, rule changes have the potential to shake up the competitive order because some teams adapt better and faster than others. To be among those who get it right first, there are a number of different tools available for engineers to use.

Looking at Formula 1's next set of technical regulations – now set to be delayed until 2022 – the changes to the aerodynamics and the introduction of the 18-inch wheels in particular stand out. To prepare for these, teams can employ numerous different simulations that will provide them with answers to the various scenarios they are looking at.

Investigating 'what if?' questions is inevitable when either the rule changes are not fully defined, or when the necessary input data is still a work in progress (for example, vertical tyre stiffness for the 18-inch tyres is in the early development stage), and a centrepiece for these investigations is the vehicle-dynamics simulation. Teams can create models of the new components and run hundreds of thousands of lap time simulations with it. This is necessary because in the early stages

of development, not all input data might be available, or with the required quality, and teams want to be prepared for all possible scenarios. Notwithstanding any possible compound changes, the 18-inch tyres will definitely have different vertical stiffness and damping properties to the 13-inch tyres used now.

This in turn has an effect on the stiffness and damping properties of the suspension elements as it will help to control the car attitude better, reduce the ride height and pitch window in which the car operates. That will influence the aerodynamic development, because it might result in peakier aero characteristics – the maximum downforce is higher, but in a smaller pitch angle and ride-height window. So there are numerous elements in this complex game that influence each other, and teams have to make sure to cover the whole range of possible options. With that in mind, it is easy to understand why the number of simulations skyrockets quickly into the hundreds of thousands. However, due to cloud technology, it is feasible to simulate 100,000 laps within a few hours.

Of course, the teams will use the data gathered in previous tests with the 18-inch tyres to correlate the model with reality and narrow down the uncertainties. The

analysis of the simulated data identifies sensitivities between input and output parameters, which helps to define the most promising development directions. To answer the questions regarding car handling and stability, it is necessary to use a dynamic vehicle simulation with a driver model capable of driving the car at the physical limit. Steady-state or quasi steady-state simulations can provide a fraction of the answer, but not the full picture.

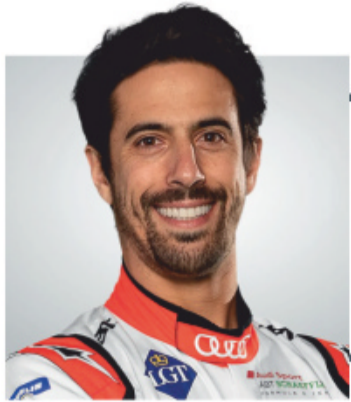
“In every loop, the quality of the model will get better due to lessons learned”

Once the numerous options have been simulated and analysed, the next step is to go to the driving simulator and let the real driver have a say on the feeling and stability with the most promising set-up options. While that happens, the aero CFD folks will have come up with a couple of aero updates, and the process starts again by putting the updated numbers into the vehicle-dynamics simulation. In every loop, the fidelity and quality of the model will get better due to the lessons learned in the previous loops, and result in more precise input data being fed to the simulation.

AVL RACING offers simulation and analysis tools along the whole process described above, starting from CFD services, to the fully dynamic vehicle simulation AVL VSM including cloud computing capability and the Simbook data-analysis tool, and of course a full motion driving simulator. Once hardware has been built, all sorts of testing from single components up to the full vehicle can be offered. ■



New technical regulations have been delayed until 2022, but teams can't afford to relax



DRIVING CHANGE
LUCAS DI GRASSI

**FIVE THINGS THAT I
WOULD LIKE FORMULA E'S
GEN3 CAR TO HAVE**

Formula E plans to go bold with its next generation racer, but its 2016-17 champion says it could be bolder still

The new Gen3 Formula E car that is due to be launched for the 2022-23 season will be an important one for the championship. It's going to be used for the next three or four years after that, so the organisers will have to carefully consider the proposals of companies involved in pitching for the various control components – chassis, battery and tyres – to make sure that the new car is a true evolutionary step; not only futuristic now, but when it first hits the track and beyond.

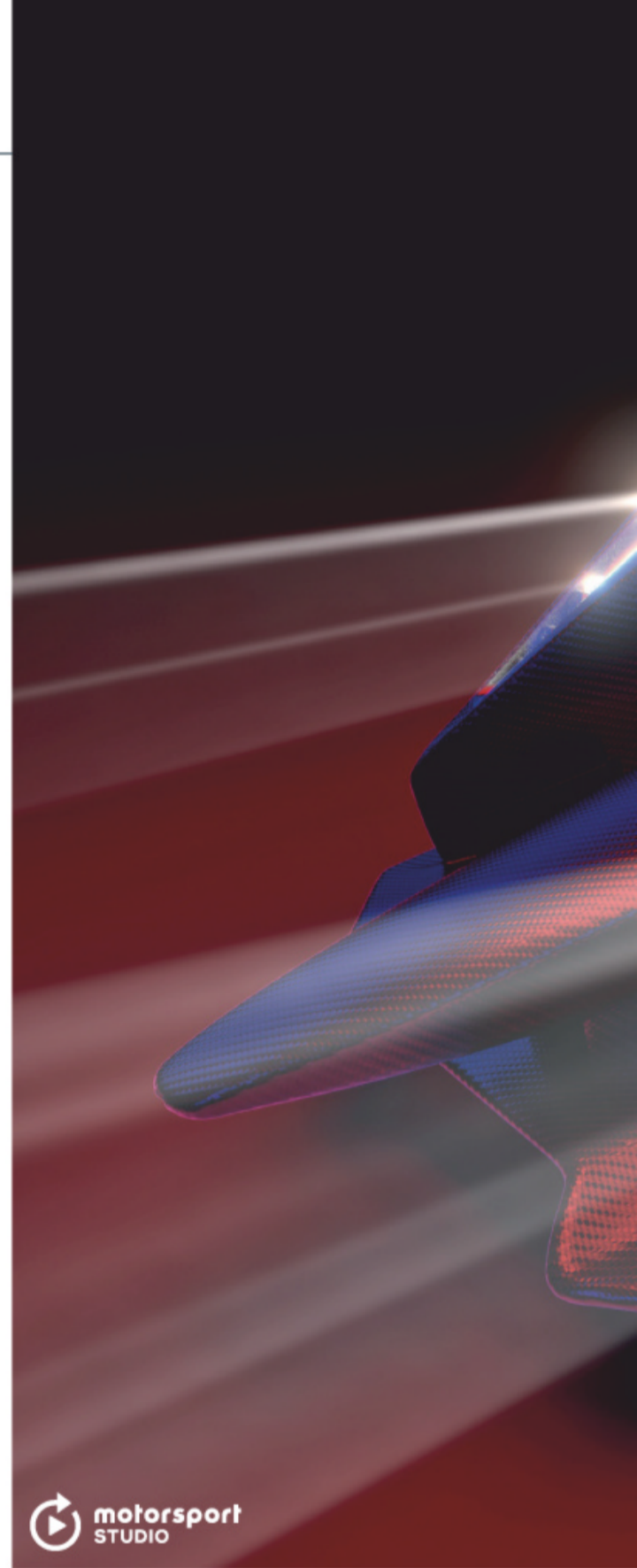
It has to think a long way in advance about what technologies will be important, but also keep in mind that the latest technologies are usually very expensive, so there are two competing considerations it must balance. The Gen3 car must still be relevant to the industry towards the end of the decade, but at the same time not be so expensive for the teams that the operational costs are not feasible.

The FIA announced in December that it plans for Gen3 cars to produce 350kW maximum power – a 100kW increase on the Gen2 cars we have now – be smaller in

length and width, 120kg lighter and feature fast-charging at pitstops, with a new battery capable of being fully charged in under 45 minutes. At the moment, FE is tendering for a standardised second motor on the front axle, but it will operate as a generator only and the cars will remain rear-wheel drive. That's the first point I want to address.

1 FOUR-WHEEL-DRIVE CARS AND MORE POWER

For me, it's really important that Gen3 cars have four-wheel drive and increase maximum power output to 500kW. But before people say, 'You can't do that on street tracks', I would make this modular so the cars can be adapted to the characteristics of each track, rather than the other way around. By some simulations, a 500kW four-wheel-drive FE car could accelerate similar to or faster than a Formula 1 car from 0-120mph, so it will be very fast. At those speeds, it's simply not possible to race in Paris or Hong Kong – that's why F1 doesn't go there, apart from the noise and pollution



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STUDIO

“I would keep the existing 250kW drivetrain and duplicate it on the front axle”



Circuits like Mexico could accommodate more power if cars had modular output



RX proves that 4WD doesn't mean cars are easy to drive

WORLDRX



Di Grassi's vision for FE's Gen3 car is more powerful and has lights for night racing

— but in making the FE car modular, we should be able to race anywhere, anyhow.

For example, in some tracks you could just have rear-wheel drive and then, in attack mode, the extra power comes in the front axle. Imagine in Paris — you'd have 200kW of power from the rear axle and then, when you use attack mode, you'd have another 50-100kW from the front. At more open circuits, such as Mexico, the car could have 400kW and then attack mode increases it to 500kW. There is so much more you can do to adapt the car to the track than the other way around, which is very expensive — as Zandvoort has discovered — and is not easy to undo.

There's a common misconception from people who haven't driven a four-wheel-drive race car that it's much easier than a two-wheel-drive car, but I can tell you that's not the case. Having raced a four-wheel-drive hybrid LMP1, I can say that one isn't any easier than the other, it's a just another slightly different technique. It's like saying because WRC cars are four-wheel drive, they are easier to drive than two-wheel-drive rally cars. Yes, you go faster and you slide more with four-

wheel drive, but you have to be very skilled, arguably more so, to drive it on the limit.

It will make the cars more relevant, because every single performance car on the planet that uses electric power will end up being four-wheel drive, and it would also increase complexity because drivers can distribute this extra power however we want with the greater regenerative capacity. With 500kW positive power and 500kW regen power, you almost don't need mechanical brakes at all because pretty much all the energy that is used in the braking zone is going to be used to charge the battery again.

On another point, high-energy regen will be key on future commercial cars to reduce the very fine dust generated from brake pads. Not all road cars are currently using high-energy regen at the moment, so this is something that could definitely be improved in the years to come.

2 DUPLICATE THE EXISTING POWERTRAIN, DITCH THE STANDARD UNIT

Instead of developing a new 350kW drivetrain that would require completely

new components, I would keep the existing 250kW drivetrain that everybody has already developed to a very competitive level and then duplicate it — keeping all the homologated components the same on the front and rear axle.

The plan at the moment is the front powertrain is a tendered unit for everyone, but for me it makes no sense. How can a manufacturer justify that their car has half of the powertrain powered by a unit it has invested a lot of resources into when the other half is shared with everybody else? From the marketing side, it would also be very weird if there was a mechanical failure. You can just imagine it: 'The front powertrain failed, but it's not our fault.'

In season one, FE didn't have any manufacturers and nobody really knew what was going to happen, so you needed a common powertrain to start the ball rolling. But, already in season two, teams were free to develop their own solutions, so we cannot go back to a standardised powertrain unit when it is so much more cost-effective to duplicate what teams currently have than developing and understanding a whole new powertrain. ▶

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Incorporating style cues from road cars, as in IMSA, would give more relevance to brands and allow for night racing



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Doing that would mean the amount of drivetrains per driver would be the same as the first four seasons when we had two cars, only now it would be in one car. The increment in cost would be marginal by producing one more unit instead of developing a brand new one.

3 FAST-CHARGING PUT ON HOLD

Fast-charging was one of the key elements of the original announcement, but I would postpone it for the start of Gen3 and find something else to create some strategy variation, because it will not be viable from a cost standpoint. As I understand it, FE decided to go down this path because fast-charging technology will be needed in the future. I can't disagree with that, but I would not start Gen3 with fast-charging because it would increase the cost massively – in terms of logistics, operations and city capacities – and I don't think people will be more likely to watch it whether there is fast-charging or not.

Sure, FE's purpose since the beginning

has been to push boundaries on mobility, so you could argue that delaying fast-charging based on cost would not be in the spirit of FE. But it's important not to lose sight of cost, and the outlay would not justify the advance in technology needed. People will need fast-charging, but by 2023 it won't be new anymore, so I don't think it's something that FE would be ahead of the curve on anyway. I don't think it is necessary for an entertainment spectacle like FE to have that, so fast-charging should be put on hold and then evaluated after the first season of Gen3. But the car must be able to receive it in the future.

4 WELCOME TO THE NIGHT

One thing missing from FE is night racing, so my ideal Gen3 car would have lights and be able to race at night. This would help each brand build its identity into the car, a bit like how IMSA does it in DPi, but instead of changing the bodywork you can only add lights that are derived from the lights you have in your road car. Street racing at night would be

“People will need fast-charging, but by 2023 it won't be new anymore, so FE won't be ahead of the curve”

amazing, and we wouldn't need to install expensive and inefficient lighting systems like the Singapore Grand Prix has. We could put LED lights on the car and create another factor of difficulty for the drivers. It will be better entertainment for the public and create a big visual spectacle.

5 AMPING UP THE SOUND

Continuing on this theme, I would also add artificial sound into the car. People could argue that it's fake, but really what is fake sound and what is real sound? If you change an exhaust in a car, is it creating fake sound? It will be an EU mandatory rule from 2023 onwards that electric cars in urban areas will have some kind of sound, so it would be very cool if FE teams could develop their own sounds for people to download and then upload to their own cars. It's like we have in Roborace, where every car has two nautical-grade loudspeakers, and we program the sound as we want to communicate with the public. You could create a much better interaction with fans, and teams could come with different sounds for different races – for example, in Italy, a team could configure their car to sound like an early 1990s V12 Ferrari F1 car. There are no real limits, so if sound is the problem, let's create some sound! ■



Teams could engineer sounds for cars that appeal. V12 anyone?

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WHY A CHAMPION ENGINEER HAS MOVED TO

FORMULA E

BATHIE

One of Formula 1's most decorated race engineers of recent times, Tony Ross has made the bold step into Formula E overseeing Mercedes' arrival to the category. Trading near-guaranteed success for a start-up was a bold choice, but it's already bearing fruit

BY MATT KEW

The case for Mercedes being the greatest Formula 1 team of all time grows stronger with each season. Since the 2014 introduction of hybrid powertrains it has swept all in its path to one side and, perhaps most impressively, continued that dominance through the regulation changes introduced for 2017. It has matched Ferrari's record of six constructors' titles on the bounce and is set for more.

Why, then, would you swap it all to enter the most unpredictable championship going, where there can be no guarantee of immediate success? That's the path taken by Tony Ross, the chief race engineer of the Mercedes Formula E team.

His career began in a different field – working in the road car division at Rover – before joining Nissan Motorsport for its Primera touring car attack in 1994. A three-year stint was marred by the tragic

death of Kieth O'dor at Avus in 1995 and the manufacturer's withdrawal from the British Touring Car Championship. From there he moved across to Williams for two years as it embarked on the V12 Le Mans project with BMW.

That in turn led to a berth at the Williams grand prix team on its testing programme. As both BMW and Michelin came into F1, Ross spent most of his time overseeing the mileage of drivers Tom



U L L A E



Ross enjoyed long and fruitful relationship with Rosberg in F1

LUNDIN

Kristensen and Jorg Muller, before a call from Patrick Head boosted him to the race team as an engineer for Juan Pablo Montoya and then a season with Nick Heidfeld.

In 2006, however, Ross forged a partnership that would yield him his greatest success to date as he was assigned to be the race engineer for Nico Rosberg. They remained together at Williams until Rosberg headed to the newly rebadged Mercedes team in 2010 and, after a year on the pitwall for Rubens Barrichello, in 2011 Ross followed suit.

“At that stage, the team had already changed into Mercedes but it was much smaller because they had to get rid of so ▶

“I didn’t particularly want to be a race engineer forever, but I didn’t want to make a stupid move. This is something new and a challenge” **Tony Ross**

many people in that transfer zone between Brawn GP and the first year of Mercedes,” Ross says. “When I joined, it hadn’t been built up to the level that it is now.”

As a race engineer, Ross was known for his howling radio messages that greeted each of Rosberg’s 23 wins, and in 2016 it was their side of the garage that beat Lewis Hamilton to the drivers’ championship, while also securing a third consecutive teams’ trophy.

Ross was no less surprised than the rest of motorsport when Rosberg promptly walked away at the end of year: “When Nico rang me up before the announcement, I thought, ‘Right, is he still at a party somewhere?’ Really, it was a shock.”

After two seasons spent race engineering for Valtteri Bottas, at the end of 2018 the call came for Ross to switch to the fledgling HWA Racelab FE concern – for which he’d already made appearances at Valencia testing as a consultant – in anticipation of Mercedes joining the grid for 2019-20. As

Ross puts it, the opportunity to take on more responsibility in a fresh environment was one he couldn’t ignore.

“In F1, like many things, as a race engineer it’s like, ‘What am I going to do next?’” he says. “You’re always learning – if you’re not learning, you’re not going anywhere – but it starts to peel off and the advances aren’t as much.

“It was an opportunity, ‘Right, we’re going to go into Formula E. Are you interested in taking part?’ It was a really good chance for something different. As a race engineer, you’re managing people – the performance engineer, the engine engineer – but you’re not managing the whole engineering department, which is what’s happening now. I didn’t particularly want to be a race engineer forever, but I didn’t want to make a stupid move. This is something new and a challenge.”

Ross was chosen to lay the ground work for the full Mercedes FE entry not only due to his experience, but also his tireless



Ross started his F1 career at Williams with Montoya

commitment, which has made a real impression on the team’s rookie driver Nyck de Vries.

“Honestly, I have never seen anyone in my life that is as dedicated to their work,” says the reigning Formula 2 champion. “Tony works 24/7. I recall a moment that he went skiing with his family a couple of months ago and I told him, ‘Please keep your laptop shut for some time!’, but still he refused. He felt like he had to get on top of things. He’s very impressive and very highly dedicated to his passion.”

HWA was up against it in 2018-19. Not only was it going in green to an arena that so rarely permits one team to dominate, but also resources had been stretched thinly in the build-up. Fresh from guiding Gary Paffett (see panel, below) to the 2018 DTM crown in Mercedes’ swansong year at Hockenheim, within a day of the 14 October season finale the engineering staff and freight were on their way to the Circuit Ricardo Tormo for the 16 October FE test.

Steps were taken to ease the load, namely HWA ran a customer powertrain from the Venturi outfit. It also employed Lucas di Grassi’s FE title-winning race engineer Franco Chiochetti as the head of track operations. The main target was to adapt to the FE schedule and tighten up on strategy while, back at the High Performance Powertrains site in Brixworth, work was underway to develop the season six running gear with which Mercedes



Paffett now has behind-the-scenes role in Merc’s FE effort

MERC’S OTHER MR DEPENDABLE

Much like fellow Mercedes stalwart Tony Ross, Gary Paffett has been adapting to a new environment of sorts in Formula E.

It’s two short years since the then 37-year-old was at the height of his powers, giving Merc the perfect send-off from the DTM by winning his second title – after a 13-year wait – then contesting an FE campaign for series debutant HWA in 2018-19.

But after scoring just nine points in his maiden season, Paffett is now without a full-time seat and instead operates as the reserve and development driver for the Mercedes FE team. Alongside ex-Formula 1 pilot Esteban Gutierrez, he’s the mediator between drivers Stoffel Vandoorne and Nyck de Vries and the race engineers, putting to good use his experience gleaned



Overseeing both Merc Formula E cars presents a very different challenge

Mercedes FE rookie De Vries rates “dedicated” Ross very highly

would make its all-electric bow.

A Rome E-Prix podium for Stoffel Vandoorne was the highpoint for HWA, as it finished ninth in the championship – one place behind Venturi and with half as many points. Vandoorne has bettered that from the off in the current 2019-20 campaign, with two third places in the opening two races in Saudi Arabia. Had it not been for Mercedes overcooling the battery on de Vries’ car in Santiago – frequent procedural errors have stunted his side of the garage – it would have been a podium hat-trick.

Mercedes is an automotive leviathan, its resources are vast and HPP has been

largely responsible for the hybrid-era F1 domination, but nevertheless the improvement in FE results so far this term has been marked. Currently fifth in the standings, it’s romped clear of fellow rookie and ninth-placed Porsche.

“We had a lot of problems in Valencia testing and we thought coming into this season we were going to have our work cut out,” Ross says. “And we did, it was still difficult, [but] we’ve just been trying to build the procedures up so that we’re able to operate at a sensible level. You can quite easily come away with two DNFs – drivers can get caught up, get hit or anything like that, so there’s the element of luck in there.

Our two drivers are sensible, they’re not unnecessarily taking massive risks.

“We’re not top of the league by any means, we don’t think. There are a number of other cars that are quicker, we’re sensibly midfield. I don’t think we’re under any illusions. We still make mistakes, we have still lost podiums but I think we have just made a few less than other people.”

The biggest role change for Ross has been his move from focusing solely on one car to now overseeing the whole garage. Along with team principal Ian James, he has to take a step back for a more holistic approach rather than get bogged down in ▶



representing the manufacturer since 2003 – when de Vries was eight years old.

As Paffett explains: “Of course

I’m disappointed not to be racing as much, but I’ve had a very long and successful career and I’m proud of that. At some point, you will get

other people taking your seat and you can’t be annoyed – you need to just get on with the job you’ve got.

“To move from racing in FE straight into this role, it’s great it happened so quickly.”

As well as conducting private tests of the forthcoming 2020-21 car, Paffett also does “a lot of prep work before the races with the drivers. Based on my experience, I’m someone that the drivers can hear out and get some advice from. Through FE, DTM and the years

I spent as a [McLaren and Williams] F1 test driver, I’ve seen a lot.”

Such an armoury goes some way to helping overcome FE’s incredibly tight one-day timetable.

“The drivers don’t get much time to sit with engineers,” Paffett says. “So I’m talking to the team and trying to make sure we’re doing the right thing. During the race, it makes a big difference having a driver on the pitwall to reassure people that we’re making the correct calls.”

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CUSTOMER SERVICE

Nowhere is the difference between Formula 1 and Formula E more marked than in the relationship between manufacturer and customer teams. From pre-season testing through to the last race of the campaign, customer teams in FE are entitled to see all powertrain-related data traces from their factory donors.

It's a much more transparent, two-way relationship than happens in F1. Combined with FE's constricted regulations, which put the emphasis on developing the running gear while leaving the aerokit standardised, it reduces the number of variables at play and makes it easier to isolate deficits, as proven by Techeetah winning the 2017-18 drivers' title running a customer Renault package.

Susie Wolff has seen both sides of the dynamic. In her previous role as development driver for the Williams grand prix team, she tested with the imperious Mercedes hybrid power unit. Then as team principal for the Venturi FE concern, Wolff has seen 'her' powertrains lent to HWA last season. For 2019-20, the Venturi cars use the Mercedes platform.

"Both sets of drivers [Venturi and Mercedes] see each other's data to know where they need to improve," she explains. "That's hugely beneficial because the limited track time makes it very challenging for the drivers. Having all four cars out there, it doubles our learning but it also helps drivers immediately know either where they have to find time or where they're on the pace.

"In F1, because the cars are different, it's very difficult for the driver to know if it's the car or the driver. For me, it was a win-win situation because Venturi has been in Formula E since the very beginning. We have a lot of knowledge and know-how. We supplied HWA last year with our powertrain, and that's borne fruit. This year it's enabled Mercedes to come in with their strong powertrain and already achieved a podium – not Venturi yet, but I have no doubt that's around the corner."

Wolff insists this will not lead to Mercedes ordering the Venturi cars to move over on track, but through the joker cards of attack mode and drivers managing different energy levels, such a scenario has not yet come to pass.



Wolff has seen how the customer relationship works both in F1 and FE

the minutiae. He's needed to loosen the reins and let race engineers Albert Lau (de Vries) and Marius Meier-Diedrich (Vandoorne) manage their own cars, while he hones in on boosting the team's overall performance. But, as de Vries explains, that hasn't prevented Ross from being there to support his drivers.

"It's an absolute honour to work with people like Tony," he says. "I've learned to know him as the technical leader and he passes on the work to all the engineers that you work with. He has the ability to stay calm and oversee everything.

"He gives the drivers confidence. Certainly, last year, Tony was very supportive. It was clear that the first priority for me was to seal the [F2] championship. That box was ticked and we could then move on to our next new chapter together. Tony and me had several conversations about how to approach certain things and, especially now working together, trying to achieve the best possible results."

Since part of the appeal for Ross in moving away from F1 was to eradicate any notion that his career or his learning was stagnating, he's come to appreciate the areas where FE has the leg up on its combustion engine counterparts. When asked what aspects of FE excite him more than F1, he replies: "I love the single-day

format. It's a real a challenge to deal with, a kind of Pandora's box. You can do a lot in FE but it's deliberately limited to try to keep costs down. But we're looking to get a performance differentiation over the other teams to win.

"In F1, it's completely different. It's a three-day event. The big difference with F1 is that the performance differentiation is very much in the aero these days. It used to be in the powertrain back in 2014 and you can still get differences, but it's all in the aero.

"If you look at Williams versus Mercedes, it's exactly the same power unit, it's just the aero that's making the difference. You don't have that in FE (see panel, left). You have powertrains, which, OK, are different, but they're electric motors so the differences are much smaller.

"That's what HPP have to do. They have to maximise what they have, but what they have to work with is less than in F1. As anyone can see, trying to actually win consistently in FE, especially with the [group] qualifying format, is difficult.

"Don't take it away from F1 – in terms of the technology, that is the pinnacle. But it's very much an iteration-on-iteration formula, so the engineers are just fine-tuning. With FE, it's the first time that HPP have done a powertrain that's of that kind of [all-electric] power output so



Vandoorne took Merc's first podium in Diriyah (left) and led the points heading to Mexico



it's new for them and the steps are bigger.

"You still have to treat F1 and FE as very different. FE cars have very little downforce compared to F1 and, I think quite rightly, they try to separate the cars and not try to combine them in the championship. If you look at FE, the racing is really exciting and the race format is really good."

That's as maybe, but signs point to the future relationship between F1 and FE being rockier than ever. Earlier this year, and before priorities switched to responding to the novel coronavirus pandemic, the UK government began a consultation period to bring forward a ban on the sale of petrol and diesel cars to 2035. Not only would this see the deadline move five years closer, but the revised laws would include hybrid road cars in the restrictions also.

More so, if other territories impose similar legislation, the impact on top-flight motorsport will be deep. Since day dot, FE has held an exclusive electric licence with the FIA for 25 seasons that would, in theory, prevent F1 from fully transitioning. Such deals, however, can always be rewritten for a price. Whether the grand prix scene moves in that way, merges with FE, or pursues an alternative fuel source such as hydrogen is still open to debate.

As someone with an intimate knowledge of both paddocks and powertrains, Ross can assess the lie of the land.

"It's a First World problem in F1, when you've got to decide which driver wins. In FE, it's more like, 'Right, where are we going to finish? First or out of the points?'" **Tony Ross**

"In terms of how the batteries are encased and that kind of thing, there are developments that are bringing improvements, but there's not been the step needed for them to compete in the same way with fossil fuels," he says.

"At the moment, yes, both F1 and FE need to exist and they will both push each other. But FE, as a form of entertainment, is different to F1. It will be interesting to see what happens with F1 because it does cost so much. As a result, you get the differentiation that you get now, whereas in FE, realistically, anybody can win."

And that is the major landmark change for Ross. Of the 100 races between 2014 and 2018, Mercedes won a staggering 74. Although he was dedicated to Rosberg then Bottas, when often Hamilton would vanquish the pair, there was plenty of solace to be taken in that a Silver Arrow would likely bag the spoils.

Ross has left that level of command well

behind in FE, but he reckons the challenges have brought the squad closer together rather than being the source of frustration.

"You've got to be grateful for what you've had," Ross says. "It's a First World problem in F1, when you've kind of got to decide which driver wins. Whereas in FE, it's more like, 'Right, where are we going to finish? Are we going to finish first or out of the points?'"

"As a championship, it's really good. It brings everybody together, and it makes it harder to differentiate. Those that win prove that they are top."

Ross might well be considered a modern-day Mercedes mainstay. His stint at the marque outlasted that of more recognised engineering figureheads Ross Brawn and Paddy Lowe. But he traded that in to embark on a new learning curve in an arena where success, when it does arrive, will be more hard-fought than any of the race wins he has presided over to date. ■

SPECIAL INVESTIGATION

HOW TEAMS ARE COPING WITH THE COVID-19 CRISIS

In unprecedented times for motorsport caused by the coronavirus pandemic, UK-based teams are facing their biggest challenge yet – one of survival

BY JAMES NEWBOLD

Normality is taking a back-seat for the entire UK population as the death toll caused by the deadly coronavirus topped 1200 over the past weekend and continues to rise by the day. In an unprecedented peacetime restriction designed to halt the spread of the virus, the public was asked last week to stay at home, all ‘non-essential’ businesses entered into a period of hibernation and public gatherings of more than two people – excluding those you live with – were banned.

The virus has stopped the motorsport industry in its tracks and left no corner untouched, from Formula 1 right down to the UK’s premier national categories, with Motorsport UK withdrawing permits for all sanctioned events until the start of July.

The British Touring Car Championship and its undercard package, including the British F4 championship, were set to get underway last weekend at Donington Park, but instead the likes of Power Maxed Racing and Fortec Motorsports were on lockdown.

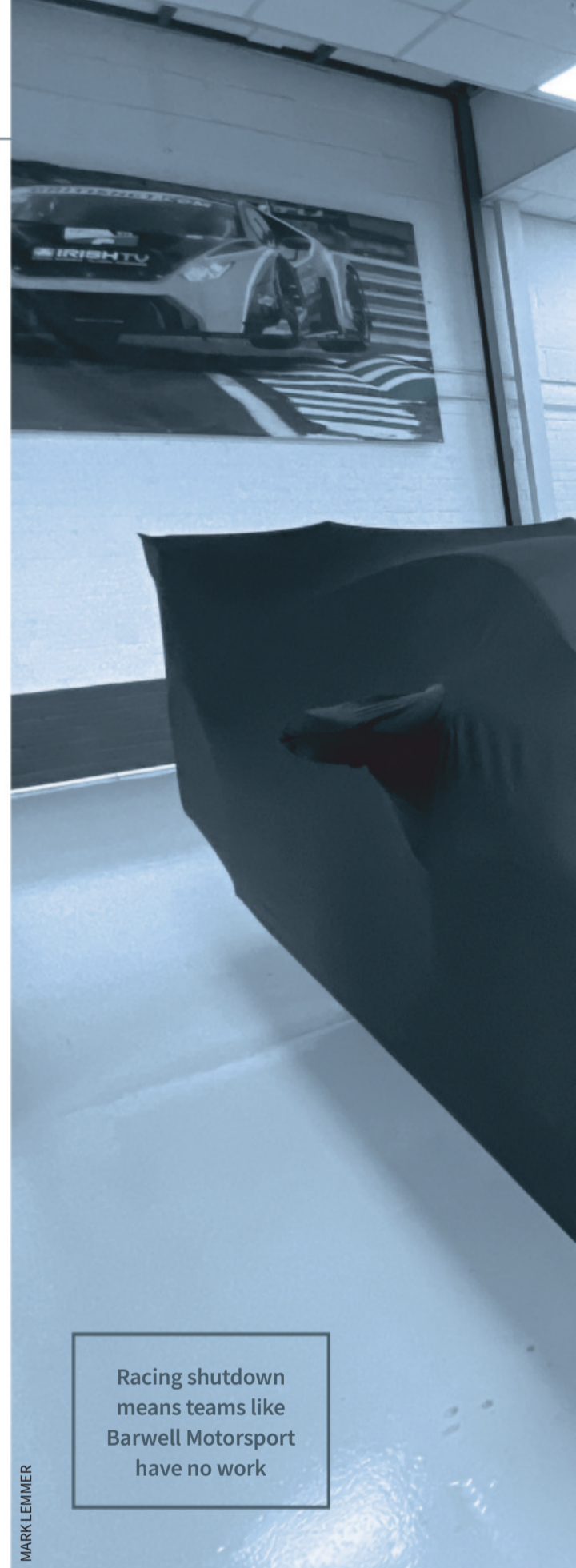
In addition to running its pair of BTCC Vauxhall Astras, Warwickshire-based PMR also has a sideline in historic vehicle restoration and maintenance, customer motorsport projects in VW Cup and TCR

UK, and in performance tuning, but has been unable to make use of time without racing as the ongoing projects in its workshop cannot be completed remotely.

“At the minute everything is stopped so we can’t do any of those jobs because it’s non-essential,” says team manager and technical director Martin Broadhurst. “This has hit everybody – not unexpectedly, it was inevitable it was coming – but everybody had been gearing up to carry on as normal.”

There’s never a good time to put a hard stop on business, but for Fortec it has proven especially unfortunate. The team that ran Johnathan Hoggard to second in BRDC British F3 last year has recently upgraded its fleet of British F3 Tatuus chassis with aerodynamic and safety improvements, as well as a new engine from Mountune to replace the outgoing Cosworth units, but now cannot recoup the money it spent.

“It couldn’t have come at a worse time financially,” says Fortec boss Richard Dutton, whose Daventry-based team was due to enter three F4 Mygales at Donington. “It’s a disaster – all the money spent updating the [F3] cars and we’re now not in a position to use the



Racing shutdown means teams like Barwell Motorsport have no work

MARK LEMMER

mileage that we paid for. Sponsors don’t want to pay anything, because we’re not doing anything. It’s difficult to keep everyone happy; some people have paid some of the budget and they’re not happy.

“We’re just doing the best we can and trying to stay positive. It’s a big problem, but I’m sure everyone is in the same boat.”

It’s not only national-based teams that are seeing repercussions from the hiatus. World Endurance Championship LMP2 points leader United Autosport made the “huge investment” of moving into 62,000-square-foot premises in Wakefield last year, which team co-owner Richard Dean admits has quadrupled its overheads at the worst possible time.

“We’ve invested a lot of our reserves that I certainly didn’t believe we needed for a day like today,” Dean says. “I don’t think anybody saw this one coming.

“When I look back at ‘I wish I hadn’t done this and I wish I hadn’t done that’,



United Autosport co-owner Dean (second left) recently invested in new workshop

JEP/MOTORSPORT IMAGES



it's certainly one of the ones on the list where we'd have been in a better position if we hadn't done it."

At British GT and GT World Challenge Europe squad Barwell Motorsport's workshop in Leatherhead, the lights are off too.

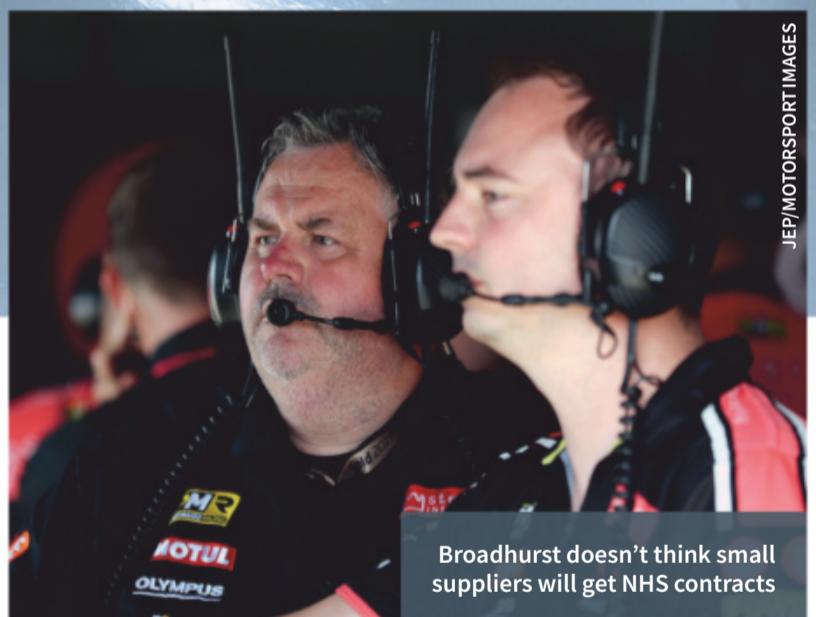
"It's a balance between making sure that the business is healthy the other side of all of this, but also you've got to think of people's welfare," team boss Mark Lemmer says. "Basically the workshops here are now on shutdown. There's nobody coming in because it's not an essential business."

Like PMR, Barwell has a small fabrication department that Lemmer says helps it "save a lot of money" by making its pit equipment in-house and "occasionally" fulfilling commissions from other teams. However, Lemmer concedes that Barwell is "probably too small" to earn a government commission to fabricate components necessary to assist the NHS, such as parts

for use in ventilators, that would allow it to get back to work.

Broadhurst says PMR has also applied to use its fabrication expertise to help with the anticipated shortage of ventilators, but concedes that "the small people in the chain are not going to get a look-in, because the likes of Dyson and Nissan have already got that massive structure that they can design it and make it in-house without having to go external."

UK chancellor Rishi Sunak has said the government will help small businesses to stay afloat by paying 80% of workers' wages through its Coronavirus Job Retention Scheme, and is also offering loans of up to £5million to small and medium businesses with a Coronavirus Business Interruption Loan Scheme. For teams with full-time staff, its pledge



Broadhurst doesn't think small suppliers will get NHS contracts

could prove a vital lifeline.

"I think the government are doing everything they can for business. They've reacted pretty quickly," Lemmer says. "The feeling I get is they want small businesses to be able to hibernate throughout this so that we can come out the other side and continue employing people."

"By giving small businesses a clear indication that we can send [employees] home, do the right thing and potentially not having it cost the company too much money, as well as offering the ability to loan money, it all helps."

But regardless of how big or small the ►

team, the money pot isn't finite and government top-ups are just that.

Dean says United Autosports has around 40 people that depend on the team for their income, including those working in different divisions of the business such

“If there's no racing then you've got no work and you can't invoice anybody”

as its historic road and race car restorations, and in its capacity as the UK agent for HRX racewear and Stilo helmets.

“We're in no different a position to any other motorsport team where if there's no racing then you've got no work and you can't invoice anybody,” says Dean. “I didn't go to business school, but I'm pretty sure that the first lesson would have been ‘if you can't invoice anybody, then you haven't got a business’. That's the case with us, no matter how big we are.”

The planning and contingency measures are made harder by the fact that nobody knows how long the shutdown will go



on for – especially if, as expected, it surpasses the three-week review period suggested last week by the prime minister. England's deputy chief medical officer, Dr Jenny Harries, said on Sunday that it could be up to six months before life in the UK returns to “normal”.

“We've had to follow the guidelines and close down for the three weeks,” says Broadhurst. “Then at the end of that we might be closed for another three weeks, we just don't know yet. But you need that flexibility when we come out the other side of it.”

Of the teams Autosport spoke to,

all were optimistic that they would be able to carry on.

Broadhurst says PMR runs “quite a skeleton crew even when we're racing”, with around eight full-time staff, “so we're a little bit more fortunate that there's not so many bodies”, while Dean plans to keep all of United's staff for the foreseeable future, with many having loyally stuck with him since his days running Team JLR in Formula Ford and subsequently Ginetta.

“We all have to presume that life at some point is going to get back to normal and motorsport is going to get back to normal and if it does, we're going to need our

Dean says United plans to keep all its staff ready for the resumption of racing



people,” says Dean. “It’s alright having a great building and a team name, but if you’ve got no staff then you haven’t got a team. We haven’t laid anybody off yet – we don’t intend to.”

“Obviously we can’t do that indefinitely and neither can anybody else in any other business, but we’ve reacted as fast as we can to put ourselves into a position to last until the next race on our schedule that hasn’t yet been postponed, in July at Paul Ricard [in the European Le Mans Series].”

“There’s an argument that the smaller teams can ride this out for longer, especially if we continue to stay loyal to all our people, but the benefit we have is we’ve got an awful lot of customers and certainly everybody has been standing by us so that we’re in a position to come back out of this.”

Likewise, Fortec and Barwell assured Autosport that they have no plans to downsize for the foreseeable future.

“We’re making sure everyone is safe at home and that’s it,” says Dutton. “As soon as we know when we can come back and get going again, we will. If there was a race meeting this weekend, we could be there.”

“A lot of race teams have got things on mortgages but we own everything so we’re in a fortunate position, but if it goes on for a year it might be a lot more difficult. We’ve just got to get through it the best we can and as it changes, we have to as well.”

“We’re lucky we’re a very established team with solid foundations, we own all of our kit and we don’t have any real debt so we’re in a very positive position, but I do feel for people that are in a more precarious position,” adds Lemmer, who is quick to praise the support of his team’s long-term customers. “They’re very positive looking towards the future, so at the moment we’re all hoping that when there are some races to do, we’ll be able to get going again.”

All the same, it would be foolish to think that motorsport won’t be any different going forward. It will surely resume at some stage – as Dean points out, the number of people it employs and the contribution to the economy it makes

means “it’s too big an industry to stop” – but the likelihood is that not every organisation will survive.

“It doesn’t matter what the company does, you’re going to be left with a monthly overhead,” says Lemmer. “At each company it’s going to come down to how they can fund that monthly overhead. There’s a cut-off point for all businesses.”

Broadhurst too anticipates that some companies could fall by the wayside, and the repercussions could be felt further, with championship organisers admitting defeat and moving on to other things.

“Over the 25 years that I’ve done it, motorsport in the UK has expanded hugely in terms of how many people have motorsport companies and how many championships there are,” he says. “So it will scale back – I’m sure.”

“I don’t think you can say anybody is fine coming out of it, because we just don’t have that visibility, but we’re fully



ROBERTS

Fortec recently invested in upgrades to its fleet of BRDC British F3 cars



JEP/MOTORSPORT IMAGES

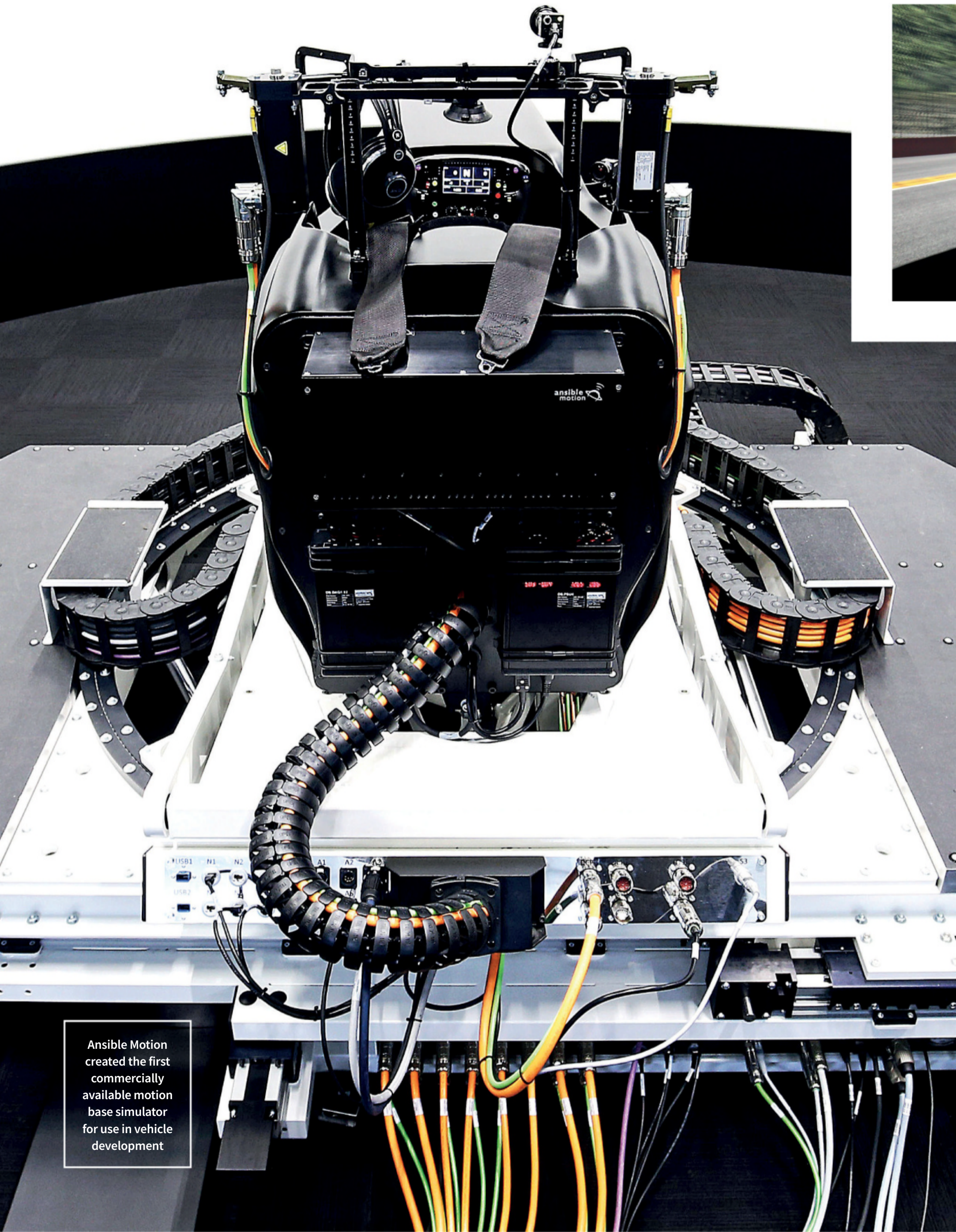
Lemmer says motorsport industry will become more efficient

committed as it stands at the minute that when the championship kicks off, we’re going to be ready.”

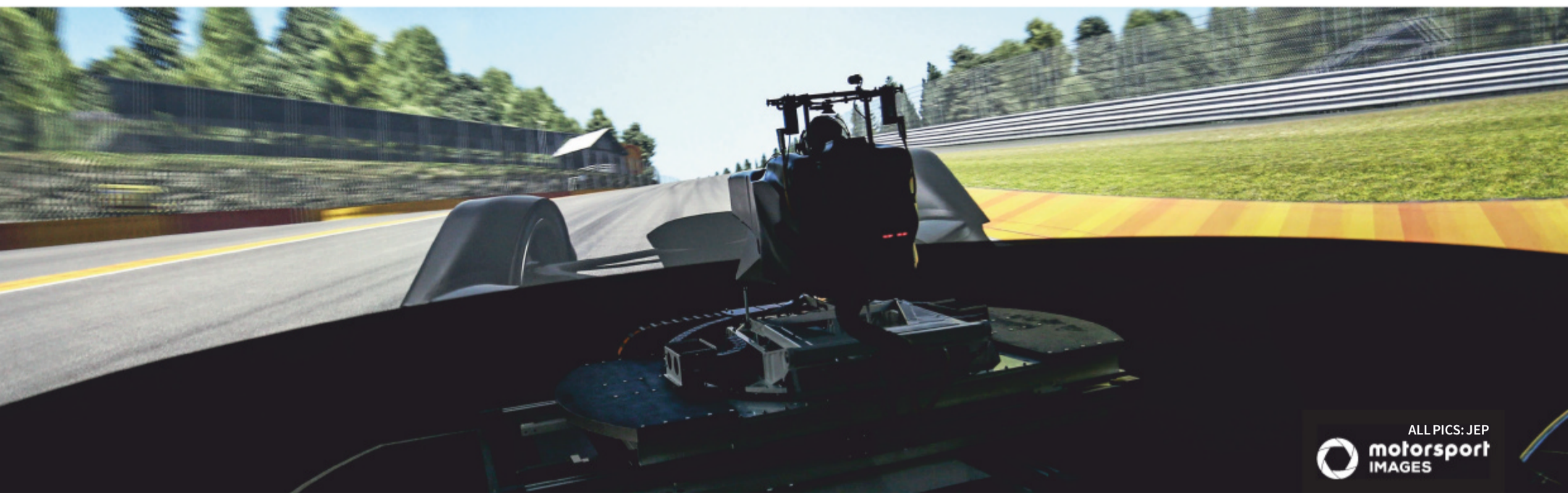
But as Lemmer points out, it’s not necessarily all bad news.

“We’ll probably have a different view on a lot of things on the other side of this, it’s going to make businesses and people question waste and efficiency and how they treat others,” he says. “Motorsport is an extremely ruthless sport, and it’s the nature of any professional competitive sport that people become very single-minded and focused, but I think a difficult situation like this brings a bit of balance back to that.”

Amid the devastation left in the wake of COVID-19, motorsport can only look forward to a return to normality. Whatever that looks like though is anybody’s guess. ■



Ansible Motion created the first commercially available motion base simulator for use in vehicle development



SECRETS OF SIMULATION

The development of simulation to become an all-encompassing development tool has been gradual – but Ansible Motion has been ahead of the curve from the start

BY JAMES NEWBOLD

In these times of great uncertainty in motorsport, efficiency is king. The swathe of race cancellations means teams don't have the chance to test new parts on track every other weekend, so all the work to prove new design concepts and test reliability of components will instead be done virtually, through simulation. But we're not talking about the standard home simulators that drivers may be using to stay sharp while waiting for their next turn in the real thing. Simulators capable of making accurate vehicle-dynamics calculations in real time are precious commodities and, as the Alfa Romeo Formula 1 team has acknowledged by embarking upon a major simulator upgrade at its Hinwil base, imperative for any high-performance automotive or motorsport firm aspiring to be successful in the 2020s. This is an irreversible trend, from which there can be no turning back.

That much is obvious to anybody who has spent more than five minutes in conversation with Kia Cammaerts, who founded his own advanced simulation company, Ansible Motion, in 2009.

Cammaerts began dabbling in simulation while working as the head of aerodynamics at Team Lotus – appropriately, Ansible Motion is located in Hethel on Colin Chapman Way – and admits he's more surprised by how long it has taken for its capabilities to be properly used than by how it has become a core development tool across multiple sectors.

“For a young engineer starting now, simulation is part of the landscape, it's



Company founder Cammaerts has F1 pedigree with Lotus

baked in, so there's a wide variety of components that you can buy straight off the shelf,” says Cammaerts, who has turned down approaches to produce simulators for tanks, helicopters and even tugboats to avoid diluting Ansible Motion's focus on high-performance ground vehicles. “Whether hardware or software, you can glue them together to make a basic simulator or do offline simulation purely on computers with quite high fidelity.”

Cammaerts – who started his motorsport career working under Ron Tauranac at Ralt, then moved to Tiga on its Group C2 sportscars and on to March's Alfa Romeo Indycar project before gaining F1 experience at Lotus and Larrousse – says he had to “understand the complete picture to tune the aero design appropriately”, and began developing simulation tools himself

to model suspension, chassis and engine performance that all fed into his aero work.

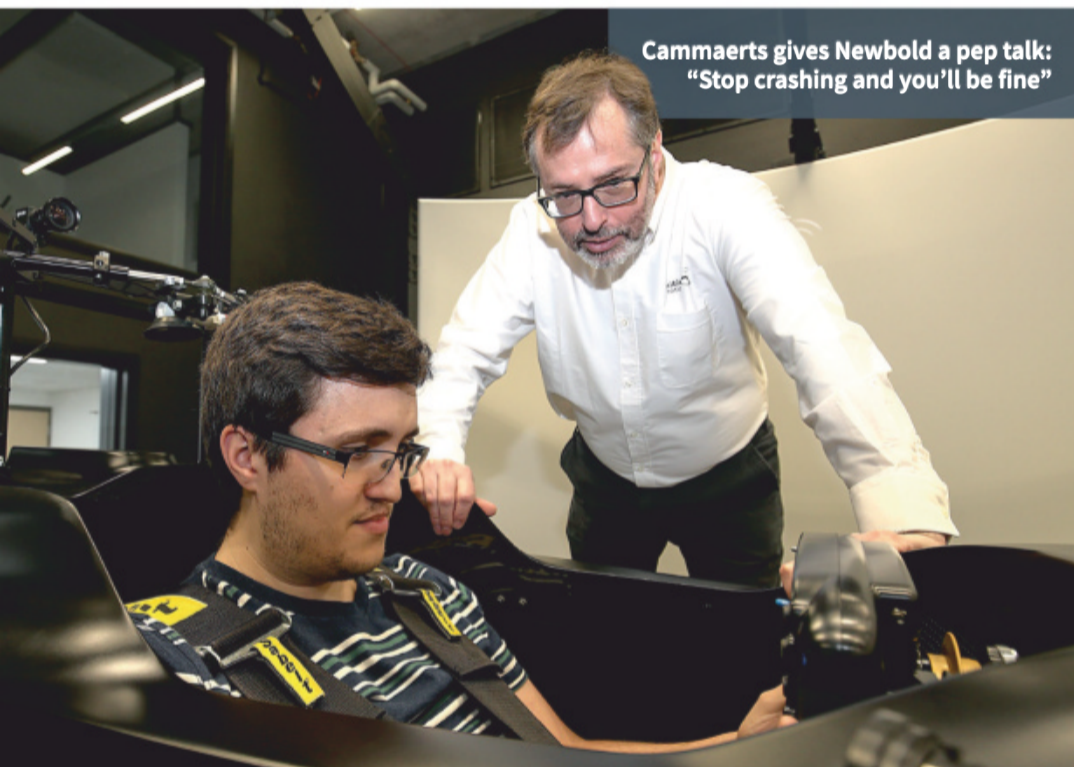
“When I started, data acquisition and data analysis were relatively primitive, PCs weren't in widespread use, and certainly you couldn't buy commercial codes to simulate things,” he says. “If you wanted to simulate something, you pretty much had to write the code yourself.”

But, as computer technology improved to a level where calculations could be performed more quickly and with high-fidelity models on powerful graphics cards, the simulations were limited without an accurate model of driver performance. As Cammaerts puts it, “you need to connect real human drivers to detailed models to fully understand everything that they're telling you.” And that's where Ansible Motion began. Where, previously, F1 teams and OEMs had to invest in developing their own simulation models due to the absence of any commercially available alternatives, what Cammaerts attributes to “a happy confluence of several industrial trends” meant it became possible for companies to develop simulation software that could put a driver ‘in-the-loop’ (DIL).

“The term ‘in the loop’ really just means ‘in real time,’” he says. “By 2009, it was possible to put together the components that you needed for a commercially available DIL simulator, but there were none available at the right quality level to fully develop professional vehicles. So we created what was the first commercially available high dynamic motion base simulator for use by engineers for developing high-performance vehicles. ▶

“Ours is a stratiform system that layers up the motion stages one on top of another, which means you have completely independent motion capability wherever you are in the motion space. For example, if you brake and turn, our motion capability is unaffected by the order in which you did things.”

When Autosport headed up the A11 to try Ansible’s sim out for size on the Rome Formula E circuit under the guidance of 2017 British GT4 champion Will Tregurtha, the first thing that stood out was the sheer size of the room. A single-seater tub stands on a state-of-the-art motion platform, made up of different layers that respond as the car pitches forward on the brakes, yaws over kerbs and – after Autosport locks up on the bumpy downhill braking zone into Turn 11 – clatters into the barrier. Despite having listened to driver-coaching guru Rob Wilson explain the art of weight transfer



Cammaerts gives Newbold a pep talk: “Stop crashing and you’ll be fine”



Tregurtha provided a benchmark that Autosport didn’t come close to reaching

time and again, the squidgy mass grappling the wheel struggles to process everything that is happening and is certainly convinced by the level of immersion.

Tregurtha, a sim-racing regular who served as the driving standards official at the Le Mans Esports Finals at the Autosport Show in January, explains that’s no surprise, and diplomatically suggests that a driver of my limited experience would benefit from more seat time in a less-demanding setting – although a confidence-boosting outing at Spa, a track admittedly not meant for Formula E, resulted in a respectable time shorter than it would take to scramble an egg.

“It’s tricky – it’s exactly as if you were jumping into a race car for the first time, except here you’re allowed to make mistakes,” says Tregurtha, who then shows Autosport how it’s really done. “You can really feel how deep and detailed the physics on the software and the

implementation of the hardware is – it’s genuinely impressive.

“I was making saves that I can only do in a real car, because you feel it from the seat and the way your body twists around the car. It’s those sorts of things that people can’t do on a normal sim without any motion to trick your brain into thinking that you’re driving a real car.”

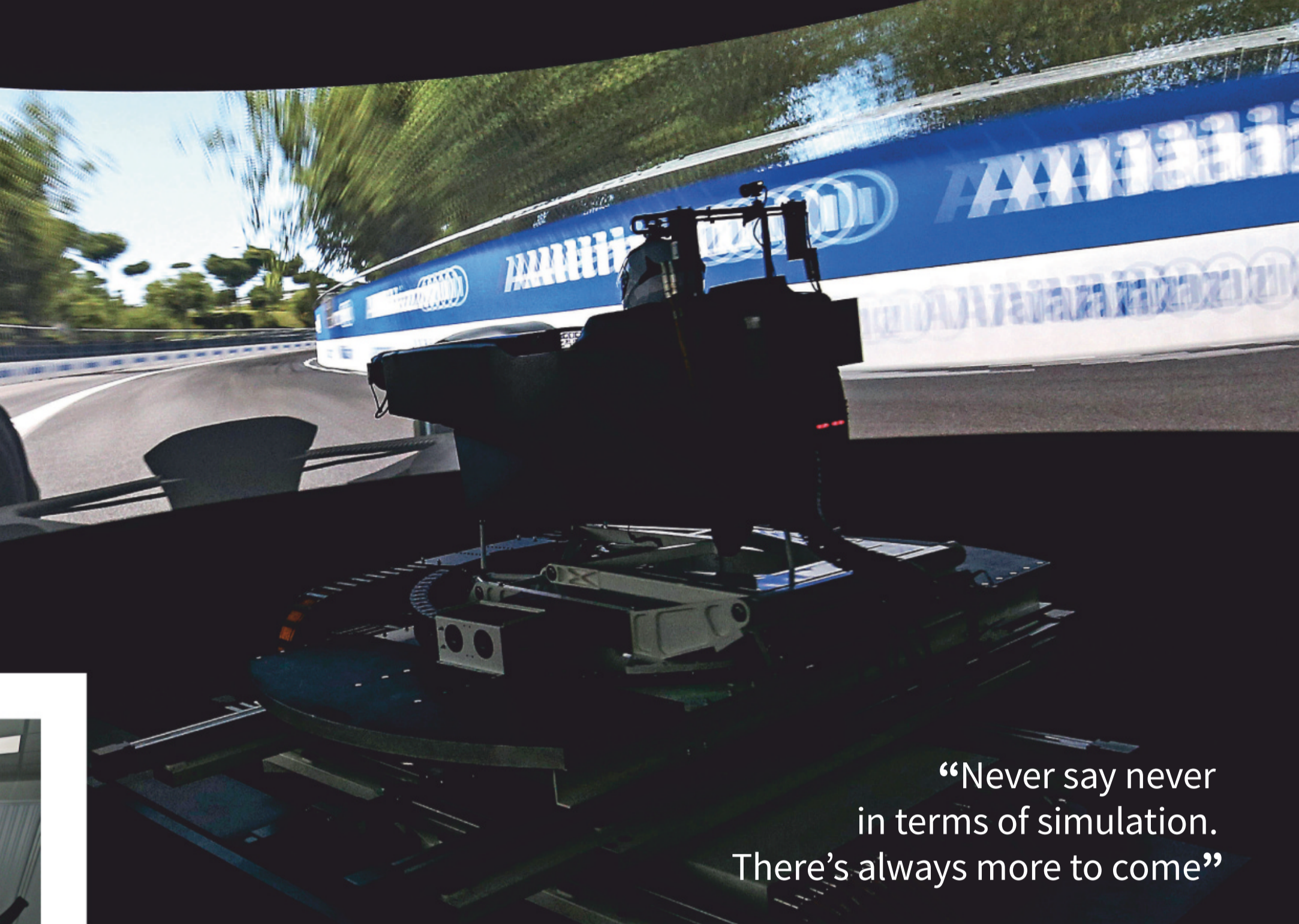
Today, Ansible Motion’s range of simulators is used by Honda, Ford Performance, General Motors and Michelin, but it certainly wasn’t a straightforward path to reach that point when the business first launched.

“Layering up the many detailed components and making them all work together was essentially the core problem, as well as understanding what direction to go in because we had nobody to copy at the beginning – we were originating an entire industrial field by ourselves,” says Cammaerts. “Once we’d created it, the next

challenge was to convince people that this assembly of technologies *could* actually work, because the early real-time driving simulators frankly weren’t that good.”

While that initial scepticism has been banished, Cammaerts says there are still many misnomers that surround simulation. “It’s not going to feel exactly like the race car, but you’ve got to have feelings that map to all the feelings that you expect from the race car,” he explains. “You’ve got to be able to simulate the sensations well enough that you can then understand as a professional race driver what the vehicle model is doing underneath all of the layers between you and it.”

But how much motion is too much? While it can help with immersion if done right, it can achieve the opposite if done wrong and detract from a simulator’s core purpose – namely, to create an environment where a racing car can be realistically represented such that it



“Never say never
in terms of simulation.
There’s always more to come”

generates feedback for that driver to use to improve whichever model is being tested.

“If the human can’t feel correctly what the vehicle dynamics are doing, they are not going to react as they would with a real car, and any feedback they give and any data you measure from the system won’t be fully useful for vehicle development,” Cammaerts says. “The key with a DIL simulator is to provide the right amount of information for the driver to feel exactly what that vehicle model is doing. If you don’t get the graphics right, then everything else is lost. But if you don’t get the motion right, then the driver won’t react correctly either.”

“It’s a matter of layering up all the different things that a driver can experience, synchronising them and presenting them to the driver in a way that not only fools him into thinking he’s in a real car, but provides him with the same sensory information that the real car would so his responses are appropriate.”

The expense involved in getting this balance right explains why most home-based driving simulators don’t bother with motion in the first place, and why Ansible Motion deviated away from its original plan, as Cammaerts explains, “to build the smallest, cheapest, simplest machine that could do the job”.

“After a fairly cursory look at the physics and the physiology of human motion

sensing and what would be required to move a human around enough to give them the information to properly understand the car physics, we concluded that it just wasn’t possible to do it cheaply and at small scale,” he says.

“The flagship Delta simulator we’ve been developing for the last 10 years is only getting bigger and more complex. It might well be more cost-effective to go for one of our simpler systems if your requirement is actually to train your driver to operate the vehicle and to learn the track. But if you want to develop vehicles, then there is no substitute for full motion.”

Previously, this was chiefly done using hexapod systems – akin to those you might see at a fairground – but they have inherent performance disadvantages that mean their utility has passed.

“With a hexapod, any motion you have in one direction is achieved by moving all of the bits of it at the same time, so they tend to run out of motion very quickly when you want to combine motions,” Cammaerts explains. “If you want to brake and turn, you might move the motion base backwards and then sideways into the corner, then you might rotate in yaw to reflect the turn-in of the car and pitch the system forward. Each one of those individual motions uses up motion space from a hexapod, so you tend to saturate the emotion that you can give

to the driver and that will immediately result in the feeling of the car not behaving as you expect.

“You can reduce the motion – if you reduce it too much, the driver doesn’t get enough sensation to understand the vehicle physics. You can make the hexapod very big, and some people have done that, but the cost becomes astronomical.”

Cammaerts says there remains potential for simulation tools to mature in the future, with the industry still waiting on “a couple of breakthrough technologies” such as head-mounted displays that could collapse the motion space needed.

“Never say never in terms of simulation,” he says. “There’s always more to come, there are always bigger or faster motion systems, there are always advances in graphics, there are deeper and higher-fidelity audio models, there are more tactile stimulation devices that you can put in.”

“For professional race teams it shouldn’t be a product that you buy from a catalogue, and it’s possible it never will be because the technology is always advancing.”

Ansible Motion recently deployed its first premium compact simulator, Theta C, and later this year will disclose details of its new range of motion systems, which Cammaerts says “will be a step forward” on its current offering. Autosport will definitely need some more seat time before sampling that... ■

HOW TO BE AN ACE ENGINEER

From title-winning driver to engineer, RML founder Ray Mallock has done it all

BY JAMES NEWBOLD

As the son of successful Clubmans formula constructor Arthur Mallock, it was always likely that Ray Mallock would end up designing and building racing cars of his own. But the man after whom engineering powerhouse RML bears its name was also a successful driver in his own right, who won two British Formula Atlantic titles and the World Sports-Prototype Championship Group C2 division in 1986. Since he stepped back from driving, his team has won three British Touring Car Championship drivers' crowns and added four consecutive World Touring Car titles between 2010-13.

Mallock never had a formal education in engineering and instead "just picked it up" along the way from his father. "It was very natural," he says. "For my final-year project at secondary school, I built a go-kart where most other people were making adjustable spanners."

Mallock did all the test and development work himself in the mid-1980s when RML ran the Aston Martin Nimrod, Ecosse C2 and Aston Martin AMR1 programmes until he handed over the reins to the perennially underrated David Leslie. Ironically, Aston would pull funding from the AMR1 project less than 12 months later, but Mallock has no regrets and cites that decision to cease driving as a seminal moment in RML's rise.

"The whole programme needed my focus and there were other people that could race as well as me," he says. "It was a wrench, but if I'd tried to carry on a semi-professional driving career then I wouldn't have had the focus and the energy to develop RML."



Mallock (left) enjoys the spoils of WTCC victory with Rob Huff in 2011

A switch to touring cars beckoned, and RML delivered BTCC titles for Vauxhall (1995) and Nissan (1999) before broadening its horizons into rallying with the Opel S1600, and the ASCAR stock car series, which it won in 2002 and 2003. Mallock, happiest working at the drawing board, was heavily involved in each success. "In the early days I was all over every detail of engineering and operations, but thankfully I learned the art of delegation," he says.

RML also built the Saleen S7R that won the 2002 British GT title, and returned to the BTCC with SEAT in 2004, before switching to the WTCC in 2005 with the Chevrolet Lacetti, which prompted Mallock to set up an in-house engine facility. "That was a huge step forward," he says. "It meant we had everything under our own control on the chassis and powertrain side."

This was one of the key factors in the success of the Chevy Cruze, which also won the BTCC in 2010, by which time Mallock had finally cracked Le Mans as an entrant with LMP2 class victories in 2005 and 2006, having never bettered second in Group C2 in

1987 in his nine attempts as a driver.

RML's most recent venture to Le Mans with the Garage 56 Nissan ZEOD in 2014 was an indication of its present path, having diversified from being a turnkey motorsport operation into a specialist in electric vehicles and advanced powertrain solutions. Currently without an active competitions arm, RML's only link today with the BTCC is as the chosen supplier of subframes.

Now retired – his son Michael runs the business today – Mallock has little practical involvement in RML's day-to-day running, but seeing young engineers thrive remains a passion. A former Aston Martin apprentice, he keeps an interest in RML's apprentices, who sample all facets of the company from chassis and composite builds to fabrication, powertrain development and aerodynamics.

"Getting your young engineers motivated gave me a great deal of satisfaction," he says. "Having that holistic experience is more rewarding and you can end up with a better result if your people understand what's going on at the front and back ends of the car, and the middle and underneath too." ■



Mallock continued racing until 1989, the final year of the AMR1

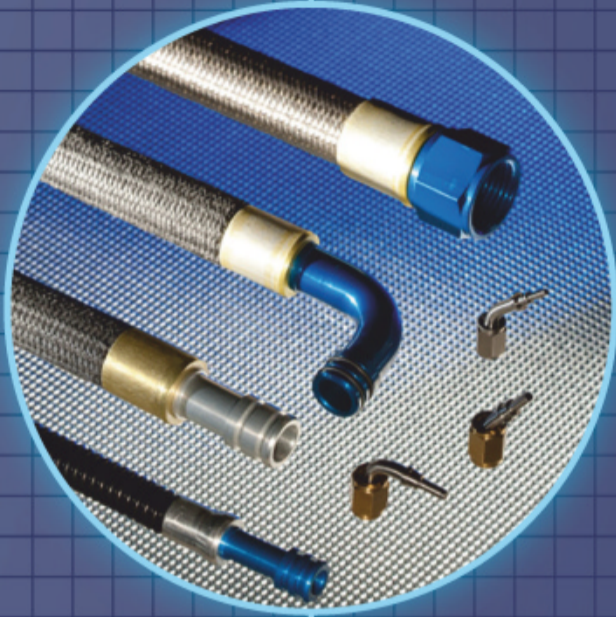
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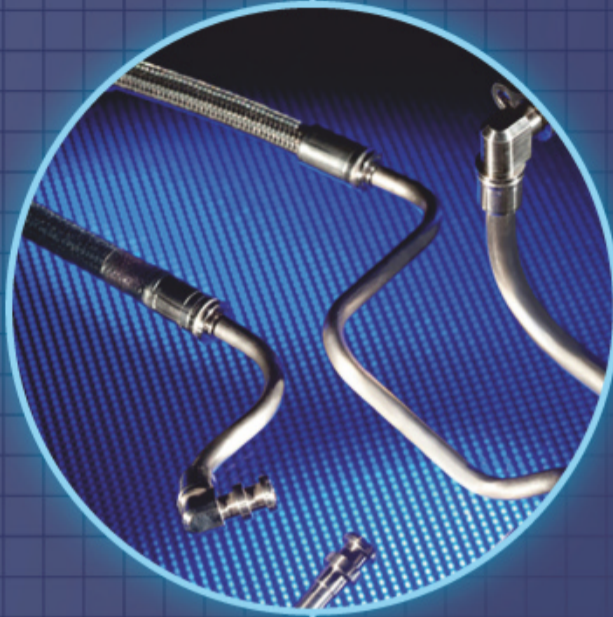
FOR ENGINEERS FROM RAY MALLOCK

- Having a positive attitude and a teamwork mentality is really important. To be a successful engineer, you need to be able to get the best out of your team around you, and if you love what you're doing then that always gets more performance out.
- Seek the benefit of experience. When I did the Nimrod, I had no experience of aero, but I was fortunate to get time with Ron Tauranac and Patrick Head. If you ask people for advice at the right time and in the right way, most people will kindly give it.

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