F1 Teams embroiled in porpoising rules row

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Verstappen hits Ferrari for six

Red Bull star holds on in Canada as Leclerc charges from the back

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F1's nearly man gets close once again but Max holds on

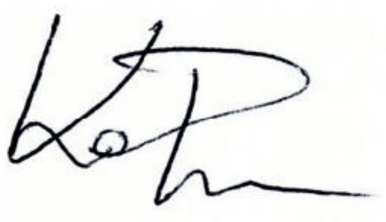
Pierre Gasly, Sergio Perez and now Max Verstappen. Carlos Sainz has finished as runner-up to those three drivers by 1.2 seconds or less in his career. And, with 11 podiums, he has now matched the late, great Chris Amon in terms of top-three finishes in the world championship without a win, with only Nick Heidfeld and Stefan Johansson 'ahead'.

Surely it won't be long before the Spaniard breaks his duck and most would be happy to see him do it. As Alex Kalinauckas points out on page 11, Sainz seems to have made a breakthrough with the Ferrari F1-75, so hopefully he can join the battle at the front more often.

There were other reasons for Formula 1 neutrals to be happy after the first grand prix in Montreal since 2019. For the second race in a row, Ferrari was genuinely competitive at a 'Red Bull track' (p12) and the Italian squad could have won any of the past four races. Mercedes making progress, and 40-year-old Fernando Alonso qualifying on the front row for the first time in a decade, were also feel-good elements.

On the down side, unless you are a Red Bull/Verstappen fan, the team in blue has now won six races on the trot. The championship fight might be all but over, but at least Ferrari has shown it should be able to make a race of it at most venues for the rest of the campaign.

The Canadian GP seemed like a good time to revisit the country's greatest driver, so we speak to Leclerc about his recent run in a Ferrari 312T4 (p36) and pick out Gilles Villeneuve's greatest drives (p40).



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NEXT WEEK
30 JUNE

British GP preview
We speak to F1's three British stars and the boss of Silverstone

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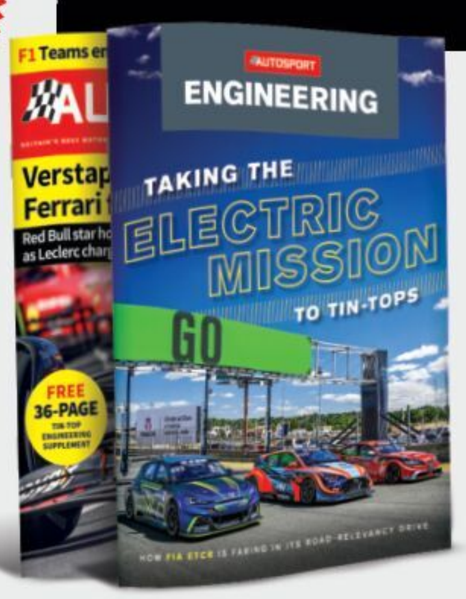


ENGINEERING SUPPLEMENT

The rise of electric power in touring car racing and how problems created by hybrids in the WRC and BTCC have been solved feature this month.

FIA intervention on porpoising stirs up latest F1 hornets' nest

FORMULA 1

The row surrounding porpoising in Formula 1 grew in Montreal last weekend when team bosses clashed following the FIA's first steps towards intervening on the matter.

Under the new F1 regulations for 2022 that reintroduced ground-effects, a number of teams have struggled with porpoising on their cars this season, with Mercedes being one of the worst-hit. Following complaints from a number of drivers over the recent Azerbaijan Grand Prix event about the safety issues involved, the FIA took action ahead of last weekend's Canadian GP by issuing a technical directive.

The FIA felt it was "necessary to intervene in the interests of safety", informing teams ahead of the weekend that they would be undertaking a data-gathering exercise by defining "a metric, based on the car's vertical acceleration, that will give a quantitative limit for acceptable level of vertical oscillations". That opened the door to the FIA telling teams to raise the rideheight of their cars if they exceeded this level, potentially hurting Mercedes in the short term.

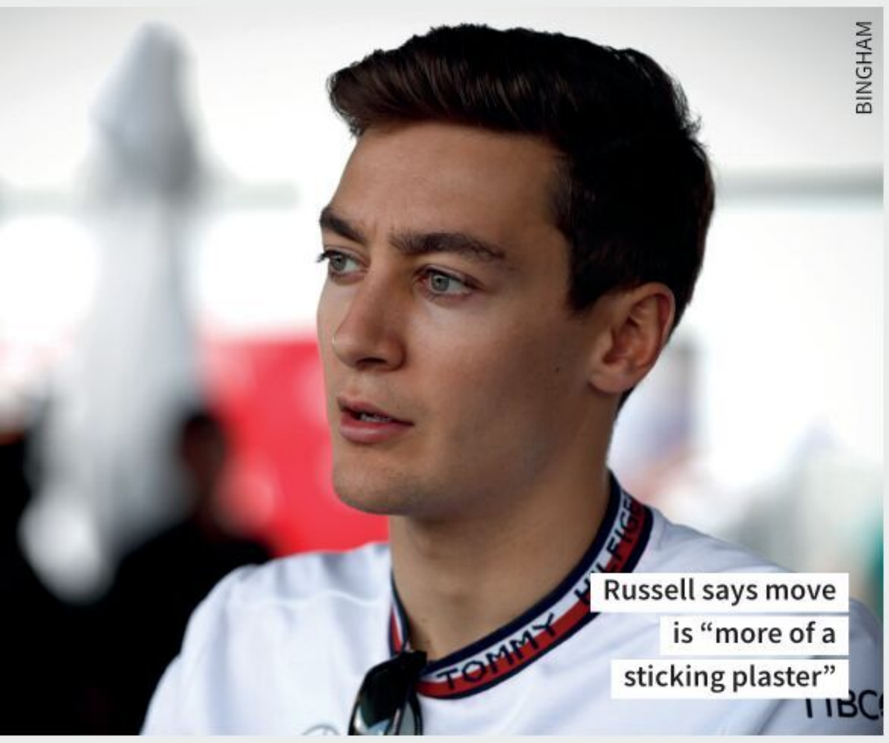
While a number of drivers welcomed the FIA's move and first step towards taking action on safety grounds, some expressed their scepticism over the proposals. Mercedes driver and GP Drivers' Association director George Russell called the move "more of a sticking plaster" rather than a real solution and that "bigger conversations are definitely needed moving forward". Max Verstappen took issue to an FIA rule change mid-season, while Charles Leclerc questioned why Ferrari's efforts to reduce porpoising should be "put in the bin" purely because other teams have been unable to make the same kind of progress.

Verstappen also thought it would be hard for the FIA to police, a view echoed by Toto Wolff and Christian Horner, the respective team bosses of Mercedes and Red Bull. But it would prove to be a rare moment of agreement between them on what became a fraught weekend politically.

Mercedes reacted to the TD by adding a second stay to help stiffen the floor on its car for FP1 in Montreal, but was the only team to go down this route. This caught the attention of rivals, who questioned whether or not the FIA had followed the right processes in allowing the extra stay to be fitted, as well as the timing of the directive given it was issued while most were flying to Montreal, making it too late for them to react. As a TD is advisory and not a regulation change, there were grounds for a potential protest against Mercedes, which removed the second stay for FP3 onwards.

During F1 boss Stefano Domenicali's regular Saturday coffee meeting with the team principals, it was pointed out to Wolff that some teams, especially Ferrari and Alpine, felt the TD was a breach of the regulations and that the second floor stay was illegal. It is understood that Horner then suggested to Wolff that Mercedes' porpoising problems lay with the concept of the team's car, rather than the regulations themselves, and that it was up to the squad to get its own house in order.

"The issue with Mercedes is more severe, or certainly has been prior to [Canada]," Horner said on Sunday. "That surely is down to the team. That's within their control to deal with that, if it's not affecting others. We haven't had an issue with



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BINGHAM

Wolff has accused rival team bosses of manipulation

bouncing. The problem is they're running their car so stiff. I think their concept is the issue, rather than the regulation."

After the meeting, Wolff slammed the behaviour of rival team bosses, accusing them of "trying to manipulate what is being said in order to keep the competitive advantage and trying to play political games".

"All drivers, at least one in every team, have said that they were in pain after Baku, that they had difficulty in keeping the car on track or blurred vision," said Wolff. "Any time this is a safety risk, and then coming up with little manipulations in the background, or Chinese whispers, or briefing the drivers, is just pitiful."

F1 followers will see some of the meeting play out for themselves because a camera from Netflix was in the room, filming for the next season of *Drive to Survive*, which Horner felt led to "an element of theatre".

LUKE SMITH & JONATHAN NOBLE

PIASTRI WILL RACE IN 2023 – WITH WILLIAMS?

FORMULA 1

BINGHAM

Alpine is confident of securing its protege Oscar Piastri a Formula 1 drive for 2023 amid continued links with Williams.

With Fernando Alonso poised to extend his F1 stay at Alpine alongside the contracted Esteban Ocon, Williams has become the most likely destination for reigning Formula 2 champion Piastri, to replace the struggling Nicholas Latifi.

Alpine boss Otmar Szafnauer said Alpine would "take our time and at the right moment within the silly season we'll have a look around and make those types of decisions". Asked if he thought Piastri would be racing in F1 next year, Szafnauer replied: "Yes."

Williams boss Jost Capito acknowledged that Piastri would be "on the list" for a seat next season, but dismissed suggestions that he could replace Latifi before the current campaign is out. "We don't have any other plans," he said. "Both [drivers] have a contract for the season, and our plan is to fulfil that."

Szafnauer was coy about any agreements already being in place, saying: "We don't talk about the details of our contracts we have."

Piastri has been undertaking extensive private testing this year to prepare for an F1 graduation in 2023 as part of his Alpine reserve role.

LUKE SMITH

French GP traditionally took place on public roads, here at Clermont-Ferrand in 1972

SUTTON

Nice enters calendar equation

FORMULA 1

Formula 1 CEO Stefano Domenicali has floated the idea that the French Grand Prix could be run on a street circuit in Nice amid negotiations over the event's future.

Along with Belgium, France is one of the races that could be rotated as F1 struggles to fit all the new events into the calendar while retaining a foothold in its European heartland.

Domenicali referenced the Nice bid in an interview with France's *L'Equipe* newspaper. "Historically, France has been an important nation in motorsport," he said. "You might not know this, but there is an amazing project with Nice, who want a grand prix. It's great, as it proves that other destinations in your country are interested in F1."

The news not only puts the prospects of Paul Ricard retaining the French GP in doubt, with its contract expiring this year, but it potentially also gives F1 a bargaining chip in its ongoing negotiations over a new deal for Monaco, since a French GP in Nice would give the series a high-profile new event just a few miles from the principality.

ADAM COOPER & BENJAMIN VINEL

Junior series heading to Melbourne in 2023

FORMULA 2/3

The FIA Formula 2 and 3 championships will both race at the Australian Grand Prix from 2023, and join the Albert Park line-up from next season as part of the circuit's new Formula 1 deal.

The addition of F2 and F3 to what is traditionally one of the busier undercards is likely to impact the pool of local categories vying for a support slot, but it is thought that the popular Supercars series will remain on the bill.

F2 and F3 CEO Bruno Michel said he had "very positive" reactions from most of his teams since the announcement. "I think there are more and more promoters who are keen to have us around, because we add quite an interesting event to the Formula 1 weekend," he said. "And even Australia, I must say at the beginning, when we started to discuss, I thought, 'You know, this is something that is going to be completely new, because of course, we've never been there, and you cannot do any more in terms of distance'.

"But they were quite keen to have us, Stefano [Domenicali, F1 chief] is quite keen to have us as much as possible, so we discussed with them, and we found an agreement. It's great news for all of us."

The furthest venue to which the junior series both currently travel is Bahrain, while F2 also makes the trip to Abu Dhabi for its season finale.

F2 gets to try another temporary race track

SUTTON/MOTORSPORT IMAGES

F1's contract extension with the Australian GP guarantees that the event will stay in Melbourne until at least 2035. There are three years remaining of the current deal, so this represents a 10-year extension for the event.

As part of the new deal, the Australian GP will open the F1 season a minimum of five times. It will be the opening round in 2024 and 2025 and then another three, yet-to-be-determined times in the decade that follows.

MEGAN WHITE

Turkington forced into old BMW for Croft

BTCC

Four-time British Touring Car champion Colin Turkington has been forced into his 2019 title-winning BMW 3 Series for this weekend's round at Croft after its new owner gave West Surrey Racing permission to press it into service following his enormous accident at Oulton Park (right).

The damage to Turkington's 330e M Sport chassis 6, which was new for this year, is too great to be repaired in time for Croft after the Oulton incident, in which he rammed Dan Lloyd's stricken Excelr8 Motorsport Hyundai i30 N after the Yorkshireman had bounced back onto the circuit following contact with the barriers. The impact has been measured as 40G.

While Lloyd's Hyundai has been repaired at BTCC chassis specialist Willie Poole Motorsport, Turkington's old chassis 1, in which he finished runner-up in the BTCC points in 2020 and 2021, is being converted into hybrid spec at the same premises. WSR then hopes to have chassis 6 repaired and back in action at Knockhill in late July.

JEP/MOTORSPORT IMAGES

"I had to get permission to use chassis 1 from its owner," said WSR chief Dick Bennetts. "We're having it modified for hybrid and that's quite a lot of work, but it's the quickest way around it. If we didn't get the go-ahead for that we'd have been in trouble. Colin's still got a sore neck, but his chest is OK now and he came in on Saturday to support the guys working."

Lloyd, meanwhile, will be fit enough to race at Croft, but the cost of repairs to his Hyundai – £95,000 plus VAT – has pushed him way over the £40,000 crash damage he had budgeted for the 2022 season.

"It's a struggle and a tough situation," he said. "Budget was already tight but I've got some quite large plans in place to make it up. A few fans have come forward and said they'll help but I don't want handouts. I want to put together a bundle or package, potentially hot laps at Donington, a bit of crash damage that's signed. I'm fine now. I was sore last week but Friday and Saturday was a big improvement."

MARCUS SIMMONS

CLASSIC DRM CUP The DTM's new Classic DRM Cup support series kicked off at Imola last weekend, and this ex-Klaus Ludwig 1981 title-winning Zakspeed Ford Capri Turbo won both races. On Saturday, it was long-time DTM team boss Peter Mucke behind the wheel, the 75-year-old emerging from the depths of the grid after a flag infringement in qualifying. On Sunday, it was his son, ex-DTM racer Stefan, who took honours. Mucke Sr was joined on the podium by two BMW M1 Procars. Michael Kammermann repeated his second place on Sunday, with ex-BMW junior Otto Rensing third in a Porsche Carrera RSR. **Image by DTM**

Applications open for Team UK Games squad

MOTORSPORT GAMES

Team UK's squad for the second running of the Motorsport Games in October is coming together. The first drivers for the Olympic-style, multi-discipline event focused on Paul Ricard have been announced and entries opened for the remaining categories.

Chris Froggatt, Pro-Am class champion in last year's GT World Challenge Europe Endurance Cup (right), will contest two events: he will be the silver-rated driver with an as-yet-unannounced bronze in the GT Sprint as well as racing in the 60-minute one-driver GT race in which platinum and gold professionals are permitted. Oliver Mellors will fly the flag for Team UK in the Rally2 category along with regular co-driver Ian Windress. Tim and Steve Jones will compete in the Historic Rally category for machinery built between 1970-81.

The UK nominees for drifting, the junior and senior Crosscar off-road and electric auto slalom events have also been named. Motorsport UK has announced application details for the remaining classes.

There is a total of 17 categories for the event held on 26-30 October, including Formula 4, TCR and sim racing. The circuit races take place at Paul Ricard, the off-road events at the Veynois autocross venue 200km to the north, and the two rallies on the roads of the Saint-Baume region surrounding the home of the French Grand Prix.

GARY WATKINS

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Nasr joins Porsche big guns for Spa

SPA 24 HOURS

Felipe Nasr will make his first GT racing start in Europe next month at the Spa 24 Hours. The new Porsche driver will make an assault on the Belgian enduro as part of an all-factory line-up fielded by Australian entrant EMA Motorsport.

The ex-Sauber Formula 1 driver will share the EMA Porsche 911 GT3-R with Matt Campbell and Mathieu Jaminet at Spa on 30-31 July for the double-points round of the GT World Challenge Europe Endurance Cup. They were his partners at the Pfaff Motorsport squad back in January when he notched up GTD Pro victory at the Daytona 24 Hours (above).

Spa is the latest extracurricular activity for Nasr after his announcement along with Dane Cameron as a development driver for Porsche's LMDh prototype programme. The Brazilian raced for Pfaff at the Sebring 12 Hours in March and is also scheduled to do the Petit Le Mans 10-hour enduro at Road Atlanta in October. His GT outings come alongside testing duties with the new Porsche prototype, which will expand into North America next month.

EMA previously made a one-off start in the GTWCE in 2020 with a McLaren 720S GT3 and is using Spa as a lead-in to a full campaign in the 2023 Intercontinental GT Challenge, of which Spa is a part.

Meanwhile, the GPX Racing Porsche squad's 2022 IGTC assault is getting off to a belated start after missing the delayed Bathurst 12 Hour in May, and it will be out at Spa with the same line-up that won the big race in 2019. The United Arab Emirates entrant, which is again working with ART Grand Prix, has brought Kevin Estre, Michael Christensen and Richard Lietz, all World Endurance Championship GTE Pro title winners, back together to drive its 911 GT3-R in the Belgian classic.

Nick Tandy and Laurens Vanthoor, part of the winning Rowe Racing Porsche squad at Spa in 2020, will be back with the KCMG team at Spa next month. They will share their Porsche with Dennis Olsen.

GARY WATKINS

Van Gisbergen to make World Rally debut

WRC

Supercars star Shane van Gisbergen will make his World Rally Championship debut on Rally New Zealand.

The Kiwi will take part in his home event on 29 September-2 October as part of a new foray into gravel rallying. He dipped his toe into the water last year with a class win at the City of Auckland Rally, followed by an outright win at the Battle of Jack's Ridge. He has since embarked on a partial Australian Rally Championship programme in a Skoda Fabia R5 run by Race Torque. Van Gisbergen will drive the same Skoda, with Glen Weston as co-driver, in the WRC2 class on Rally NZ.

"I've been around it a long time and going to all the rallies when I was young watching Rally NZ," said van Gisbergen. "It has always been a dream to do it but I've never really had the chance.

"They had it at Totara Park, which was not far from where I grew up. It was in the early 1990s and it was at night. I remember being on dad's shoulders watching the cars go through there. It's cool that I will be on the other side of the fence.

"I do not have any expectations for results. For me just competing in the event is going to be epic."

ANDREW VAN LEEUWEN

HORSBURGH/MOTORSPORT IMAGES

Ratel harked back to 'Moby Dick' 935

Ratel: thumbs up for GT3 plan

WEC

Stephane Ratel, the architect of the GT3 category, normally bangs the 'if it ain't broke, don't fix it' drum when it comes to his baby. But the Frenchman has come out in favour of the idea for the cars to have a revised look when they arrive in the World Endurance Championship in 2024 after the demise of GTE.

Ratel believes that the plan outlined earlier this month by WEC promoter and Le Mans 24 Hours organiser the Automobile Club de l'Ouest for a premium GT3 class has legs. The ACO wants cars racing under its umbrella to be distinct from those competing in the global category and has come up with the idea of a special bodykit that would be cost-effective and have a negligible impact on performance.

"I'm supportive of it, because it would create something new and novelty is never a bad thing," said Ratel, who confirmed that he had been consulted on the plan. "It could create some cool-looking cars. This is in the tradition of Le Mans, where we have always had different-looking cars, long-tail cars like the 'Moby Dick' Porsche 935. I think this is in the ACO's DNA and was always part of the discussions once we started talking about having GT3 in the WEC."

Ratel suggested that a class that for the moment is going under the LMGT moniker would be good for the teams and the car-owning amateur drivers who will be at the heart of what will be a strictly pro-am category. "One of the strengths of GT racing is that the cars are good investments," he explained. "The owners will end up with special cars: an LMGT will probably be worth more than other GT3s racing around the world at the end of its career."

Ratel suggested the budget reduction in running a GT3 car over a GTE would mitigate the cost, put at a maximum of €50,000, of the new bodywork. His only question was whether the revised rules would be put in place for the Asian Le Mans Series, a championship in which he now has an involvement and which already runs its GT class to GT3 rules.

GARY WATKINS

IN THE HEADLINES

NO MORE WEC FOR OGIER

Eight-time World Rally champion Sebastien Ogier looks unlikely to contest the remainder of the World Endurance Championship with the Signatech Richard Mille Racing LMP2 squad. "Even though it was announced differently, we were always clear with the team that I would just do the Le Mans 24 Hours and the two previous races to prepare for it," he said in the wake of his debut in the French enduro. "There's a good chance the season ends here."

NEW (OLD) FACES IN BTCC

There'll be two changes to the British Touring Car Championship grid for this weekend's round at Croft. James Gornall returns following his part-season in a Trade Price Cars Audi in 2020 to fill in at the Excelr8 Motorsport Hyundai squad for Jack Butel, who has a personal commitment. Meanwhile, rocker Rick Parfitt Jr has a clashing gig, so Carl Boardley will be back behind the wheel of the Team Hard Infiniti Q50.

MAWSON'S AUSSIE CROWN

Formerly European-based Aussie Joey Mawson wrapped up the historic Australian Drivers' Championship for a second time last weekend at Hidden Valley in the final round of the S5000 series. Team BRM driver Mawson had done enough in the heats to be assured of the crown, which was just as well because he was taken out of the final in an accident. Aaron Cameron took victory in the final, with James Golding and Cooper Webster second and third in the points.

GUVEN IN FOR CASSIDY

Porsche specialist Ayhancan Guven will make his DTM debut in next week's round at the Norisring. The Turk replaces Nick Cassidy, who has clashing Formula E commitments, in the AF Corse-run, Red Bull-backed Ferrari team. Guven, third in the Porsche Supercup last year, has switched to ADAC GT Masters in 2022.

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Sainz's Ferrari breakthrough

The Spaniard enjoyed his best race so far this season in Montreal. The confidence he now has driving the F1-75 should be the springboard to a maiden F1 victory

ALEX KALINAUCKAS

"In the race I was pushing flat out without any fear of losing the car. Like I had, for example, in Barcelona."

Carlos Sainz's explanation of his feeling inside his Ferrari F1-75 throughout last weekend's Canadian Grand Prix rather neatly summed up his campaign so far. Promise, frustration and errors. Yet, with his speed throughout the Montreal event, a close finish behind Max Verstappen and the Red Bull driver's insistence that he "seemed to lack a little bit compared to Carlos", last weekend goes down as Sainz's best so far this season.

Even though he might have won in Monaco without being held up by Nicholas Latifi's lapped Williams after smartly and decisively choosing to go straight from full wets to slicks, he'd been well off Charles Leclerc's qualifying and early race pace. Sainz's combined efforts at the Circuit Gilles Villeneuve added up significantly and were the result of a breakthrough with the 2022 Ferrari.

Before we assess his performance in Canada, it's important to understand why Sainz has been enduring a challenging campaign despite Ferrari's title-winning aspirations. It's not just that team-mate Leclerc has won twice and claimed six poles. It's that even as he collected four podiums before arriving in Montreal, Sainz just wasn't able to reach Leclerc's level in the F1-75. But, to the Spaniard's credit, he publicly fronted up to his challenge and didn't hide his disappointment that he couldn't ace it.

"We've changed things on the car to make it a bit more to my liking. They seem to be working"

He'd come into 2022 buoyed by beating Leclerc in the points in his maiden Ferrari season. But the new ground-effects Ferrari, with its upgraded and newly potent engine, required a different driving style and Leclerc adapted better. From the Bahrain test and race, Sainz couldn't match the way Leclerc was able to throw his car through a corner and cope with the results through delicate additional throttle application. In that style, Leclerc is similar to Verstappen — although wilder overall, which leaves him prone to moments such as his spin at Imola. The sensitivities of the new ground-effect cars also didn't help Sainz's efforts, as aggression over kerbs is now generally punished.

Sainz's early 2022 podiums were followed by a confidence-sapping crash streak. There were eerily similar circumstances to mid-2021, when Sainz crashed three times in practice or qualifying sessions trying to match Leclerc's mid-corner speed with a loose rear end in the SF21. His Melbourne weekend disaster in April is understood to have actually masked something of an early breakthrough on mid-corner car control, and Sainz got back to feeling happier with his progress in understanding the F1-75's needs by the Miami GP in May, but still wasn't satisfied. In qualifying, he overdid it at that track's last real corner trying to match Leclerc's line and so ended up starting just behind.

The key breakthrough, Sainz says, for his Montreal step, was down to the work Ferrari has been putting in to match his car's set-up for the driving style he knows he must implement. The 27-year-old was also running a bigger rear wing than Leclerc. This added downforce to improve rear-end handling, and he was able to really hustle the car all weekend. But Sainz puts a key caveat on those promising Montreal results.

"We've changed things on the car to try and make it a bit more to my liking," he explained. "And they seem to be working. But at the same time, I think I need more circuits, more different kinds of corners to have a proper feel for that."

As good as he was last weekend, there was still a minor error that had big ramifications. The time he lost in the final corners of Q3 let Alonso qualify ahead, and by the time Sainz had cleared his compatriot in the race Verstappen was 2.5 seconds clear. Given the tight finish, did that cost Sainz his first F1 win?

There was also a lingering sense among onlookers in Montreal that had it been Leclerc chasing Verstappen in the shootout after the safety car, he might have found a way by or at least attempted a move. In a way, Sainz's bigger rear-wing assistance worked against him during the frenetic chase, while Leclerc's lower-drag profile part and Ferrari's updated beam wing would have been helpful (there was a 7.1mph difference in their best race speedtrap figures).

In any case, Red Bull showed again last weekend that it is fallible if it doesn't get things perfect on tyre wear and preparation. In Canada, Red Bull reckoned the Saturday rain resetting the track, combined with cooler temperatures, knocked it off course and led to Sainz's slight race pace edge.

So, although this season is looking ever trickier for Ferrari's bid to finally end its 15-year wait for a drivers' title now Verstappen has moved to 46 points clear (of Sergio Perez), there's every chance it will still be in the mix for race wins at the remaining rounds. Leclerc will be soon back in his usual 2022 circumstances, but Sainz — the clever, determined and mentally strong character Ferrari so loves — has shown he now has what it takes to compete. If he can ride his Montreal breakthrough for the rest of 2022, it surely won't be too long before Sainz finally takes his first F1 race win too.

P12 CANADIAN GP REPORT

FORMULA 1

‘FASTER’ FERRARI STILL CAN’T BEAT VERSTAPPEN

Carlos Sainz gave his all in his pursuit of the Red Bull driver to the finish, but his professed pace advantage just wasn’t enough to take the victory

ALEX KALINAUCKAS

SUTTON motorsport IMAGES

"I left everything out there. But compared to Red Bull, we were quicker the whole race. First time this season I can say that I was fastest man on track." Carlos Sainz's demeanour in the four 2022 post-race press conferences he'd attended before last weekend's Canadian Grand Prix had been strikingly downbeat. His struggles to gel with the Ferrari F1-75 and team-mate Charles Leclerc's superiority explained why the famously open and analytical driver didn't want to over-celebrate. This time, he exuded confidence. But it was paired with familiar despair, because Max Verstappen had beaten him to victory in Formula 1's first race in Montreal since 2019.

At the start of the 70-lap affair, Fernando Alonso's Alpine sat between Verstappen and Sainz at the head of the grid. But any aspiration the double world champion had of attacking polesitting Verstappen at the first corner, where he suspected the Dutchman might drive with his title ambitions in mind, was struck down as soon as the lights went out. Verstappen, although wary that "it was very low grip out there" after Saturday's rain washed away the rubber laid down during Friday practice, shot away from pole and comfortably led into Turn 1. Sainz looked to the inside as Lewis Hamilton locked his left-front just behind, but Alonso held on, which aided Verstappen's run to a one-second lead at the end of the first tour.

It took Sainz until the end of the third lap before he passed his fellow Spaniard — with DRS at the first chance running down the long back straight. From there he was left with a 2.5s gap to Verstappen, which increased to 3.1s by the end of lap five.

But here, Red Bull's hopes of sailing off into the distance as serenely as the cargo ships negotiating the narrow channel between the Circuit Gilles Villeneuve-supporting Ile Notre-Dame and the city of Saint-Lambert on the east bank hit a problem. Verstappen's medium tyres were graining and his lead began to slip, back down to 2.6s at the end of lap eight. Sainz's rubber was also tearing and spreading, but the Ferrari had a fractional pace advantage and was bringing it to bear. "I think it was maybe because it was a little cooler [compared to Friday]," Red Bull team boss Christian Horner said of why Verstappen's tyres were graining, while his charge suggested "the greener track... didn't help for us."

But how things might have played out with a full stint on the medium tyres (the pitstop window for that compound was expected to start around the 20-lap mark) will never be known due to Red Bull's second unexpected development. And this one was rather more of a shock for the squad. After starting down in 13th, Sergio Perez had passed Valtteri Bottas and Alex Albon on lap one — the Alfa Romeo when Bottas outbraked himself at the final chicane, biffing the rejoining point marker board on his way through the runoff, and the Williams with a better launch. Perez then harassed McLaren's Daniel Ricciardo as he sought to recover back up the order after his costly qualifying crash.

But on lap eight, Perez suffered a suspected gearbox failure as he ran down the curving acceleration zone between Turns 7 and 8. He pulled off into the big runoff area at that point and, because his car then needed to be recovered, the virtual safety car was activated.

Although it was unclear how long the VSC would last as Verstappen approached the pits on lap nine, Red Bull called him in to switch to the hard tyres. Ferrari, which had heard Sainz informing race engineer Riccardo Adami his "tyres were good" and suggesting the mediums had gone through the graining phase, ordered him to do the opposite to Verstappen and stay out. This meant that when green flag racing resumed, the gap between the pair was 6.4s. Verstappen, who had rejoined behind the also not-stopping Alonso, quickly caught and then easily passed the Alpine with DRS running down to the final corners on lap 15, while at the same time cutting Sainz's lead down to 5.7s.

"We banked the pitstop," Horner said of the call to give Verstappen a VSC service. "At that point, you are committing to a two-stop strategy as your fastest race. And it would have been interesting to see how that would have played out, because Carlos was obviously then committed to the one-stop."

Over the next four laps, Verstappen chipped away at Sainz's

RB18's low-drag nature plus strong traction proved crucial in defence

MAUGER/GETTY IMAGES; RED BULL CONTENT POOL

advantage by around 0.3s each time, but the Ferrari driver was still generally producing strong times in the high 1m17s. But then a deja vu moment occurred, which impacted how the one- versus-two-stop strategy would play out and erased the 10s time gain Red Bull had made by stopping under the first VSC compared to a stop with rivals doing racing speeds.

Another car pulled up in the Turn 8 runoff – this time it was Mick Schumacher's Haas. The German's miserable run continued when his car's engine shut down as Zhou Guanyu drew alongside out of Turn 7 on lap 19, and he then coasted to his eventual stopping point.

Now Ferrari acted to bring Sainz in while the race was suspended, telling him that the degradation on the hard rubber on which Leclerc had started down the order was less than expected, and so its preferred one-stop plan was still on. Like Red Bull with Verstappen earlier, Ferrari too had to tell Sainz he could only pit if the final pre-pitlane flag board at the end of the penultimate straight was displaying the VSC activation. It was and so he duly came in, but the grand prix went back to racing speed just as he was approaching his pitbox.

This meant Alonso cycled back in front of his compatriot, with Sainz getting past again with ease using DRS into Turns 13/14 the tour after his out-lap. Despite having to chase and then pass the Alpine, Sainz's gap to Verstappen remained stable at 9.4s, and once he was back in free air he began cutting into the leader's advantage. He did so at an average of 0.125s each tour over the next 11 laps to get down to 8.1s behind.

But just when it seemed that Verstappen had stemmed the time flow, he began to creep back up towards the top end of the 1m17s, with Sainz lapping at the lower end of that bracket. At the end of lap 42, Verstappen's lead was down to 6.1s and so, at the end of the next tour, Red Bull called him in to take the second of two new sets of hard tyres with which he had come into the race. "I expected to have a little bit more pace," Verstappen said of his battle with a Ferrari he had barely seen to this point in proceedings, but which was nevertheless close. "We seemed to lack a little bit compared to Carlos. But we did our strategy and I think for us it worked. Like that was the right one to do."

What it meant for Verstappen was that he had to close a 10.8s gap in 26 laps, with Sainz set to try to go the distance and requiring a 50-lap run on the hard rubber. The Ferrari driver reckoned "we could have made it to a flag", but knew he would have had a fight on his hands late in the race. This was because Verstappen was indeed eroding Sainz's lead – by 0.762s over the next four laps – and "all the metrics we have showed he would have caught and passed with about 10 laps to go," explained Horner. "But you never know..."

And indeed, we never did get to see how that ending would play out because of yet another race interruption. On the leader's 48th lap, Yuki Tsunoda, who had just pitted from 12th for fresh hard tyres, "pushed too much on pit exit" and paid for it massively. The AlphaTauri's front right locked and he slid straight on into the Turn 2 barriers, breaking »

"I EXPECTED TO HAVE A LITTLE BIT MORE PACE. WE SEEMED TO LACK A LITTLE BIT COMPARED TO CARLOS"

It was the end of lap three before Sainz got past front-row starter Alonso

MAUGER/MOTORSPORT IMAGES

both front corners. This time, the safety car was sent out and that call came just seconds before Sainz arrived at the pit entry behind the final corner. He dived for the pits at the same time as Adami told him to do so, with Ferrari team boss Mattia Binotto later calling for "sharper decisions [by race control]" since "we had only one second to react and we reacted within one second" because "the team was very good in reacting to come into the pits and the driver himself as well".

"It's difficult to judge," Binotto said of Sainz holding onto the lead if the one-stop strategy had played out to the finish uninterrupted. "We know that in order to defend he should have been very fast on track – at least a 1m17.4s, 1m17.3s [every] single lap because Max was very fast behind. It would have been very close... He was certainly as fast if not slightly faster than Max.

"If anything, the quali was not perfect from Carlos [and] that cost him a bit maybe [in the race]. Because being ahead or chasing, certainly it's a different matter."

"It's a shame," Sainz reflected on his second stop, even though it left him with a six-lap tyre-life advantage on his second set of hard Pirellis compared to Verstappen. "I felt without the safety car, he wouldn't have caught me easy. I think it would have been a good battle at the end. [Even] with him catching up on me, I was ready to hang it out there until the chequered flag."

Instead, that was Verstappen's job to the finish, with the race getting back under way at the start of lap 55. The leader had weaved at slow speed for the duration of the back straight before finally blasting back up to full speed when he attacked the final chicane. Sainz, opting not to weave and risk being dropped, therefore had to cope with colder hard rubber on what was a tough tyre compound to switch on all weekend in Canada. Verstappen's canny tactics ensured he restarted with just enough advantage for there to be no chance of Sainz looking to pass into the first corner.

The stage was set for a 16-lap shootout to settle what had previously been an engaging strategic race, with Sainz pushing hard to ensure he remained within DRS range of Verstappen once the system was reactivated on lap 57.

Verstappen, aware that "if I made a tiny mistake, Carlos would gain a tenth on me and that might have been enough to then get closer in the first DRS zone" down the penultimate straight, knew he had to be inch-perfect even while "pushing to the limit" to the flag. Behind, Sainz was "risking everything – over the kerbs, close to the walls" and having "a few moments out there in the dirty air". But he couldn't get close enough to try a move.

Sainz twice reduced Verstappen's lead to under 0.4s, and twice moved to try to put the Dutchman off going into the final chicane with a look to the inside, but it was to no avail. And, although the Red Bull's slippery low-drag nature was aiding Verstappen, there was another key factor in his successful rearguard action.

"WITH HIM CATCHING UP ON ME, I WAS READY TO HANG IT OUT THERE UNTIL THE CHEQUERED FLAG"

One-stop plan was still on when Sainz first pitted for hard tyres

TEE/MOTORSPORT IMAGES

Leclerc passes Gasly in what was a sometimes frustrating rise up the order

"It was the traction out of the Turn 10 [hairpin] that was vital," reflected Horner, after Verstappen had come home to win by 0.993s – his gap boosted by Sainz locking his right-front at the hairpin on the final lap and dropping slightly back. "But Max could never break the magic second."

Verstappen's sixth win of 2022 gives him a 46-point lead at the head of the standings. That is over Perez, with Leclerc a further three back. The Monegasque Ferrari star's deficit could have been even more had it not been for his drive up the order following the decision to introduce a totally fresh engine for this race, which Binotto said was a call taken "very soon after Baku".

Although a fifth-place finish is not to be sniffed at given Leclerc had started down in 19th, Ferrari's lead driver in the championship endured a frustrating race well behind his usual rivals.

Sources have suggested that Ferrari opted to fit what was its only newly updated rear wing to Leclerc's car to give him an even better chance of overtaking the cars ahead of him on the grid thanks to its additional drag-reducing profile compared to the wing Ferrari had first introduced in Miami (it also worked with a new beam wing further down Leclerc's rear end here). But even that didn't make life easy for him as he started his march on the pack, aided by getting Nicholas Latifi around the outside at the first chicane on the opening tour.

Leclerc then successively passed Pierre Gasly and Lance Stroll over the next two laps, but by the time of the Perez VSC he had only reached 13th, something of a surprise given Alonso had warned after qualifying that Ferrari's proven 2022 pace advantage over all rivals bar Red Bull might be enough to get Leclerc back to fourth come the race's conclusion. "It was just everyone had DRS so I couldn't do anything," Leclerc later explained of his stymied progress.

After taking three laps to pass Lando Norris, Leclerc then chased Valtteri Bottas closely for a further eight tours, during which Zhou Guanyu pitted out of his way with a Schumacher VSC stop that Leclerc couldn't also take because he'd gone on the alternative strategy of starting on the hard tyre. After finally clearing Bottas with a delightful late-on-the-brakes, outside-line attack into the final chicane on lap »

QUALIFYING

SUTTON/MOTORSPORT IMAGES

"Fernando is getting a little bit old, but he's still very fast!" Max Verstappen gave Fernando Alonso quite the tongue-in-cheek welcome back to his first post-qualifying Formula 1 press conference in a decade. The Alpine driver was one of two main stars of the wet-then-drying session, the other being the Dutchman.

After Verstappen had led the way throughout the dry practice sessions on Friday, where Alonso looked rapid in third and fifth, their fortunes had rather diverged in FP3. Verstappen spun off at the opening corners late on while Alonso ended up on top. But the world champion seized control of qualifying.

With steady drizzle in the run-up, full wets were the way to go throughout Q1. But with the cars blasting the water away from the racing line – other than the pools collecting on the apexes of Turns 1 and 2 and around the rise leading away from the hairpin – they were split on choosing between that compound and the intermediates at the start of Q2. Then Sergio Perez buried his Red Bull's nose in the Turn 3 barriers after catching the left-front flatspot he'd picked up in a brief off at the hairpin on the previous tour as he fought to build the critical tyre temperature, and the red flags flew. After that, everyone resumed on inters.

Verstappen led the way as the times tumbled from 1m38s at the start of Q1 to his eventual pole time of 1m21.299s. The cars were fuelled to run throughout, other than the shootout runners pitting for fresh inters for the final Q3 runs (where George Russell tried slicks in a move that badly backfired with his Turn 2 spin).

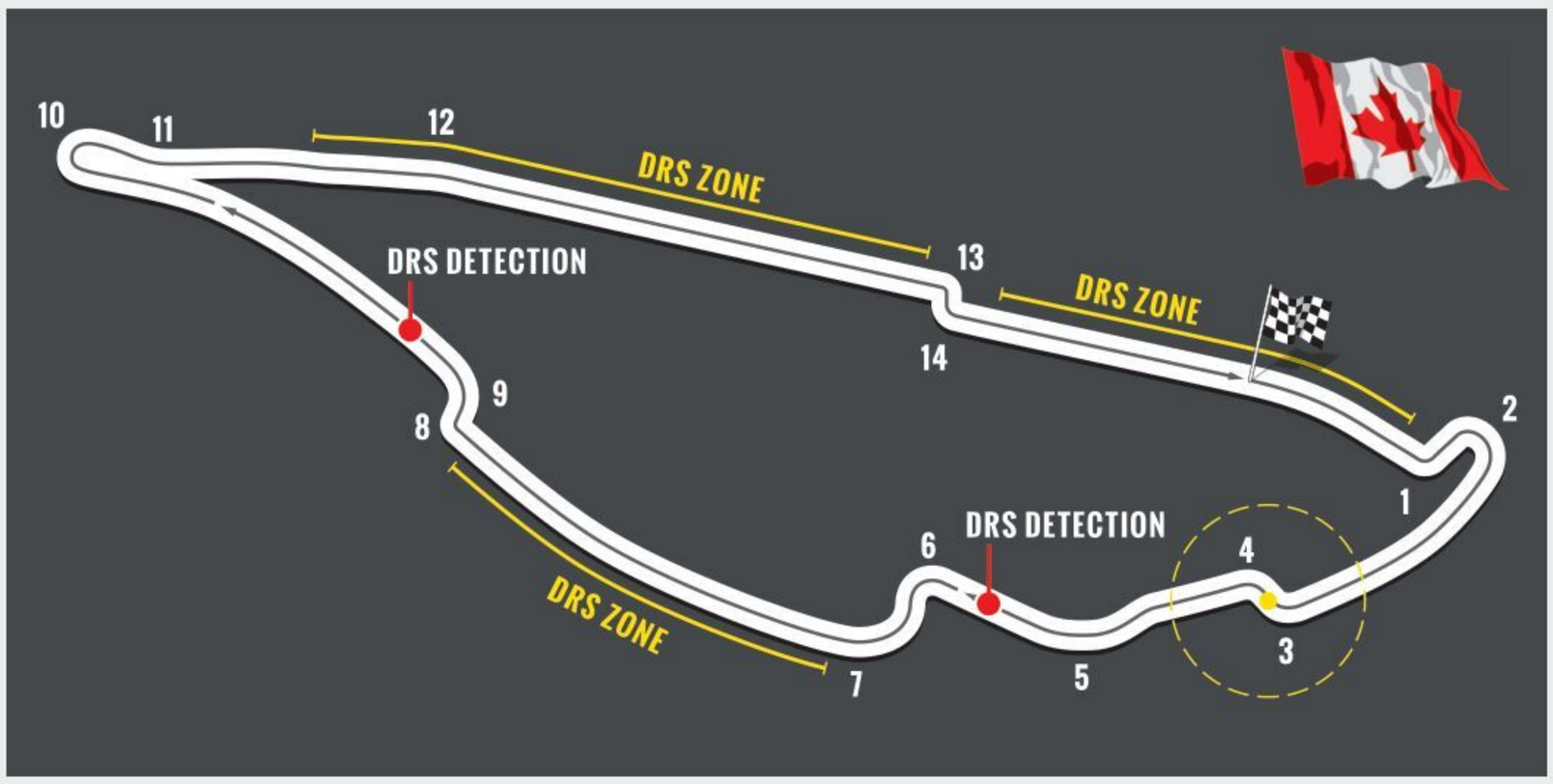
"TO MANAGE YOUR INTER OVER A LAP WAS QUITE A HANDFUL. YOU JUST TRY NOT TO KILL THE FRONT TYRES"

"To manage your inter over a lap was quite a handful," said Verstappen. "You just try to not kill the front tyres in the beginning of the lap and make sure that towards the end you still have that little edge on the front to make sure that the car turns."

There was a threat to his supremacy from Ferrari's Carlos Sainz, who completed the second sector on his final Q3 lap running just 0.07 seconds adrift of Verstappen's combined time up ahead. But "sending it" hard over the kerbs at the final corner, incorrectly assuming "I'm probably not in pole [contention]", meant his car wildly broke traction on the exit and he came home a massive 0.797s behind.

Into this gap surged Alonso. In FP3 he'd been braking later and wider than the rest into Turns 3/4 as he used all the confidence of "racing here 16 or 17 years" to gain time. Alonso "was all in" there on his final lap, but his kerb assault at the final chicane paid off compared to his compatriot, which resulted in his first front row start since the 2012 German GP.

TRACKSIDE VIEW



Friday 17 June 2022 is the day when Autosport, briefly, becomes a wildlife journal. We're on the inside of the Turns 3 and 4 complex – the narrow, fast right/left chicane early in the Circuit Gilles Villeneuve layout.

We've ventured here to see some very specific beasts – the 2022 Formula 1 machines in one of the nomadic natural habitats, but one that's still quite far from the comfort zone offered by, say, smooth Barcelona or Silverstone. But they're not the only creatures capturing our attention…

For the start of the one-hour session, this is focused on the Turn 3 right and its hefty inside kerb. For the opening laps, the pack give it a wide berth before gradually getting ever-more confident to climb on top in a bid to find lap time. It comes with considerable risk. Charles Leclerc demonstrates this well after 10 minutes, his Ferrari getting airborne for a fraction and moving sideways before the landing car compresses its tyres and they bite the surface, snapping the nose right. It's a visceral display and each time it occurs – the Alpines of Esteban Ocon and Fernando Alonso are soon doing it too – the drivers' heads jolt dramatically.

But it's the health of a much smaller creature that's soon our chief concern. Just past the 20-minute mark, a groundhog crawls out from the wall inside Turn 3 and ventures towards the apex. It's alarming given that Lance Stroll's Aston Martin is soon approaching, but help is on hand – Montreal intervention marshal Ryan and his colleagues across the track blow whistles to try to discourage the critter from crossing, while putting out a yellow flag to warn the drivers. It works – the marmot heads back under the wall.

"IT'S TSUNODA'S FIRST VISIT TO THIS TRACK AND HE DOESN'T SEEM FAZED BY ITS CHALLENGE"

Relieved, we turn right to focus on the Turn 4 exit. Again, if the drivers take too much kerb, they're spat out wide towards potential disaster, with the wall on the outside so close. Max Verstappen's Red Bull isn't bothered by being skipped out wide, but it's Yuki Tsunoda who gets closer than any driver, time and again, to the wall. It's his first visit to this track and he doesn't seem fazed by its famous challenge, even when his adventures come with a lurid oversteer snap from riding so far along the exit kerbs.

As the final minutes approach, another groundhog breaks cover – straight across the road through Turn 4. Fortunately, it's during a brief lull and the creature, having squeezed underneath the wall, walks behind Autosport's feet and back into the undergrowth. It's a stressful business, this nature gazing. Thank goodness Kevin Magnussen's final-minute slide – he hits the marbles now littering the line a long way down the Turn 4 exit kerbs and snaps left – is there to distract us…

ALEX KALINAUCKAS

Never mind what Aston Martin's up to, is the track clear of any stray marmots?

Verstappen and Sainz were separated by 0.993s at the flag

ROSE/GETTY IMAGES/RED BULL CONTENT POOL

21, Leclerc homed in on Esteban Ocon's Alpine, but here he got firmly stuck. "I had quite a big problem of traction [at this point]," said Leclerc. "But that was only because Esteban had new tyres and so out of Turn 10, that's where you need the tyres and he had much more grip than I did, so I struggled to follow him there and that was very frustrating."

On lap 28, Alonso finally stopped for the first time and was running behind Leclerc, the Alpine's race heavily compromised by an engine air leak, which had started eight laps earlier, robbed the car of straightline speed and sent its engine temperatures rocketing. Alonso nevertheless used his fresh hard tyres to close up to Leclerc and surround him with blue, a situation Ferrari ended by finally bringing its driver in at the end of lap 41. But here, Leclerc endured more pain, because a slow left-rear change meant his service took 5.3s. When he rejoined the action, he came out behind another DRS train featuring Stroll, Zhou, Tsunoda and Ricciardo.

"I got back behind four cars again with the DRS train and I had to be a bit more aggressive after that to come back," he said of taking six laps to clear this gaggle and reach where Ferrari had envisaged he'd have been with a smooth stop.

When Bottas took his only pitstop of the race under the safety car, that meant Leclerc was then the one threatening Alonso for the final chase to the flag, the Spaniard and Ocon up ahead running the new medium tyres they'd both taken on when the safety car was out.

On the fourth lap after the restart, Leclerc dived by Alonso at the hairpin. It was a move he successfully repeated on Ocon two laps later, but only after an attempt on the outside line at the final chicane on the previous tour had gone awry, Leclerc scampering across the runoff and temporarily losing the fifth place.

Although he closed a little on George Russell, dropped by team-mate Lewis Hamilton after the restart, the Ferrari driver ran out of laps to make any further progress. "Considering all of this, P5 was the best," Leclerc concluded. "[Without the slow pitstop] it would have changed quite a bit. I think the thing about the middle stint [chasing Ocon], there was nothing we could have done better there, it was just the situation we found ourselves in. Obviously, the pitstop cost us quite a bit."

Following Leclerc's Baku retirement, the additional result of dealing with the fallout of that engine failure means he dropped another 15 points to Verstappen in Canada. But he insists the gap "motivates me" with 13 races remaining.

"I know the pace is in the car," said Leclerc. "I'm not worried, I'm just extremely motivated to finally have a clean weekend and show that we are here and we are strong. So yeah, at Silverstone [next time out] hopefully we can do that."

"THERE WAS NOTHING WE COULD HAVE DONE BETTER, IT WAS JUST THE SITUATION WE FOUND OURSELVES IN"

MOTORSPORT IMAGES

Hamilton happy to score his first podium since Bahrain

NEXT F1 REPORT

BRITISH GRAND PRIX
7 JULY ISSUE

MERCEDES BUOYED BY CANADIAN RACE PACE

Lewis Hamilton was "overwhelmed" and "ecstatic" as he headed a Mercedes 3-4 in Canada, his day helped by an opportunistic pitstop during the first virtual safety car to pile the pressure on front-row starter Fernando Alonso.

After toils in 2022 working around experimental car set-up to better troubleshoot the W13, Hamilton nailed fourth in a slippery qualifying and then came away unscathed from a first-lap brush with Kevin Magnussen's Haas. After ditching his medium tyres for the racy hards when Sergio Perez retired and brought out the VSC, Hamilton was left to chase after the Alpine and dispatched his former McLaren team-mate with DRS on lap 23 of 70.

George Russell's Q3 gamble on slicks caused him to nose into the wall and start in eighth. But he soon cleared both Haases and Esteban Ocon before pitting during the second VSC interlude. That cheaper stop enabled him to jump Alonso when the Spaniard finally pitted in normal conditions.

Mercedes trackside engineering director Andrew Shovlin said: "Lewis had a very solid drive to the podium. We didn't quite have the pace of Max or Carlos but, most of the time, it felt that we were just missing two or three tenths, which will spur us all on to work to close that gap. George also surprised us with his ability to pick cars off in the first stint."

HONE

SUTTON

Alpine power issue robs Alonso of podium shot

The rapturous reception that Fernando Alonso received from the grandstands when he exited his Alpine after snaring a front-row start in slippery conditions revealed all about the popularity of his result. But, despite the driver's own ambitions, he was unable to attempt a first-lap lunge on polesitter Max Verstappen and his race fell away from there.

Alonso lost out by pitting under green-flag conditions, having narrowly missed the pit entry when the virtual safety car was deployed for the second time to hand his rivals cheaper stops. Carlos Sainz had already gone by when an air leak — materialising around lap 20 — sapped Alonso's power and forced him into "kamikaze" cornering to keep pace, soon being overtaken by Lewis Hamilton.

The slide continued and Alonso eventually crossed the line in seventh, one spot behind Esteban Ocon. He was estimated to have lost a second per lap on the straights. That didn't stop him from offering more radio gold, that he was "100 times" faster than his stablemate, but Alpine opted not to swap its cars. Team boss Otmar Szafnauer said: "I'm all in favour of allowing him to race. But you've got to remember Fernando had a powertrain issue. He had a leak that caused him to not have the straightline speed. And Esteban graciously waited for him so we could have a DRS train, which is the right thing."

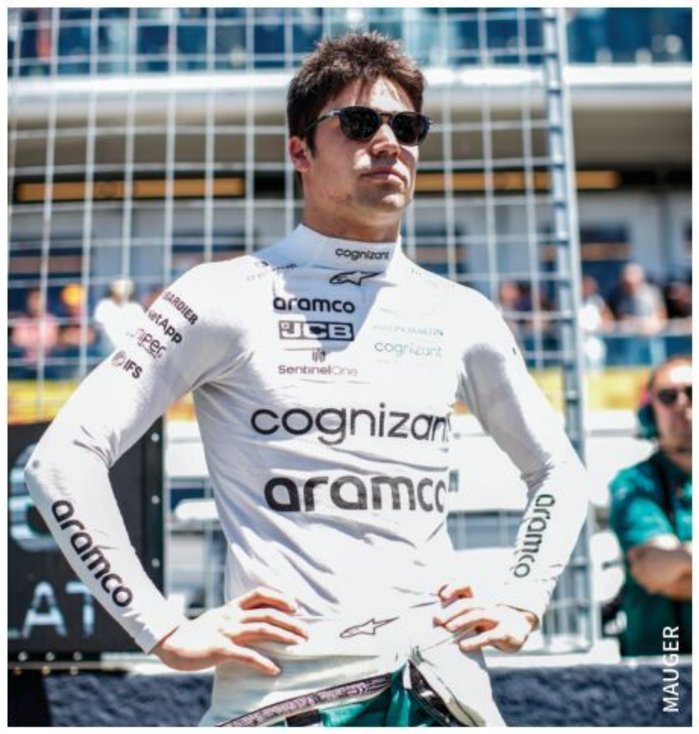
To compound a trying day, Alonso copped a five-second penalty for his last-lap weaving to defend against Valtteri Bottas. With the time added, he eventually ranked ninth.

"The engine, that was the only answer," Alonso said when asked about his tumble down the order. "We had an engine problem on lap 20 where we cut the energy very early on the straights. We tried to fix it, but it didn't work. Luckily, we didn't retire the car and we scored a few points. Until that point, I think we were fighting for the podium."

"YOU GOT TO LET US DRIVE WITH THAT S*** – IT'S NOTHING!"

Kevin Magnussen didn't take kindly to being forced to pit while running in sixth. The FIA showed the Haas driver a black-and-orange flag after his front-wing endplate was bent in an opening-lap glance with Lewis Hamilton at Turn 3.

HONE



STROLL SCORES POINT ON HOME GROUND

Lance Stroll chalked the final point on offer at his home grand prix after driving his Aston Martin from 17th on the grid thanks to a cute strategy call.

The hometown racer was one of only five drivers to elect to start on the hard-compound rubber. He stretched those boots to lap 47, having climbed to eighth before diving into the pits for a used set of mediums.

Then on fresher tyres, Stroll completed a "pretty easy", "nice bonus" DRS pass on Daniel Ricciardo (hurt by the messy McLaren double-stack and being stuck in the DRS train) eight laps from the flag to cement himself inside the top 10.

Aston team-mate Sebastian Vettel, meanwhile, was particularly hurt by stopping so early only for rivals to get 'cheaper' stops thanks to the two virtual safety cars. A final 51-lap stint left him slow, and ensured Stroll was waved by as the German landed 12th place.

Rookie Zhou impresses though luck is with Bottas

Valtteri Bottas pipped rookie team-mate Zhou Guanyu to land a 7-8 result for Alfa Romeo as the team, to go along with Bahrain, notched its second double points finish of the campaign.

The running order had been reversed when Zhou impressed in his debut Q3 appearance, overcoming his F1 inexperience in the wet to start 10th to his team-mate's 11th. Despite the rookie holding his place at the start, passing Daniel Ricciardo and capitalising on the second virtual safety car, Zhou was hurt when held up by the one-stopping Lance Stroll.

That allowed Bottas to enter the frame. The Finn ran well on his starting hard tyre to fight with a recovering Charles Leclerc. He then pounced on the Yuki Tsunoda-induced safety car to make his one stop for mediums, and might have passed Fernando Alonso on track at the end were it not for the Alpine pilot's overzealous defence.

Bottas said: "My race was quite straightforward: I started on the hard tyre and then everything went perfectly for me. The timing of the safety car was ideal, I was like 'happy days!' It felt really good to be out there, and I'm happy for Zhou as well. He had strong pace and he can take a lot of confidence from this weekend."

Q&A

LANDO NORRIS
McLAREN DRIVER

That looked like a hard day. How was it?
I think just everything went wrong today. There are not many positives at all. We just didn't have the pace to race and overtake the people we wanted to race against. It was very difficult to overtake in general and that hurt our pace. There were mistakes from my side, mistakes from the team and we'll just need to step back, refresh, go again and do a much better job in the next one.

What do you put it down to?
Just the car's not good enough. At times it's strong. I was a little bit more optimistic after Friday and thought we could achieve more today. But when I was stuck behind the Williams, they're so fast – probably the quickest in the straights and we're probably the slowest in the straights. Then it's literally impossible to overtake so we can't do anything.

As this puzzling season for the team continues, where does McLaren rank?
I think it's quite simple. It's not anywhere where we want it. And a day like today is probably a good thing. It shows we're just a long way off. We have to keep working very hard to keep trying a lot of different things. Because maybe at times things look great, but it's never really like genuine pace. We're a little bit there on luck sometimes. And a day like today when it's just more simple and you don't have luck on your side, it shows where we're actually at.

Can you explain the slow double-stack pitstop?
I have no idea. We had different tyres, and then no tyres. So, I can't say anything. It's very rough for all of us. I just want a cold bath and an ice cream and just go home.

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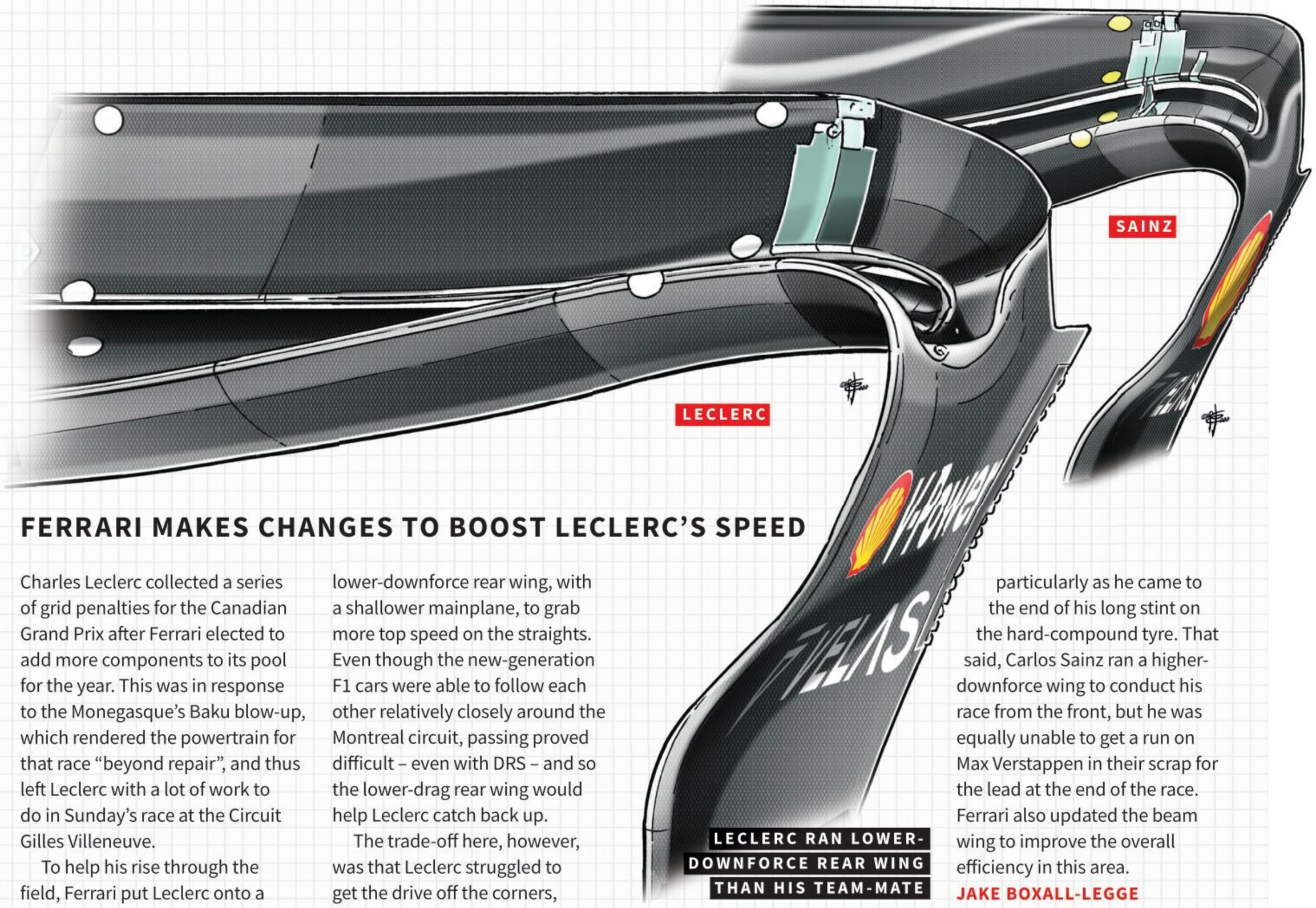


FERRARI MAKES CHANGES TO BOOST LECLERC'S SPEED

Charles Leclerc collected a series of grid penalties for the Canadian Grand Prix after Ferrari elected to add more components to its pool for the year. This was in response to the Monegasque's Baku blow-up, which rendered the powertrain for that race "beyond repair", and thus left Leclerc with a lot of work to do in Sunday's race at the Circuit Gilles Villeneuve.

To help his rise through the field, Ferrari put Leclerc onto a lower-downforce rear wing, with a shallower mainplane, to grab more top speed on the straights. Even though the new-generation F1 cars were able to follow each other relatively closely around the Montreal circuit, passing proved difficult – even with DRS – and so the lower-drag rear wing would help Leclerc catch back up.

The trade-off here, however, was that Leclerc struggled to get the drive off the corners, particularly as he came to the end of his long stint on the hard-compound tyre. That said, Carlos Sainz ran a higher-downforce wing to conduct his race from the front, but he was equally unable to get a run on Max Verstappen in their scrap for the lead at the end of the race. Ferrari also updated the beam wing to improve the overall efficiency in this area.

JAKE BOXALL-LEGGE

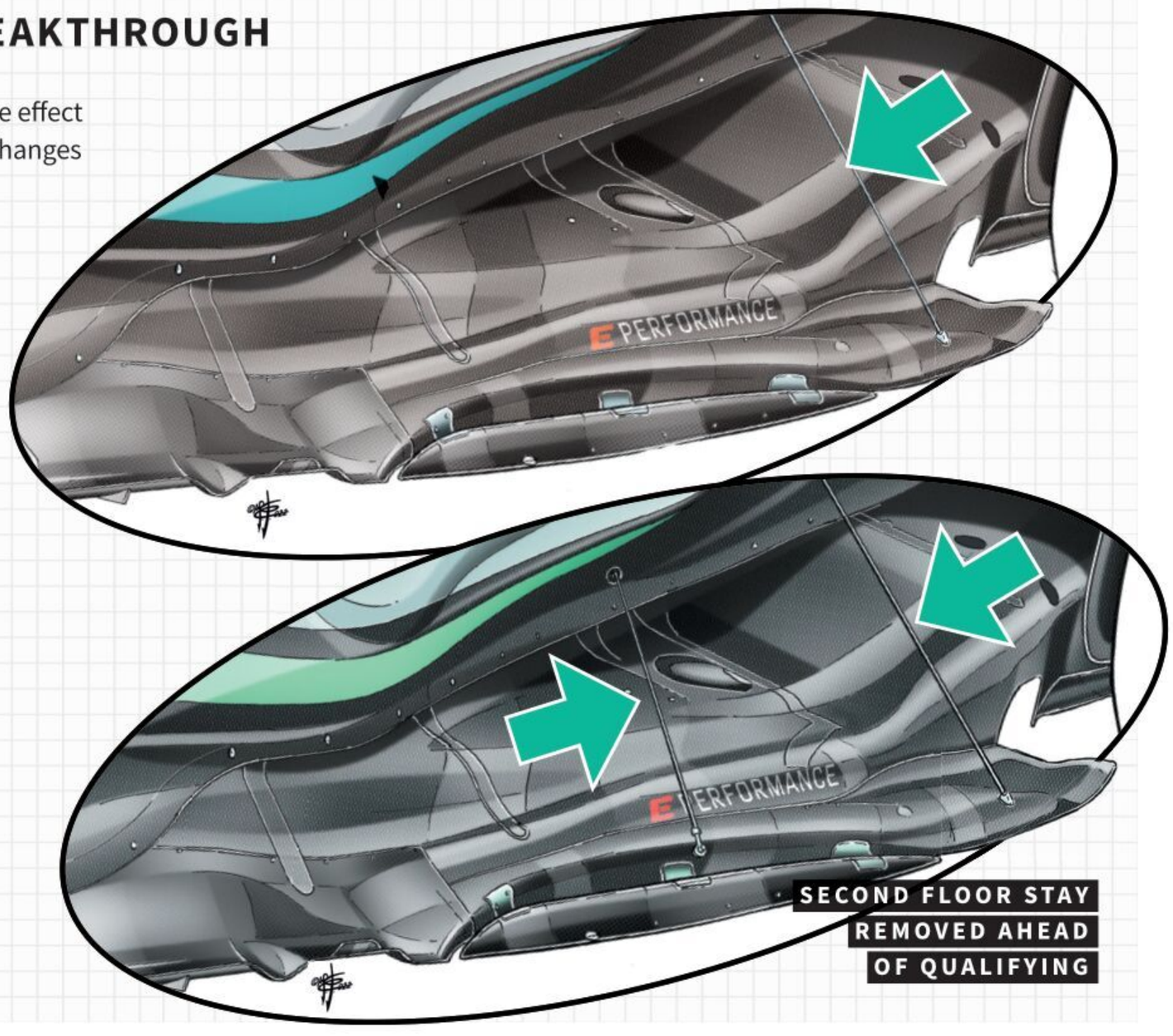
LECLERC RAN LOWER-DOWNFORCE REAR WING THAN HIS TEAM-MATE

MERCEDES STILL CHASING A BREAKTHROUGH

Amid the new FIA technical directive aimed at reducing the effect of bouncing on the drivers, Mercedes threw a number of changes at its floor in practice to try to get more stability with its underbody aero. In first practice, the team ran a conventional floor with a second stay on George Russell's car, and gave Lewis Hamilton a revised version with a large cut-out along the edge to "allow the floor fences to work more efficiently, improving how they shed vorticity" as per the pre-event technical notes. But Hamilton felt that the floor he'd been given didn't work, and it was quickly abandoned in FP2 for a series of set-up experiments, which the seven-time champion felt were a disaster.

But, by understanding what didn't work around the Montreal circuit, Mercedes managed to get Hamilton into a decent window with the troublesome W13 to allow him to grab fourth on the grid, which became third in the race to reward him with his first podium since the Bahrain season opener. To head off any threats of a protest, given that the FIA has yet to implement any rule changes at this juncture, Mercedes removed the second stay from the floor ahead of qualifying and the race to ensure it did not transgress the bounds of legality.

JAKE BOXALL-LEGGE



SECOND FLOOR STAY REMOVED AHEAD OF QUALIFYING

FREE PRACTICE 1

POS	DRIVER	TIME
1	Verstappen	1m15.158s
2	Sainz	1m15.404s
3	Alonso	1m15.531s
4	Perez	1m15.619s
5	Leclerc	1m15.666s
6	Russell	1m15.822s
7	Stroll	1m15.877s
8	Hamilton	1m15.877s
9	Vettel	1m16.041s
10	Ricciardo	1m16.083s
11	Gasly	1m16.165s
12	Norris	1m16.211s
13	Albon	1m16.308s
14	Tsunoda	1m16.322s
15	Ocon	1m16.421s
16	Bottas	1m16.426s
17	Zhou	1m17.152s
18	Schumacher	1m17.223s
19	Latifi	1m17.241s
20	Magnussen	1m17.555s

WEATHER Sunny, air 25-26C track 41C

FREE PRACTICE 2

POS	DRIVER	TIME
1	Verstappen	1m14.127s
2	Leclerc	1m14.208s
3	Sainz	1m14.352s
4	Vettel	1m14.442s
5	Alonso	1m14.543s
6	Gasly	1m14.879s
7	Russell	1m14.971s
8	Norris	1m14.987s
9	Ricciardo	1m15.033s
10	Ocon	1m15.119s
11	Perez	1m15.167s
12	Stroll	1m15.396s
13	Hamilton	1m15.421s
14	Magnussen	1m15.499s
15	Schumacher	1m15.516s
16	Zhou	1m15.526s
17	Tsunoda	1m15.567s
18	Albon	1m16.171s
19	Latifi	1m16.509s
20	Bottas	no time

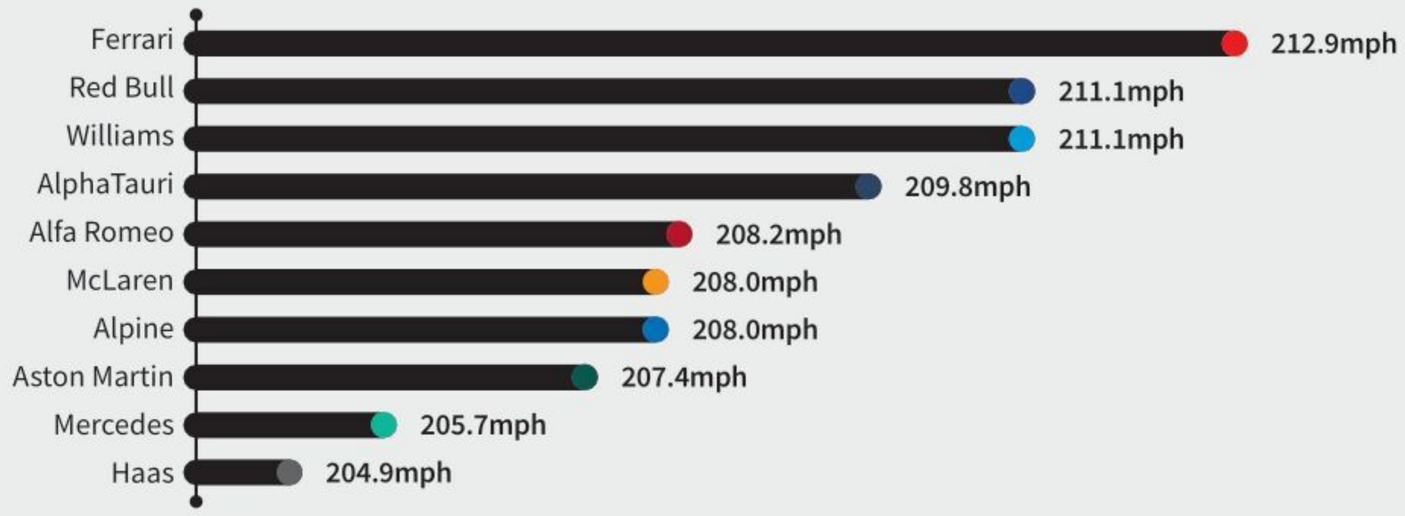
WEATHER Sunny, air 25-26C track 35-41C

FREE PRACTICE 3

POS	DRIVER	TIME
1	Alonso	1m33.836s
2	Gasly	1m33.889s
3	Vettel	1m33.891s
4	Ocon	1m34.003s
5	Ricciardo	1m34.110s
6	Norris	1m34.248s
7	Russell	1m34.259s
8	Perez	1m34.498s
9	Verstappen	1m34.616s
10	Sainz	1m34.778s
11	Bottas	1m35.016s
12	Zhou	1m35.213s
13	Stroll	1m35.531s
14	Magnussen	1m35.643s
15	Hamilton	1m35.692s
16	Albon	1m35.761s
17	Tsunoda	1m36.261s
18	Schumacher	1m37.388s
19	Latifi	1m38.394s
20	Leclerc	no time

WEATHER Wet, air 11C track 16C

SPEED TRAP (RACE)



QUALIFYING 1

POS	DRIVER	TIME
1	Verstappen	1m32.219s
2	Alonso	1m32.277s
3	Sainz	1m32.781s
4	Magnussen	1m32.957s
5	Leclerc	1m33.008s
6	Ocon	1m33.012s
7	Russell	1m33.160s
8	Ricciardo	1m33.636s
9	Bottas	1m33.689s
10	Zhou	1m33.692s
11	Schumacher	1m33.707s
12	Hamilton	1m33.841s
13	Perez	1m33.929s
14	Albon	1m34.047s
15	Norris	1m34.066s
16	Gasly	1m34.492s
17	Vettel	1m34.512s
18	Stroll	1m35.532s
19	Latifi	1m35.660s
20	Tsunoda	1m36.575s

QUALIFYING 2

POS	DRIVER	TIME
1	Verstappen	1m23.746s
2	Alonso	1m24.848s
3	Russell	1m24.950s
4	Sainz	1m25.197s
5	Hamilton	1m25.543s
6	Schumacher	1m25.684s
7	Zhou	1m26.116s
8	Ocon	1m26.135s
9	Magnussen	1m26.254s
10	Ricciardo	1m26.375s
11	Bottas	1m26.788s
12	Albon	1m26.858s
13	Perez	1m33.127s
14	Norris	no time
15	Leclerc	no time

QUALIFYING 3

POS	DRIVER	TIME
1	Verstappen	1m21.299s
2	Alonso	1m21.944s
3	Sainz	1m22.096s
4	Hamilton	1m22.891s
5	Magnussen	1m22.960s
6	Schumacher	1m23.356s
7	Ocon	1m23.529s
8	Russell	1m23.557s
9	Ricciardo	1m23.749s
10	Zhou	1m24.030s

WEATHER Wet, drying, air 12-15C track 17-18C

NEXT RACE
3 JULY
BRITISH GP
Silverstone

SEASON STATS

	DRIVERS' CHAMPIONSHIP	PTS	BEST FINISH	BEST QUAL
1	Verstappen	175	1	1
2	Perez	129	1	1
3	Leclerc	126	1	1
4	Russell	111	3	4
5	Sainz	102	2	2
6	Hamilton	77	3	4
7	Norris	50	3	3
8	Bottas	46	5	5
9	Ocon	39	6	5
10	Alonso	18	7	2
11	Gasly	16	5	6
12	Magnussen	15	5	4
13	Ricciardo	15	6	6
14	Vettel	13	6	9
15	Tsunoda	11	7	8
16	Zhou	5	8	10
17	Albon	3	9	12
18	Stroll	3	10	10
19	Schumacher	0	11	6
20	Hulkenberg	0	12	17
21	Latifi	0	14	18

CONSTRUCTORS' CHAMPIONSHIP

1	Red Bull	304
2	Ferrari	228
3	Mercedes	188
4	McLaren	65
5	Alpine	57
6	Alfa Romeo	51
7	AlphaTauri	27
8	Aston Martin	16
9	Haas	15
10	Williams	3

QUALIFYING BATTLE

Hamilton	4	5	Russell
Verstappen	6	3	Perez
Leclerc	8	0	Sainz
Ricciardo	1	7	Norris
Alonso	5	3	Ocon
Gasly	5	3	Tsunoda
Vettel	6	1	Stroll
Stroll	1	1	Hulkenberg
Latifi	1	7	Albon
Zhou	2	7	Bottas
Magnussen	7	2	Schumacher

Based on Q1/Q2/Q3 sessions, not sprint races.
Events removed when one driver in a team could not record a representative time for reasons outside their control

WINS

Verstappen	6
Leclerc	2
Perez	1

POLE POSITIONS

Leclerc	6
Verstappen	2
Perez	1

FASTEST LAPS

Leclerc	3
Perez	2
Verstappen	2
Norris	1
Sainz	1

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STARTING GRID

RACE RESULTS ROUND 9/22 (70 LAPS – 189.69 MILES)

POS	DRIVER	TEAM	FINISH TIME	LED	TYRES
1	**Max Verstappen** (NLD)	Red Bull	1h36m21.757s	53	**M**n, **H**n, **H**n
2	**Carlos Sainz** (ESP)	Ferrari	+0.993s	17	**M**n, **H**n, **H**n
3	**Lewis Hamilton** (GBR)	Mercedes	+7.006s		**M**n, **H**n, **H**n
4	**George Russell** (GBR)	Mercedes	+12.313s		**M**n, **H**n, **H**n
5	**Charles Leclerc** (MCO)	Ferrari	+15.168s		**H**n, **M**n
6	**Esteban Ocon** (FRA)	Alpine-Renault	+23.890s		**M**n, **H**n, **M**n
7	**Valtteri Bottas** (FIN)	Alfa Romeo-Ferrari	+25.247s		**H**n, **M**n
8	**Zhou Guanyu** (CHN)	Alfa Romeo-Ferrari	+26.952s		**M**n, **H**n, **H**n
9	**Fernando Alonso** (ESP)	Alpine-Renault	+29.945s		**M**n, **H**n, **M**n
10	**Lance Stroll** (CAN)	Aston Martin-Mercedes	+38.222s		**H**n, **M**u
11	**Daniel Ricciardo** (AUS)	McLaren-Mercedes	+43.047s		**M**n, **H**n, **H**n
12	**Sebastian Vettel** (DEU)	Aston Martin-Mercedes	+44.245s		**M**u, **H**u, **H**u
13	**Alexander Albon** (THA)	Williams-Mercedes	+44.893s		**M**n, **H**n, **H**n
14	**Pierre Gasly** (FRA)	AlphaTauri-Red Bull	+45.183s		**M**n, **H**n, **H**n
15	**Lando Norris** (GBR)	McLaren-Mercedes	+52.145s		**H**n, **H**n, **M**n
16	**Nicholas Latifi** (CAN)	Williams-Mercedes	+59.978s		**M**n, **H**n, **H**n
17	**Kevin Magnussen** (DNK)	Haas-Ferrari	+1m08.180s		**M**n, **H**n
R	**Yuki Tsunoda** (JPN)	AlphaTauri-Red Bull	47 laps-accident		**M**n, **H**n
R	**Mick Schumacher** (DEU)	Haas-Ferrari	18 laps-hydraulics		**M**n
R	**Sergio Perez** (MEX)	Red Bull	7 laps-hydraulics		**H**n

WEATHER Sunny, air 20-22C track 41C

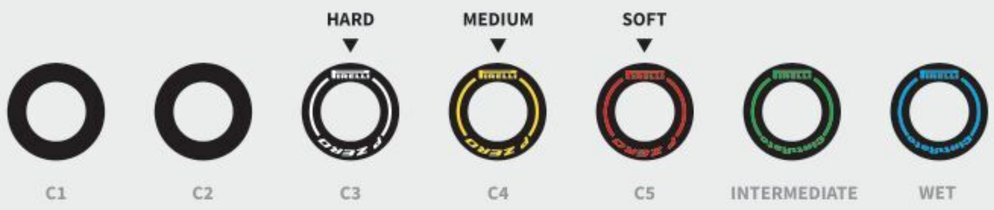
WINNER'S AVERAGE SPEED 118.107mph **FASTEST LAP AVERAGE SPEED** 128.784mph

FASTEST LAPS

POS	DRIVER	TIME	GAP	LAP
1	**Sainz**	1m15.749s	-	63
2	**Verstappen**	1m15.839s	+0.090s	64
3	**Leclerc**	1m15.901s	+0.152s	62
4	**Hamilton**	1m16.167s	+0.418s	69
5	**Russell**	1m16.418s	+0.669s	63
6	**Zhou**	1m16.578s	+0.829s	63
7	**Bottas**	1m16.927s	+1.178s	60
8	**Alonso**	1m17.010s	+1.261s	64
9	**Ocon**	1m17.110s	+1.361s	62
10	**Stroll**	1m17.421s	+1.672s	64
11	**Norris**	1m17.495s	+1.746s	63
12	**Gasly**	1m17.810s	+2.061s	60
13	**Ricciardo**	1m17.932s	+2.183s	59
14	**Albon**	1m17.951s	+2.202s	59
15	**Vettel**	1m17.956s	+2.207s	63
16	**Magnussen**	1m18.046s	+2.297s	11
17	**Tsunoda**	1m18.309s	+2.560s	15
18	**Latifi**	1m18.540s	+2.791s	61
19	**Perez**	1m18.844s	+3.095s	7
20	**Schumacher**	1m18.967s	+3.218s	13

TYRES

KEY: **H** - Hard **M** - Medium **S** - Soft **I** - Intermediate **W** - Wet n - New set u - Used set



RACE BRIEFING

GRID PENALTIES

LECLERC required to start from the back of the grid for additional power unit elements used and 10-place penalty for additional power unit element used

TSUNODA required to start from the back of the grid for additional power unit elements used

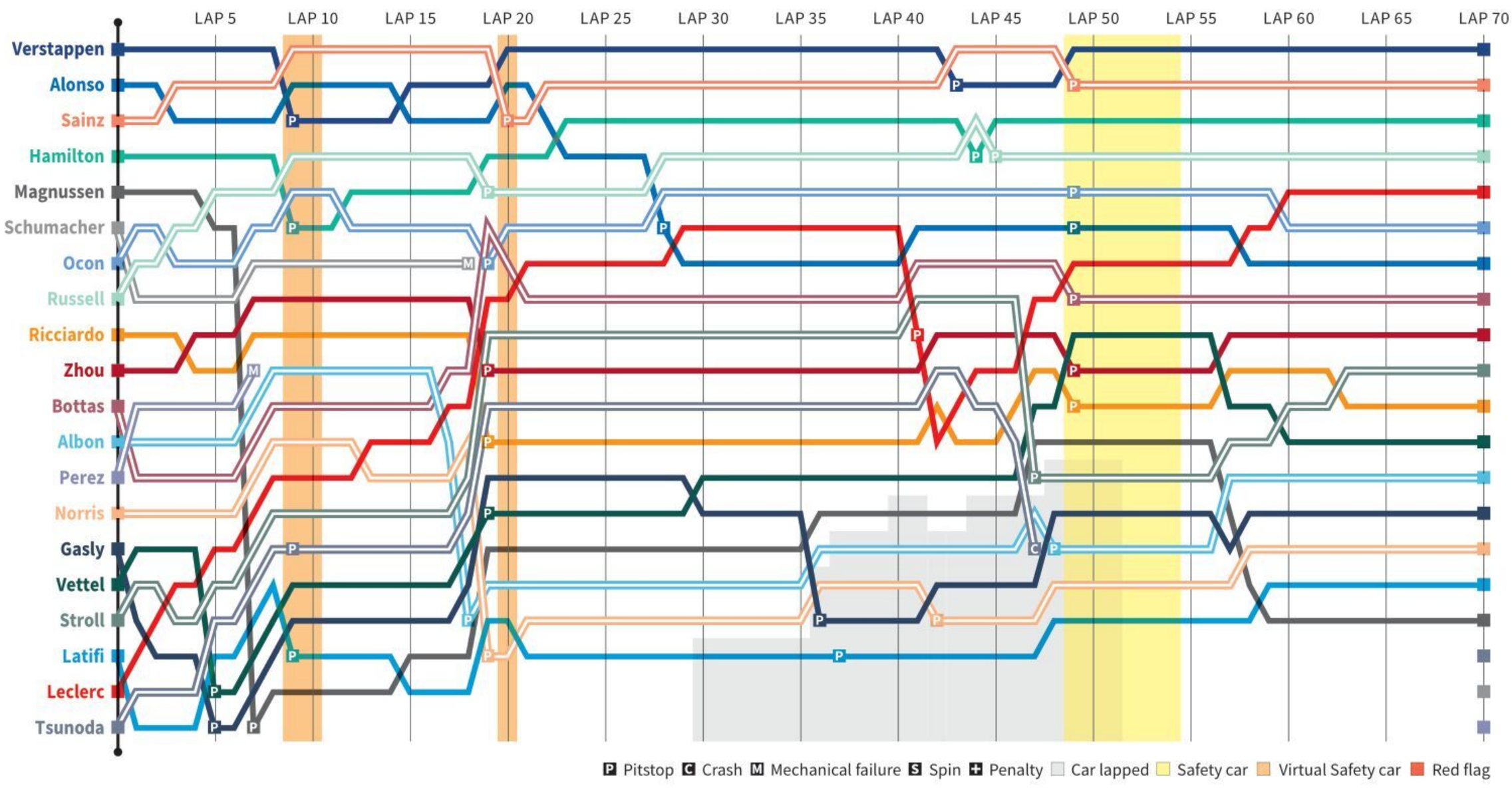
RACE PENALTIES

NORRIS Five-second penalty for speeding in the pitlane

ALONSO 5s penalty and one licence point for more than one change of direction to defend position

STAT
11
Sainz now has 11 F1 podiums without a win, matching ex-Ferrari driver Chris Amon

LAP CHART What happened, when



VERSTAPPEN TOPS THE LOT FOR POLE AND RACE VICTORY

It's full marks for the reigning world champion, star turns from Hamilton, Sainz and Zhou are rewarded, and Tsunoda takes the wooden spoon

ALEX KALINAUCKAS

MERCEDES

LEWIS HAMILTON

Started **4th** — Result **3rd**

9 No maximum might seem harsh, but qualifying behind a slower Alpine package costs him. Brilliant in the race, executing two-stopper well. Briefly had hopes of racing the two leaders, but in the end was left to pull clear of Russell to secure a second podium place of 2022.

GEORGE RUSSELL

Started **8th** — Result **4th**

8 Call to go to slicks was impressively bold, but goes down as a mistake that cost a shot at the front row. Made incisive passes on the Haases and Ocon during the race's early stages, then displayed very strong pace through the middle phase. Also dropped by Hamilton after the safety car.

RED BULL

MAX VERSTAPPEN

Started **1st** — Result **1st**

10 A struggle with graining medium tyres and a lack of race pace against Sainz isn't enough to cost the maximum, because he still took top qualifying and race results with aplomb. Was commandingly good in the wet on Saturday, and the way he fended off Sainz's pressure was just masterful.

SERGIO PEREZ

Started **13th** — Result **R**

6 Although he made a positive start up the order before his gearbox failed, his score must be low compared to Verstappen because of his costly Turn 3 Q2 crash. There, snatching his left-front on a flatspot he'd picked up in an off the lap before left him a passenger.

FERRARI

CHARLES LECLERC

Started **19th** – Result **5th**

8 This score is really all about his race performance. Forced to be patient in early DRS train, he didn't think he could have done anything else pre-pitstop. Slow service cost him time, meaning extra passes that ultimately meant rescuing third with his late pace was just beyond reachable.

CARLOS SAINZ

Started **3rd** — Result **2nd**

9 Only real mistake was assuming that Verstappen was unreachable after two sectors on his final Q3 lap and so flung his car at the last chicane kerbs, losing a grid spot to Alonso. Showed strong race pace. Did all he could to force Verstappen into a late mistake but couldn't mount a move for the win.

McLAREN

DANIEL RICCIARDO

Started **9th** — Result **11th**

6 Did well to reach Q3. His score comes down because of his lack of pace in the race, which he put down to McLaren not having "any strengths", particularly in the DRS trains. Enjoyed his chicane passes on Tsunoda and Vettel. Long VSC 2 pitstop didn't help matters.

LANDO NORRIS

Started **14th** Result **15th**

5 Isn't scored down compared to Ricciardo over Q2 exit because his engine problem prevented him from having any shot at progressing. Like Ricciardo, struggled for pace when running in DRS trains. At least he defied Leclerc for a while. Marked down here for pitlane speeding.

ALPINE

FERNANDO ALONSO

Started **2nd** — Result **9th**

8 Refused to get carried away after best F1 qualifying for a decade. Couldn't attack Verstappen at Turn 1 and was then powerless to resist Sainz. Passing the pits as Schumacher VSC was called rather screwed his remaining hopes. Engine air leak from lap 20 did the rest.

ESTEBAN OCON

Started **7th** — Result **6th**

7 Couldn't match team-mate's pace in the wet in qualifying. In the race, cannily called on the FIA to stop Magnussen. Schumacher VSC stop helped him jump Alonso, and later defence against Leclerc was solid. Couldn't stop the Ferrari passing after the safety car.

ALPHATAURI

PIERRE GASLY

Started **15th** - Result **14th**

5 Having to try to escape Q1 with his brakes working properly only intermittently means his score isn't lower, despite qualifying just 16th. His race was also made harder by having to lift and coast from the opening lap, but sliding around too much damaged his tyres in each stint.

YUKI TSUNODA

Started **20th** — Result **R**

3 Never a factor in qualifying with his engine-change penalty. In the race, quickly dispatched Latifi and then gained with Perez VSC stop for hard tyres. Had just been passed by Ricciardo when he stopped again, and it was his embarrassing pit-exit crash that takes his score so low.

ASTON MARTIN

SEBASTIAN VETTEL

Started **16th** - Result **12th**

6 Aston's Q1 struggles meant he fell from third in the similarly wet FP3 session to qualifying 17th. Being first driver stopping in the race became disastrous with two VSCs not long after. His 51-lap final stint was a challenge, and so could do little to stop Zhou passing after the restart.

LANCE STROLL

Started **17th** - Result **10th**

8 Tyre pressures too high for drying track put Q1 balance off, but lost out to Vettel. Managed tyre life on long first stint on the contra-strategy nicely even while holding off early stoppers. Was waved past Vettel on late-race charge that featured a DRS pass on Ricciardo for 10th.

WILLIAMS

NICHOLAS LATIFI

Started **18th** - Result **16th**

5 Lacked confidence while braking on the full wet tyres in Q1. In the race he shouldn't have let Leclerc get by on the outside at the first chicane on lap one, and thereafter just lacked race pace. Slow second stop for fresh hards with problem reattaching the right front was unlucky.

ALEX ALBON

Started **12th** - Result **13th**

8 Recovered from Turn 6 barrier prang to record best qualifying performance for Williams. Lost ground to Perez with slower start, then held his own ahead of Bottas before being undone stopping just before VSC 2. Chased hard and was very close with Vettel and Riccardo at the end.

ALFA ROMEO

ZHOU GUANYU

Started **10th** — Result **8th**

9 An excellent weekend. Reached his first Q3 and enjoyed himself in conditions where he remains inexperienced, then had a great race. Held his place at the start, then shot past Ricciardo with DRS. Getting stuck behind the yet-to-stop Stroll and his ageing hards costs the maximum.

VALTTERI BOTTAS

Started **11th** — Result **7th**

8 Put Q2 exit down to taking the flag earlier than most, with the big track evolution factor helping others. Got a black/white warning flag for lap one rejoining gaffe, but from there lapped strongly on contra hard-medium one-stopper. Safety car pitstop sealed points rise.

HAAS

KEVIN MAGNUSSEN

Started **5th** — Result **17th**

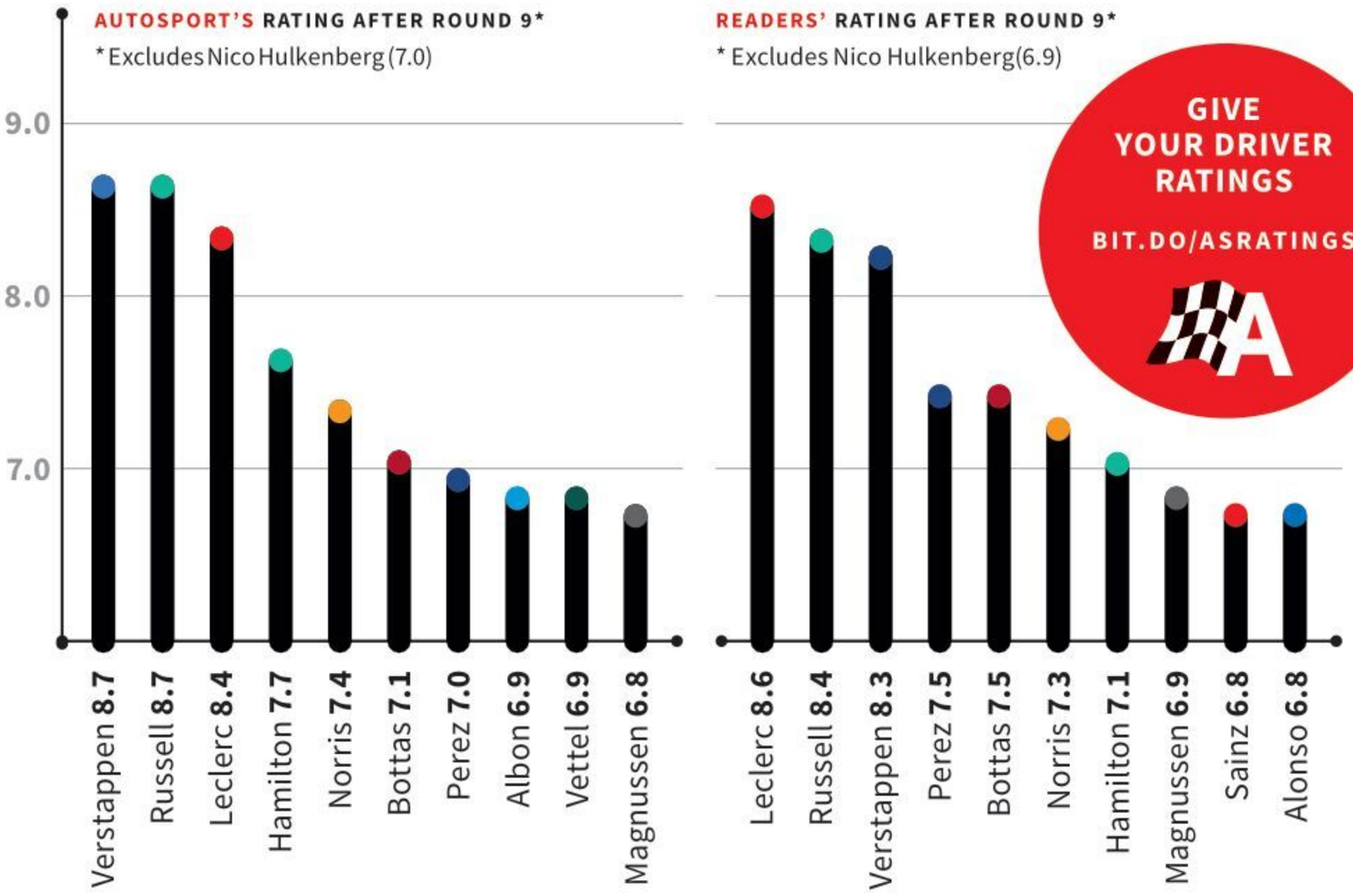
7 Mighty in qualifying, just 0.069s back from Hamilton. Ambitious lap one attack on him led to the wing damage the FIA made Haas change, which costs him here even though it was a very minor misjudgement. The VSC stops helping others prevented any fightback.

MICK SCHUMACHER

Started **6th** — Result **R**

7 Best F1 qualifying in tricky conditions and under considerable pressure considering recent run of errors. At the start he lost positions being outdragged by Ocon to Turn 3 and getting rather mugged by Russell at the hairpin, which means he can't score higher.

TOP 10 AVERAGE RATINGS



Rast (33) edged out Audi stablemate Muller in the opening race

Rast back on top, nice work Feller

DTM
IMOLA (ITA)
18-19 JUNE
ROUND 3/8

An Abt Audi led home a Team Rosberg Audi in both DTM races at Imola, but the results were achieved by different drivers in wholly different circumstances. Three-time DTM champion Rene Rast secured the first victory of his comeback season by holding off Nico Muller in the opener, then Ricardo Feller broke his duck by beating Dev Gore in a straight fight for the win that nobody could have predicted after they were split by 20 places in qualifying.

Rast beat Muller to pole for Saturday's opening race, after which the Swiss surmised that "the only chances we had to make him fight for that win was at the start and the pitstop". On both occasions, Rast had him covered. The German looked like he'd hardly even broken sweat in fierce heat and won by 3.8 seconds, although admitted that it had been "a bit unexpected" since pre-season he "didn't really expect to fight for wins or for podiums. I got proven wrong."

Anybody who had anticipated that Saturday was a write-off for Mirko Bortolotti was also proven wrong, as the Lamborghini driver stormed to third from 16th on the grid. Docked 10 places from qualifying due to his Grasser team's tyre barcode mix-up in practice, he opted for a contra-strategy on a track where overtaking is preciously difficult. Bortolotti saved his tyres early on, then unleashed his pace in clear air once those ahead pitted – Rast had begun the pit phase at the earliest opportunity on lap six of 33 to stave off an undercut – then had a pace comparable to the stoppers.

Helped by ballast-laden championship leader Sheldon van der Linde holding up a gaggle of cars, Bortolotti rejoined eighth after his lap-22 stop and quickly put his brand-new tyres to use by passing Marco Wittmann. Feller retired to the pits with a puncture, while Clemens Schmid, back on form after a Turn 1 testing crash at Lausitzring sapped his confidence, didn't make life too difficult for his team-mate. Kelvin van der Linde was shrugged aside too and, despite pinching a riled Bortolotti towards the grass exiting Tosa, Thomas Preining was equally powerless to resist.

"I never expected to be able to fight for a podium today," Bortolotti said. Few had cause to doubt that. Preining was disappointed to finish fourth after losing a maiden podium in his Team Bernhard Porsche, but acknowledged "this was definitely the best we could have done today".

A Balance of Performance change prior to Sunday qualifying gave Audi and Lamborghini an unwanted 25kg, with Rast carrying a further 25kg in success weight. It proved academic when he qualified eighth, then retired with a tyre blowout on lap four.

Feller expertly navigated the weight and beat Felipe Fraga to pole, but the Ferrari pounced when Feller dropped his right-rear tyre into the gravel exiting Rivazza on the first lap. The Swiss got another chance to attack, after Rolf Ineichen's defective brakes caused him to plough into a luckless Preining and the safety car appeared.

This also allowed Gore to enter the picture, after a puncture on lap one dropped him to last. He slowed just enough to make sure the pit window was open – "The radio was going to melt because of how many

Bortolotti scored home podium for himself and Lamborghini

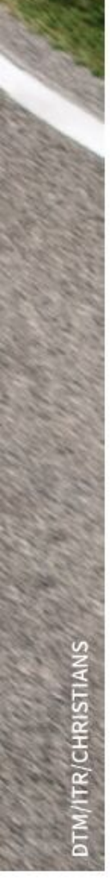
POWERED BY motorsport STATS

HOCH ZWEI/JUERGEN TAP

Feller hot-foots it from Rivazza en route to his maiden DTM victory

HOCH ZWEI/JUERGEN TAP

It was the first win of Rast's DTM comeback


DTM/ITR/CHRISTIANS

people were talking!" – and managed to come in a lap before everybody else, then cycled to the front of the stoppers once the leaders followed suit. Arjun Maini had tried to do likewise, but his HRT Mercedes team boss Uli Fritz reckoned the Indian "was three seconds short".

Fraga and Feller took the restart fifth and sixth while a yet-to-stop Nick Cassidy and Dennis Olsen enjoyed a short-lived spell at the front ahead of the similarly doomed Maini, and Gore. Feller jumped Fraga on the run to Tamburello, before the Brazilian cut his right-rear tyre in side-to-side contact with Lucas Auer.

Initially Feller believed that Gore was yet to pit, but refocused when he was informed otherwise. The rookie delivered the goods on lap 14 approaching Piratella and held his nerve to win by 1.9s. Behind, Auer's Winward Mercedes couldn't challenge Gore, who comfortably surpassed his previous best finish of 12th. The American reckoned Auer "did us a favour" by keeping a pacey Wittmann behind until the final tour, when he succumbed to the Walkenhorst BMW into Villeneuve after "a shitty mistake".

But Auer just held off Schubert BMW racer Sheldon van der Linde for fourth, while the South African's early title rival Bortolotti had to settle for 10th.

JAMES NEWBOLD

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RESULTS ROUND 3/8, IMOLA (ITA), 18-19 JUNE RACE 1 (33 LAPS – 100.660 MILES)

POS	DRIVER	TEAM / CAR	TIME
1	**Rene Rast** (DEU)	Abt Sportsline / Audi R8 LMS Evo II	57m01.108s
2	**Nico Muller** (CHE)	Team Rosberg / Audi R8 LMS Evo II	+3.809s
3	**Mirko Bortolotti** (ITA)	GRT Grasser Racing Team / Lamborghini Huracan GT3 Evo	+7.936s
4	**Thomas Preining** (AUT)	Team Bernhard / Porsche 911 GT3-R	+9.323s
5	**Kelvin van der Linde** (ZAF)	Abt Sportsline / Audi R8 LMS Evo II	+10.605s
6	**Clemens Schmid** (AUT)	GRT Grasser Racing Team / Lamborghini Huracan GT3 Evo	+13.289s
7	**Marco Wittmann** (DEU)	Walkenhorst Motorsport / BMW M4 GT3	+17.853s
8	**Sheldon van der Linde** (ZAF)	Schubert Motorsport / BMW M4 GT3	+32.103s
9	**Dennis Olsen** (NOR)	SSR Performance / Porsche 911 GT3-R	+32.733s
10	**Maro Engel** (DEU)	GruppeM Racing / Mercedes-AMG GT3 Evo	+33.394s
11	**Luca Stolz** (DEU)	Team HRT / Mercedes-AMG GT3 Evo	+33.858s
12	**Philipp Eng** (AUT)	Schubert Motorsport / BMW M4 GT3	+34.342s
13	**Laurens Vanthoor** (BEL)	SSR Performance / Porsche 911 GT3-R	+34.899s
14	**Nick Cassidy** (NZL)	AF Corse / Ferrari 488 GT3 Evo	+35.459s
15	**Rolf Ineichen** (CHE)	GRT Grasser Racing Team / Lamborghini Huracan GT3 Evo	+37.410s
16	**Arjun Maini** (IND)	Team HRT / Mercedes-AMG GT3 Evo	+38.061s
17	**Marius Zug** (DEU)	Attempto Racing / Audi R8 LMS Evo II	+39.428s
18	**Maximilian Buhk** (DEU)	Mucke Motorsport / Mercedes-AMG GT3 Evo	+40.088s
19	**Mikael Grenier** (CAN)	GruppeM Racing / Mercedes-AMG GT3 Evo	+45.745s
20	**Maximilian Gotz** (DEU)	Winward Racing / Mercedes-AMG GT3 Evo	+46.033s
21	**David Schumacher** (DEU)	Winward Racing / Mercedes-AMG GT3 Evo	+46.657s
22	**Alessio Deledda** (ITA)	GRT Grasser Racing Team / Lamborghini Huracan GT3 Evo	+1m12.094s
R	**Lucas Auer** (AUT)	Winward Racing / Mercedes-AMG GT3 Evo	26 laps-brakes
R	**Ricardo Feller** (CHE)	Abt Sportsline / Audi R8 LMS Evo II	24 laps-puncture
R	**Esteban Muth** (BEL)	Walkenhorst Motorsport / BMW M4 GT3	23 laps-mechanical
R	**Felipe Fraga** (BRA)	AF Corse / Ferrari 488 GT3 Evo	22 laps-power steering
R	**Dev Gore** (USA)	Team Rosberg / Audi R8 LMS Evo II	20 laps-gears
R	**Timo Glock** (DEU)	Ceccato Racing / BMW M4 GT3	0 laps-damage/suspension

QUALIFYING 1 **1 Rast 1m39.817s**; 2 **Muller** 1m40.005s; 3 **Preining** 1m40.039s; 4 **Schmid** 1m40.121s; 5 **Feller** 1m40.137s; 6 **K van der Linde** 1m40.348s; 7 **Wittmann** 1m40.409s; 8 **S van der Linde** 1m40.431s; 9 **Auer** 1m40.474s; 10 **Engel** 1m40.570s; 11 **Olsen** 1m40.597s; 12 **Cassidy** 1m40.626s; 13 **Ineichen** 1m40.631s; 14 **Stolz** 1m40.661s; 15 **Vanthoor** 1m40.787s; 16 **Bortolotti** 1m40.180s*; 17 **Eng** 1m40.800s; 18 **Glock** 1m40.927s; 19 **Maini** 1m40.935s; 20 **Gotz** 1m40.958s; 21 **Zug** 1m41.063s; 22 **Grenier** 1m41.127s; 23 **Buhk** 1m41.301s; 24 **Fraga** 1m41.310s; 25 **Schumacher** 1m41.392s; 26 **Gore** 1m41.396s; 27 **Muth** 1m41.397s; 28 **Deledda** 1m42.065s. *grid penalty.

RACE 2 (33 LAPS – 100.660 MILES)
1 Feller 1h01m05.974s; 2 **Gore** +1.873s; 3 **Wittmann** +3.188s; 4 **Auer** +4.064s; 5 **S van der Linde** +4.353s; 6 **Eng** +4.651s; 7 **Engel** +5.286s; 8 **Muller** +8.870s; 9 **Gotz** +9.395s; 10 **Bortolotti** +9.807s; 11 **Glock** +11.692s; 12 **Stolz** +12.386s; 13 **K van der Linde** +13.328s; 14 **Muth** +16.823s; 15 **Grenier** +17.158s; 16 **Deledda** +27.781s; 17 **Cassidy** +32.132s; 18 **Maini** +45.081s; R **Zug** 25 laps-damage; R **Schumacher** 24 laps-accident damage; R **Schmid** 21 laps-exhaust; R **Olsen** 21 laps-vibrations; R **Fraga** 9 laps-puncture; R **Rast** 3 laps-puncture; R **Ineichen** 2 laps-accident; R **Preining** 2 laps-accident; R **Vanthoor** 0 laps-collision/puncture; R **Buhk** 0 laps-collision/suspension.
Winner's average speed 98.848mph.
Fastest lap **Cassidy** 1m41.684s, 107.992mph.

QUALIFYING 2 **1 Feller 1m39.814s**; 2 **Fraga** 1m39.966s; 3 **Wittmann** 1m40.026s; 4 **Engel** 1m40.059s; 5 **Schmid** 1m40.066s; 6 **Cassidy** 1m40.067s; 7 **Stolz** 1m40.121s; 8 **Rast** 1m40.136s; 9 **Auer** 1m40.185s; 10 **Bortolotti** 1m40.214s; 11 **S van der Linde** 1m40.267s; 12 **Eng** 1m40.319s; 13 **Muller** 1m40.330s; 14 **K van der Linde** 1m40.341s; 15 **Grenier** 1m40.385s; 16 **Olsen** 1m40.464s; 17 **Vanthoor** 1m40.520s; 18 **Glock** 1m40.645s; 19 **Maini** 1m40.686s; 20 **Gotz** 1m40.490s*; 21 **Gore** 1m40.811s; 22 **Muth** 1m41.055s; 23 **Ineichen** 1m41.182s; 24 **Buhk** 1m41.186s; 25 **Schumacher** 1m40.927s*; 26 **Deledda** 1m42.064s; 27 **Zug** 1m40.833s*; EX **Preining** 1m40.485s. *grid penalty.

NEXT REPORT

NORISRING
7 JULY ISSUE
Following the Emilia Romagna parklands it's the Norisring up next

SRO/TWENTY-ONE CREATION/BENICHOU

Vanthoor and Weerts had good weekend and took points advantage

Audi and Mercedes share pole-to-win honours

GT WORLD CHALLENGE EUROPE SPRINT CUP
ZANDVOORT (NLD)
18-19 JUNE
ROUND 3/5

The importance of qualifying at Zandvoort was graphically displayed in the latest Sprint Cup rounds of the GT World Challenge Europe. Both races were won by the polesitting cars of Charles Weerts and Raffaele Marciello respectively, with the others struggling to progress through traffic. In the Dutch dunes, they were clogged up.

Weerts took pole for the opener in his WRT Audi R8 LMS and bolted into the lead as Ulysse de Pauw (AF Corse Ferrari 488 GT3) and Jules Gounon (ASP Mercedes-AMG GT3) moved ahead of Simon Gachet's slow-starting Audi, the Car Collection entry taking longer to switch on its Pirelli tyres.

The WRT Audi was never headed as Dries Vanthoor took over from Weerts and pulled clear to win. Gounon, sharing with Jim Pla, took second as the best Mercedes crew, while Gachet's Audi recovered for third, helped by an inspired move out of Hugenholtz by co-driver Christopher Haase. Fourth, impressive once again, was the Silver Cup-winning Ferrari of de Pauw and Pierre-Alexandre Jean.

In contrast, Timur Boguslavskiy struggled in qualifying and faced a tough race for him and co-driver Raffaele Marciello to retain their championship lead. Boguslavskiy struggled to get his ASP Mercedes through traffic and eventually made a lunge against Thomas Neubauer (WRT Audi) at Tarzan. There was contact, the Audi spun and the stewards investigated. Post-race, a 30-second penalty was handed down, after Marciello had endured a difficult stint that included a puncture. A desultory 23rd made it a fruitless day...

Marciello fought back with pole on a damp and drying track on Sunday morning, and his hard work helped to give him and Boguslavskiy the win. While Marciello pulled clear, the JP Motorsport McLaren of Vincent Abril was a cork in the bottle for Vanthoor, who was stuck behind. That allowed Marciello to build a gap of nearly 10s but, when Abril pitted (for what turned out to be a long stop, dropping the car to fifth), at least Vanthoor had one lap of clear air. The Audi pitted four laps sooner than the race-leading Mercedes and WRT's stop was over a second faster than ASP's. Weerts hacked into the gap and was then given a lifeline by a safety car to retrieve the McLaren of Pro-Am leader Patryk Krupinski, which was attacked by Luca Ghiotto's Audi on the Austrian's out-lap. As the field bunched up, Weerts looked a cert for a win, but Boguslavskiy proved his ability to soak up pressure for a third Sprint Cup win of the season.

"I was a bit lucky," explained Marciello, "because the McLaren wasn't as fast and held up Dries. We got a few points back today which was important."

A frustrated Weerts admitted to losing aero following Boguslavskiy but was content with a win and a second, while third fell to the Attempto Racing Audi of Dennis Marschall and Dutchman Pieter Schothorst, who fended off a mighty challenge from Gounon. In a good day for Attempto, the team took Silver Cup honours thanks to Alex Aka/Nicolas Scholl, while Dean Macdonald starred in Garage 59's McLaren en route to winning Pro-Am after alternator failure dropped them out of race one.

The results put Weerts/Vanthoor ahead by just half a point in the title race with Misano the next stop in early July.

DAVID ADDISON

Boguslavskiy gets to the line ahead of Weerts in Sunday's one-hour race

SRO/TWENTY-ONE CREATION/BENICHOU

Wins are no sweaters for Aron

FORMULA REGIONAL EUROPEAN
ZANDVOORT (NLD)
18-19 JUNE
ROUND 5/10

Mercedes F1 junior Paul Aron dominated with two poles and two wins on the Formula Regional European Championship by Alpine's stopoff at Zandvoort, the same circuit where big brother Ralf scored two of his five European Formula 3 victories with the same Prema Powerteam squad.

Aron led all the way in Saturday's race but Alpine F1 protege Hadrien David kept the Estonian on his toes in his R-ace GP car. That included a late restart following a safety car. David was then penalised 10 seconds for incorrect use of push-to-pass on the restart and, unfortunately for him, the bunching of the field by the safety car relegated the Frenchman outside the points.

Kas Haverkort (Van Amersfoort Racing) was therefore promoted to second, his reward for holding off the ART Grand Prix car of Gabriele Mini throughout. Prema's series leader and Ferrari protege Dino Beganovic was fourth, while next up Josh Dufek (VAR) suffered the same fate as David, promoting Mari Boya (ART) and Sebastian Montoya (Prema) to the top six.

Aron was once again unheaded on Sunday in a race that featured a red flag after a scary second-lap shunt between Esteban Masson and Pietro Delli Guanti – the Italian's car vaulted the wall at Gerlachbocht and landed on a sand dune, although he emerged from the cockpit under his own steam.

Mini started fifth on the grid but got up to third at the start, as second-row men Haverkort and Montoya made contact at Tarzan, sending the Dutchman to the pits for a new front wing. The Sicilian then hunted down Beganovic and, late in the race, passed him brilliantly on the outside of Tarzan.

Just behind this duo, Montoya did a solid job to claim fourth place from Leonardo Fornaroli (Trident), while Michael Belov (MP Motorsport) beat David to sixth.

Aron heads out of Hugenholtzbocht on his way to two wins

VAN DER LAAN / DUTCH PHOTO AGENCY/ FORMULA REGIONAL BY ALPINE

WEEKEND WINNERS

GT WORLD CHALLENGE EUROPE
ZANDVOORT (NLD)
Race 1 Charles Weerts/Dries Vanthoor
WRT (Audi R8 LMS GT3 Evo II)
Race 2 Raffaele Marciello/Timur Boguslavskiy
ASP (Mercedes-AMG GT3)

FORMULA REGIONAL EUROPEAN
ZANDVOORT (NLD)
Races 1 & 2 Paul Aron
Prema Powerteam

eTOURING CAR WORLD CUP
JARAMA (ESP)
Mattias Ekstrom
EKS (Cupra e-Racer)

EUROFORMULA OPEN
SPA (BEL)
Races 1, 2 & 3 Oliver Goethe
Motopark
(Dallara-Spiess)

INTERNATIONAL GT OPEN
SPA (BEL)
Leonardo Pulcini/Benja Hites
Oregon Team
(Lamborghini Huracan GT3 Evo)

TCR EUROPE
SPA (BEL)
Race 1 Isidro Callejas
Volcano Motorsport
(Cupra Leon)
Race 2 Jachym Galas
Janik Motorsport
(Hyundai Elantra N)

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Ekstrom gets back on top in Jarama heat

eTOURING CAR WORLD CUP
JARAMA (ESP)
18-19 JUNE
ROUND 3/7

Mattias Ekstrom once again proved unbeatable as the FIA ETCR eTouring Car World Cup took in its third round at Madrid's Jarama circuit. The ex-Formula 1 venue provided a good challenge for the electric touring cars with the best racing seen this season.

Wins in the quarter and semi-finals went to Ekstrom's Cupra team-mates Jordi Gene and Adrien Tambay, plus Hyundai pair Norbert Michelisz and Nicky Catsburg, the Dutchman on his series debut. Ekstrom, meanwhile, completed a clean sweep of qualifying first and winning all the stages in his pool to end the weekend back in the lead of the series standings with Tambay, the leader coming into the weekend, just six points adrift.

Heat was certainly a factor over the weekend, with temperatures nudging 40C at the start of the event, and even a brief wind storm made an appearance. Nevertheless, Ekstrom was unfazed and stood atop an all-Cupra podium at the manufacturer's home event. "We had a great weekend as a team to finish 1-2-3, with Jordi's first podium, my second King of the Weekend of the year, so I cannot say enough how happy I am at Cupra's home event," said Ekstrom. "It's been very hot, been very exciting and been very exhausting, but it's a nice feeling when you add some champagne!"

For Gene it was a popular return to the top step in Saturday's quarter-final.

Ekstrom was unbeaten across all the stages of competition

@FOTOSALCOBENDAS/ETCR

Cupra now leads the manufacturer/team standings with 554 points to the 382 of Romeo Ferraris and, ominously for the others, Ekstrom seems to be on top of the starting issues that were hitherto his only weakness.

JAMES WATT

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Strategy pays off as Mostert beats the Fords

AUSTRALIAN SUPERCARS
HIDDEN VALLEY (AUS)
18-19 JUNE
ROUND 6/13

De Pasquale leads Davison in the Saturday race

Anton De Pasquale, Cam Waters and Chaz Mostert took a win apiece away from the Darwin Triple Crown.

For the opening race, Will Davison took pole on his 500th start ahead of Dick Johnson Racing Ford team-mate De Pasquale. It was De Pasquale who made the best of the start, holding a high line around Turn 1 to set up what would be a race-winning move at Turn 5. There was little to pick between the DJR pair for the rest of the race, that early track position proving critical for De Pasquale as he took victory.

The second race was marred by a huge crash for James Courtney, who skidded across the grass between Turns 5 and 6 and collected Scott Pye. There was better news for his team Tickford Racing at the front of the field, where Waters' Ford held off a race-long Davison challenge for the win.

The third and final race looked set to be an all-DJR fight again when De Pasquale led Davison in the first stint, but a strategic gamble of pitting early for two tyres helped Mostert into the lead as the stops shook out. The undercut looked vulnerable when a late safety car erased Mostert's lead and put De Pasquale, who took three tyres much later, right on his bumper. But the caution proved to be a reprieve for Mostert's ailing rubber, the Walkinshaw Andretti United Holden driver able to then hold De Pasquale off for the run home.

Unusually there were no wins for Shane van Gisbergen. He was third in the first two races before clattering into Davison at Turn 1 late in the third race, which bent his steering and prompted a 15-second penalty. He was classified 21st, with De Pasquale closing the points gap to 214.

ANDREW VAN LEEUWEN

Fenestraz ends Kondo drought

SUPER FORMULA
SUGO (JPN)
19 JUNE
ROUND 4/7

Sacha Fenestraz scored a long-awaited first Super Formula victory at Sugo to propel himself into title contention.

Kondo Racing's Franco-Argentinian had looked a potential winner in Japan's top single-seater category since he finished third in his very first race in 2020, but some bizarre misfortune in the interim – including being unable to obtain a visa for most of last year – had conspired to keep him away from the top step of the podium.

It seemed that his unlucky streak might continue midway through the Sugo race, as early leader Fenestraz cleared his mandatory pitstop on lap 10 behind the safety car, only to end up down in eighth place as seven cars stayed on track.

That handed the initiative to TOM'S man Ritomo Miyata, who was able to build a handy cushion up front with which to make his mandatory stop. But as tyre wear became an increasing factor, Miyata couldn't increase his lead by enough to pit without losing the advantage to Fenestraz, who kept his cool despite spending most of the race stuck behind rookie Atsushi Miyake.

Once the seven leading cars had all pitted, Fenestraz brought it home to end a three-year losing streak for Kondo Racing, five seconds ahead of Nakajima Racing's Toshiki Oyu. Tomoki Nojiri made it four poles on the trot, but lost the lead to Fenestraz at the start and then got jumped by Oyu in the pits, leaving the Team Mugen driver third at the finish.

Nojiri still came away with an enhanced 17-point lead over Ryo Hirakawa, who qualified a disastrous 16th but clawed his way to seventh, one place behind Miyata.

JAMIE KLEIN

Fenestraz scored his belated first SF win

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WEEKEND WINNERS

AUSTRALIAN SUPERCARS
HIDDEN VALLEY (AUS)
Race 1 Anton De Pasquale
Dick Johnson Racing
(Ford Mustang)
Race 2 Cam Waters
Tickford Racing
(Ford Mustang)
Race 3 Chaz Mostert
Walkinshaw Andretti United
(Holden Commodore ZB)

S5000
HIDDEN VALLEY (AUS)
Heat 1 Cooper Webster
Versa Motorsport
Heat 2 Kaleb Ngatoa
Team BRM
Final Aaron Cameron
Garry Rogers Motorsport

SUPER FORMULA
SUGO (JPN)
Sacha Fenestraz
Kondo Racing (Dallara-Toyota)

SUPER FORMULA LIGHTS
SUGO (JPN)
Races 1, 2 & 3 Kazuto Kotaka
TOM'S
(Dallara-Toyota)

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Quartararo's the boss, Honda at a loss

MOTOGP
SACHSENRING (DEU)
19 JUNE
ROUND 10/20

Last year with essentially one fully functioning arm, Marc Marquez was expected to stand on top of the podium at the German Grand Prix. He had done so every time out at the Sachsenring since his MotoGP debut in 2013, while no manufacturer other than Honda had taken a victory at the circuit since Valentino Rossi in 2009 on the Yamaha. And, lo and behold, Marquez won in 2021.

Even allowing for Marquez's continued absence through a fourth major operation on his badly broken right arm, which has gone well with his recovery heading in the right direction, Honda's decline in Germany last weekend was impossible to predict. With LCR duo Alex Marquez and Takaaki Nakagami retiring due to a technical issue and crash respectively, Pol Espargaro pulling out with rib pain, and team-mate Stefan Bradl 16th after his RC213V burned his right foot, Honda emerged from the German GP with no points. It was the first time since it boycotted the 1982 French Grand Prix that Honda didn't score in a race.

It's an indictment of the disarray in which Honda has found itself without its talismanic leader at full fitness. And while there were echoes of a pointless past for Honda at the back of the field, Yamaha's Fabio Quartararo strengthened his position at the head of the championship with another emphatic win.

From being under the weather on Friday and struggling for grip, Quartararo's weekend improved gradually. He was second in qualifying, having "switched my brain off" to get to 0.076 seconds off poleman Francesco Bagnaia, who looked stronger than he has so far in 2022 on his factory Ducati.

After a good run in Sunday's warm-up, Quartararo made the "very risky" decision to race the medium rear tyre instead of the hard (one of only two riders to do so) in the sweltering Saxony heat. That risk was only heightened after a strong opening few laps, in which he'd taken the lead off the line and opened up a 0.6s gap by the end of the third tour, when he felt he'd taken too much out of his rubber.

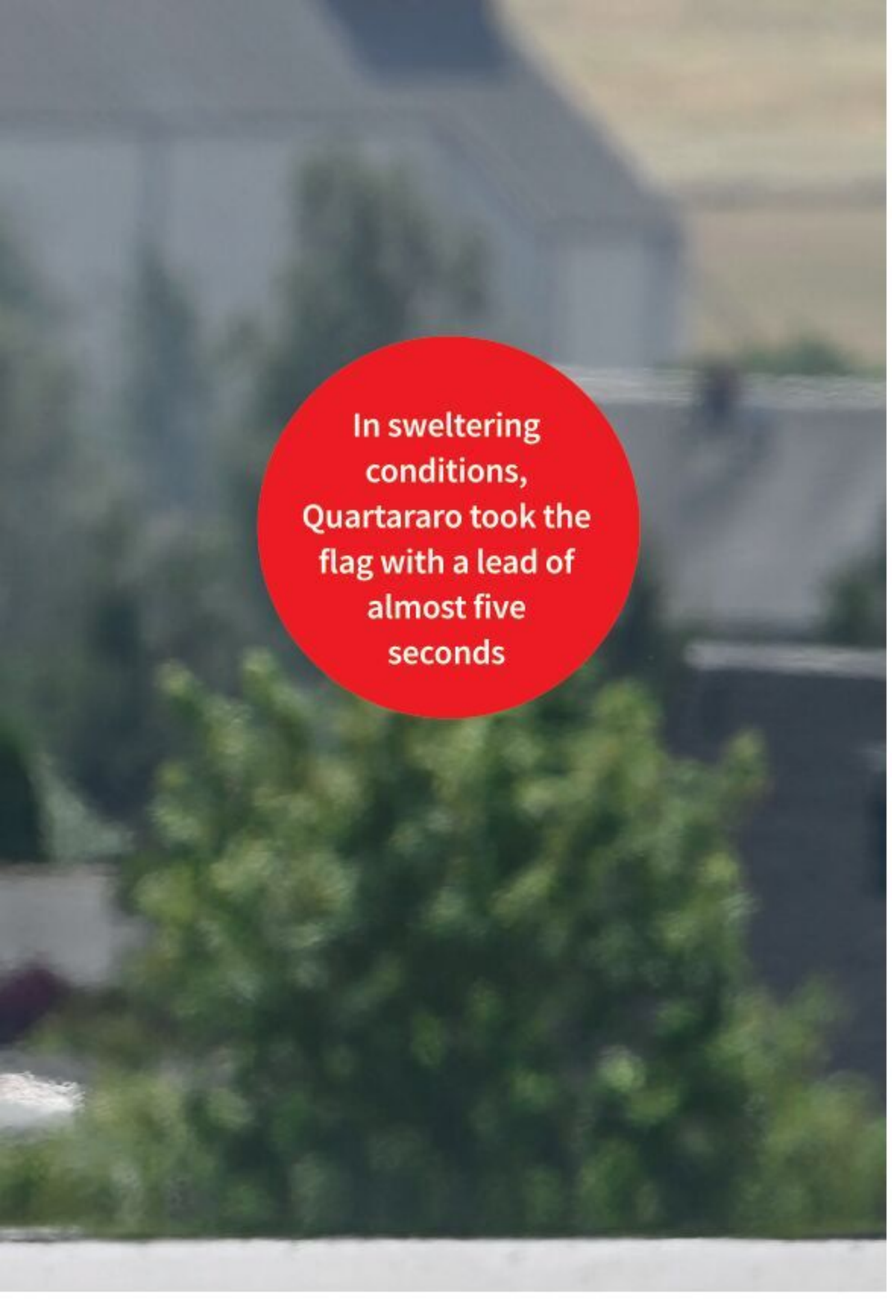
Perhaps Bagnaia on the more durable hard rear would have come back to him, but the Italian endured a "hard to accept" crash exiting Turn 1 on lap four when the rear of his GP22 came round on him. He has slipped 91 points behind Quartararo and his title hopes are all but over now.

As Quartararo eased to the chequered flag close to five seconds clear of the field, his nearest title rival Aleix Espargaro battled a front tyre vibration on his way to fourth on his Aprilia, ceding more points two weeks after his Barcelona last-lap gaffe, when he miscounted the race distance remaining. Gresini Ducati rider Enea Bastianini, third in points pre-weekend and thrice a winner in 2022, was down in 10th at the chequered flag.

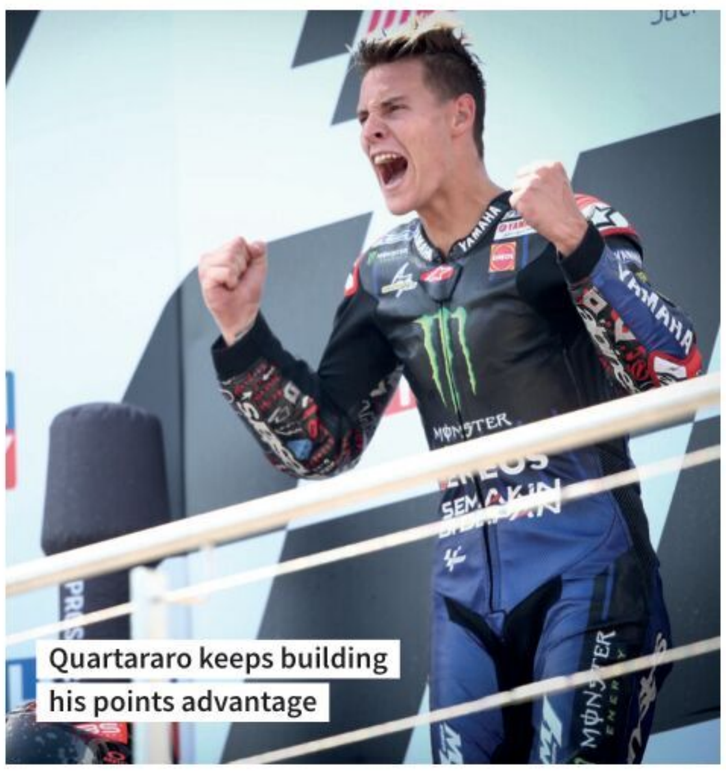
Just like Marquez has in previous years, Quartararo has been granted big opportunities by faltering rivals while on a bike that can be described in some respects as inferior to some of those around him, chiefly the Aprilia and Ducati. But riding in utter synchronisation with his machine, the Frenchman is inflicting huge damage as each round passes, not least in a phase of the championship where he was expected to be severely hindered by the Yamaha's lack of horsepower. From the past three races, he has scored 70 out of a possible 75 points. Now he goes to Assen this weekend and Silverstone at the start of August, venues suited nicely to the Yamaha and tracks on which he won in 2021. And, just like

Zarco leads Espargaro on his way to second

ALL PICS: GOLD AND GOOSE



In sweltering conditions, Quartararo took the flag with a lead of almost five seconds



Quartararo keeps building his points advantage

last year, the championship is looking increasingly as if it's his to lose.

Ducati still emerged from Germany with a double podium, with Pramac's Johann Zarco in a lonely second and Jack Miller brushing off a long-lap penalty to beat Aleix Espargaro late on for third. Luca Marini (VR46) and Jorge Martin (Pramac) rounded out the top six behind Espargaro, capping off a solid run for Ducati at an historically bogey track. But once more, its wait for a title looks like it will be extended.

That much rings true for 2020 world champion Joan Mir, who crashed from his Suzuki on lap four, seconds after Bagnaia did. Since Suzuki announced that it was quitting MotoGP in 2023 last month post-Spanish GP, it has had three non-scores in four after injury rendered Alex Rins a non-starter last weekend.

LEWIS DUNCAN

NEXT REPORT

ASSEN
30 JUNE ISSUE

POWERED BY motorsport STATS

RESULTS ROUND 10/20, SACHSENRING (DEU), 19 JUNE (30 LAPS – 68.432 MILES)

POS	RIDER	TEAM	TIME
1	**Fabio Quartararo** (FRA)	Yamaha	41m12.816s
2	**Johann Zarco** (FRA)	Pramac Ducati	+4.939s
3	**Jack Miller** (AUS)	Ducati	+8.372s
4	**Aleix Espargaro** (ESP)	Aprilia	+9.113s
5	**Luca Marini** (ITA)	VR46 Ducati	+11.679s
6	**Jorge Martin** (ESP)	Pramac Ducati	+13.164s
7	**Brad Binder** (ZAF)	KTM	+15.405s
8	**Fabio Di Giannantonio** (ITA)	Gresini Ducati	+15.851s
9	**Miguel Oliveira** (PRT)	KTM	+19.740s
10	**Enea Bastianini** (ITA)	Gresini Ducati	+21.611s
11	**Marco Bezzecchi** (ITA)	VR46 Ducati	+23.175s
12	**Raul Fernandez** (ESP)	Tech3 KTM	+26.548s
13	**Franco Morbidelli** (ITA)	Yamaha	+29.014s
14	**Andrea Dovizioso** (ITA)	RNF Yamaha	+30.680s
15	**Remy Gardner** (AUS)	Tech3 KTM	+30.812s
16	**Stefan Bradl** (DEU)	Honda	+52.040s
R	**Pol Espargaro** (ESP)	Honda	22 laps-fatigue
R	**Maverick Vinales** (ESP)	Aprilia	19 laps-rideheight
R	**Takaaki Nakagami** (JPN)	LCR Honda	6 laps-accident
R	**Alex Marquez** (ESP)	LCR Honda	6 laps-technical
R	**Darryn Binder** (ZAF)	RNF Yamaha	5 laps-accident
R	**Francesco Bagnaia** (ITA)	Ducati	3 laps-accident
R	**Joan Mir** (ESP)	Suzuki	3 laps-accident
NS	**Alex Rins** (ESP)	Suzuki	injury

WEEKEND WINNERS

MOTO2
SACHSENRING (DEU)
Augusto Fernandez (below)
Ajo Motorsport (Kalex)

MOTO 3
SACHSENRING (DEU)
Izan Guevara
Aspar Team
(Gas Gas)

Winner's average speed 99.624mph. **Fastest lap** **Quartararo** 1m21.584s, 100.654mph.

QUALIFYING 2 **1 Bagnaia 1m19.931s**; 2 **Quartararo** 1m20.007s; 3 **Zarco** 1m20.030s; 4 **A Espargaro** 1m20.120s; 5 **Di Giannantonio** 1m20.128s; 6 **Miller** 1m20.150s; 7 **Marini** 1m20.168s; 8 **Martin** 1m20.219s; 9 **Vinales** 1m20.468s; 10 **Nakagami** 1m20.562s; 11 **Bezzecchi** 1m20.593s; 12 **Mir** 1m20.732s.

QUALIFYING 1 **Di Giannantonio 1m20.307s**; **Bezzecchi** 1m20.600s; 13 **P Espargaro** 1m20.604s; 14 **Oliveira** 1m20.656s; 15 **B Binder** 1m20.757s; 16 **Marquez** 1m20.888s; 17 **Bastianini** 1m20.905s; 18 **Bradl** 1m20.908s; 19 **Dovizioso** 1m20.965s; 20 **Morbidelli** 1m21.020s; 21 **Gardner** 1m21.089s; 22 **Fernandez** 1m21.322s; 23 **D Binder** 1m21.322s.

RIDERS' CHAMPIONSHIP **1 Quartararo 172**; 2 **A Espargaro** 138; 3 **Zarco** 111; 4 **Bastianini** 100; 5 **B Binder** 82; 6 **Bagnaia** 81; 7 **Miller** 81; 8 **Rins** 69; 9 **Mir** 69; 10 **Oliveira** 64; 11 **Martin** 61; 12 **Marc Marquez** 60; 13 **Marini** 52; 14 **Vinales** 46; 15 **P Espargaro** 40; 16 **Nakagami** 38; 17 **Bezzecchi** 35; 18 **A Marquez** 26; 19 **Morbidelli** 25; 20 **Di Giannantonio** 16; 21 **D Binder** 10; 22 **Dovizioso** 10; 23 **Gardner** 9; 24 **Fernandez** 5; 25 **Michele Pirro** 0; 26 **Bradl** 0; 27 **Lorenzo Savadori** 0.

MANUFACTURERS' CHAMPIONSHIP **1 Ducati 221**; 2 **Yamaha** 172; 3 **Aprilia** 139; 4 **KTM** 110; 5 **Suzuki** 93; 6 **Honda** 81.

Shunt put Rins out with wrist injury

CONNECTING TWO OF FERRARI'S

FAVOURITES

"With his generosity, his courage, with the ability he had in driving cars, he taught us what needed to be done so that a driver could defend himself in an unpredictable moment. He was a master of combat and gave so much to Ferrari. I loved him." If you want to comprehend the impact a driver who scored just six wins for Ferrari had on the Italian marque's great founder and leader Enzo, his quote on the plaque of the Gilles Villeneuve memorial at Imola sums it up beautifully.

Villeneuve is widely recognised as one of the greatest grand prix drivers never to become world champion, his legacy stretching far beyond a career tragically cut short by his death in a qualifying accident at Zolder in 1982. Forty years later, he is still revered for his bravery, his knack for the spectacular, and for the qualities that made him so loved by Enzo Ferrari.

To celebrate Villeneuve's enduring spirit and place among its history, Ferrari held a special event at Fiorano in April. The team provided its current F1 title fighter, Charles Leclerc, with the chance to sample the great Canadian's Ferrari 312T4 from 1979, when he scored three wins and finished runner-up in the world championship to team-mate Jody Scheckter.

It's an experience few F1 drivers are afforded, making it a special moment for Leclerc. But it also draws parallels between Villeneuve and Maranello's current favourite son, whose abilities and future prospects surely would have won him a similar adoration from Enzo Ferrari. "It is part of the legend of Ferrari, but also of Gilles Villeneuve," Leclerc says in the video released by F1 to mark the anniversary. "It makes me emotional to be the driver chosen to drive this car today."

This kind of appreciation for F1 history is something not every driver has, and something even fewer get the opportunity to truly understand. "They are drivers that I've never seen in real life, but obviously you get to see a lot now with social media, you get to see a lot of their fights," Leclerc says. "But you only appreciate how much risk they were taking once you actually get into one of their cars."

Leclerc's former team-mate, Sebastian Vettel, has tested many a classic F1 car and even has his own collection, with Nigel Mansell's famous 'Red 5' Williams FW14B among his prized possessions. He says it's "great fun" and a "unique opportunity" for any driver to get "a great insight of how life or how driving has been back then".

That's something that strikes Leclerc from the moment he peels out of the garage at Fiorano after being run through the basic controls by the Ferrari crew. At a fairly slow speed, encountering a lack of grip at first on the same tyres that were on the 312T4 in the museum (which

TE SONS

Gilles Villeneuve is still a legend for the tifosi — and current star Charles Leclerc recently got behind the wheel of a very special car from the French-Canadian's career

LUKE SMITH

PHOTOGRAPHY **FERRARI**

Arnoux is on hand to offer tips and reminisce about his legendary contemporary Villeneuve

"YOU CAN PLAY WITH THE CAR QUITE A LOT. IT'S JUST CRAZY. THE REAR IS ALWAYS MOVING"

he says feel "like wood"), Leclerc takes his step back in time with a car that is a world away from the F1-75 he is driving this year.

And boy, does he have fun. That same lack of grip gives him free rein to regularly stick the back end out as he completes his laps, fighting the oversteer just enough to stay in control — a very Villeneuve-esque approach. Once his run is over and the engine cut, he turns to the Ferrari mechanics, beaming: "*Bella*! *Bellissima*!"

"You can play with the car quite a lot," Leclerc says. "It's just crazy. The gears are something that is quite different to our cars now. It's a bit harder to go from one gear to another, and it's very, very tricky to drive. The rear is always moving."

But it also brings home to Leclerc how much risk the drivers »

Cockpit culture shock: sole switch on the wheel and a 'proper' gearshift

"YOU CAN ALWAYS FEEL THE DANGER. NOW WE'VE LOST A LITTLE BIT THIS FEELING THAT IS IN THE CAR"

in Villeneuve's era took each time they stepped into the cockpit. In every conversation he has since had about the test, Leclerc has made clear how drastic he found the difference. He gets an unwanted additional understanding about the risks involved a few weeks later when a brake disc failure causes him to crash a 1974 ex-Niki Lauda Ferrari 312B3 at the Monaco Historique.

"You can always feel the danger," adds Leclerc. "Now we've lost a little bit this feeling that is in the car, I feel safe. But when you drive these cars, it puts everything back in a dimension and shows you how much of a step Formula 1 has done since those years in terms of safety.

"Now with our cars, it's all about the smallest details. Here it was all about who is willing to take more risk, I think. At that time, it was probably more the bravery that was coming out."

It's precisely that bravery that Villeneuve brought by the bucketload. From the moment he made his F1 debut at Silverstone with McLaren in 1977, it was clear that his approach was to find the limit by going over it and then working backwards, not by building his way up. It was what marked him out as one of the most spectacular drivers of his generation.

Leclerc mentioned the clips of Villeneuve he's watched online. The most famous, of course, is the fight against Rene Arnoux at Dijon in 1979 (see page 44). Even if you can't recall it, you've probably seen it: the sight of the red Ferrari and yellow Renault dicing back and forth, exchanging positions lap after lap, ultimately separated by just two tenths of a second at the chequered flag. It remains the example of what true racing in F1 should look like; an antidote to whatever mundane definition of 'track limits' today's F1 may necessitate.

His significance in the story of Villeneuve and the 312T4 meant an invitation to Leclerc's test was extended to Arnoux, which he gladly took. "This car, it's special to me," says Arnoux, who joined Ferrari from Renault in 1983. "Gilles was an acrobat driver, always at the maximum. "He used the car for 60 laps. Ten laps before the end, he's in very big difficulties with the car because he used the tyres very hard, brake, engine and everything. But he adjusted his driving each time. This was Gilles."

Think of Leclerc. Think of his approach, his hard but fair duels against Max Verstappen through the early part of this season. Think of the times he has crashed by pushing too hard, his all-or-nothing charge leaving him to lament his self-accused stupidity. Every time he steps into the car, he squeezes every single drop of performance out of it. Comparing drivers across eras is difficult and occasionally foolhardy, yet there is definite crossover between the ways that Leclerc and Villeneuve have gone about their business on-track.

Off-track, the similarities are even starker. The fashion in which Leclerc has been embraced by not just Ferrari itself, but its loyal tifosi, is rarely seen. His breakout season in 2019 was rewarded with a bumper long-term contract, signalling to Vettel – who arguably never quite reached such levels of adoration, even during the good times at

Museum tyres that feel "like wood" just add to the fun factor

Maranello – that this was no longer his team.

"Being [part of] Ferrari is somehow trying to enhance the myth of the *cavallino* [Ferrari's prancing horse]," says Ferrari F1 boss Mattia Binotto. "There are only few drivers which are capable of doing that, and I think Charles is one of these, as was Gilles.

"Gilles was fantastic. Gilles won only six races, but remains for all the tifosi and the *cavallino*, the driver. It really was his way of driving, his way of behaving. It's the passion he showed. And I think Charles has got that, and that's something which is great. We are passionate as well ourselves, and we hope that he will win more than six races."

The passion for Ferrari is something that was instilled in Leclerc at a very young age, when he would take special note of the red cars racing around the streets of Monaco where he grew up. As his racing aspirations grew, encouraged by his late father and his godfather, Jules Bianchi, Leclerc gravitated towards Ferrari. He proved his quality in junior categories, but to be handed a Ferrari F1 seat after just one season, becoming its youngest driver since Ricardo Rodriguez in 1961, was not without risk. Yet just like Villeneuve, he proved he was ready for the opportunity in emphatic fashion.

The idea of 'favourite sons' within F1 teams may be a touchy subject in an era of rules of engagement and team orders. But few drivers have managed to capture the spirit of the tifosi since the heyday of Michael Schumacher in the way that Leclerc has. As Binotto says, it is something that goes beyond simply driving a car or being successful; it's about adding to the myth of F1's most famous team through a strong bond and connection with all it embodies.

It may only have been a simple demonstration run, but Leclerc's chance to sample Villeneuve's car and the emotional appreciation he showed will only have deepened his connection to the *cavallino*, sowing the seeds for a burgeoning legacy.

P40 VILLENEUVE'S GREATEST F1 RACES

Leclerc appreciates his hands-on insight into the bravery of his predecessors

THE REAL PERFORMANCES BEHIND THE LEGEND

SCHLEGELMILCH/MOTORSPORT IMAGES

The 1979 Formula 1 season is often described as one in which Gilles Villeneuve helped Ferrari team-mate Jody Scheckter win the title. That doesn't do justice to the South African, who was 7-6 up in qualifying at the point when he clinched the crown, but it does underline the impact Villeneuve made in his second full season.

The French-Canadian had scored his first F1 victory at the end of 1978 and started the new year with the ageing 312T3. When the 312T4 arrived for the third event in South Africa, Ferrari's season came alive. Both drivers could have won at Kyalami, but it was Villeneuve who came out on top (see page 42). He immediately doubled up by dominating around the streets of Long Beach.

That put Villeneuve into the points lead, seven clear of Scheckter, but then things slipped. In Spain he had a gearbox issue, made two mistakes and finished seventh to his team-mate's fourth. In Belgium he made a bad start, was delayed by an early clash between Scheckter and Clay Regazzoni, charged up to third, then ran out of fuel as Scheckter took a well-judged if fortunate win.

Scheckter pipped Villeneuve to Monaco pole and led from start to finish, Villeneuve running second when his transmission failed. Even after Villeneuve's heroic second in the French GP, Scheckter led the championship by four points. A fuel system problem put Villeneuve out of the British GP and a fuel mixture error hampered him in Germany, where Scheckter was always ahead. A brilliant start and Renault unreliability helped Villeneuve to second in the Austrian GP, with Scheckter fourth, and then came the infamous Dutch GP.

Zandvoort summed up their contrasting approaches. From sixth on the grid, Villeneuve stormed up to second at the start as Scheckter fell to the back. Villeneuve brilliantly overtook Alan Jones, stayed out even though he had a slow puncture, showed remarkable car control in a spin, still stayed out, then suffered a tyre failure and another spin. He famously dragged the car back to the pits but was forced to retire. Had he pitted earlier, he could have been second or third. Instead, he scored no points while a charging Scheckter finished second…

That created the possibility that Scheckter could clinch the title at Monza and Villeneuve dutifully followed his friend to complete a Ferrari 1-2.

With the title secured, Scheckter was no match for his team-mate at Montreal or Watkins Glen, Villeneuve finishing the season with his third win to finish runner-up in the standings. Scheckter was a worthy champion, but Villeneuve had made his mark – and shown all the brilliance, drama and flair that made him a star.

KEVIN TURNER

STATS

Starts: 67

Wins: 6

Poles: 2

Fastest laps: 8

REMEMBERING VILLENEUVE

GILLES VILLENEUVE'S GREATEST F1 RACES

Gilles Villeneuve was killed during practice for the 1982 Belgian Grand Prix. Forty years on, we pick out the greatest drives by a Ferrari legend

KEVIN TURNER

PHOTOGRAPHY motorsport IMAGES

PHIPPS

1978 ITALIAN GP

MONZA FERRARI 312T3 7TH

10

The 1978 Italian Grand Prix is infamous for Ronnie Peterson's death following a multi-car accident at the shambolic start. That overshadowed an event in which the Swede's Lotus team-mate Mario Andretti clinched the world title, and in which Villeneuve starred.

Following a long delay after the early accident, the race was restarted over 40 laps. Villeneuve had qualified a brilliant second, over a second clear of team-mate Carlos Reutemann in 11th, and remained in his Ferrari during the stoppage.

Unlike the first start, there was a long hold on the lights and Villeneuve went too early, chased by Andretti's groundbreaking, ground-effects Lotus 79. They soon pulled clear of the rest, Villeneuve rebuffing Andretti's early challenge and eking out a small lead.

Villeneuve (12) and Andretti prepare to get going a little too soon

Then both were handed one-minute penalties for jumping the start. "This, particularly in the case of Andretti, seemed unnecessarily harsh," reckoned Autosport's Nigel Roebuck. "The two men were head and shoulders above any of their rivals."

Despite brake and tyre issues, Andretti attacked in the closing stages and finally made it past on lap 35. The "tenacious" Villeneuve nevertheless finished just over 2s behind, the duo then demoted to sixth and seventh respectively by the penalties.

A month later Villeneuve took his first world championship GP victory on home ground in Montreal, but only after Peterson's replacement, poleman Jean-Pierre Jarier, had retired from a dominant lead with a holed radiator on his 79. At Monza, Villeneuve had taken the fight to the Lotus team leader and world champion.

1980 CANADIAN GP

MONTREAL FERRARI 312T5 5TH

9

Not only was the 312T5 an uncompetitive machine in 1980, at Montreal the Michelin tyres used by Ferrari struggled in the cold conditions more than the Goodyears run by most of the field. The problem was so bad that reigning world champion Jody Scheckter failed to qualify for the 24-car grid, with Villeneuve scraping in 22nd, 0.8 seconds quicker than his team-mate.

Things didn't look much better at the start. Villeneuve was involved in a multi-car crash, triggered by title contenders Alan Jones and Nelson Piquet, that forced him into the spare Ferrari after the race was halted. But he immediately made progress following the restart.

There were many incidents and problems for those ahead, but Villeneuve also made some overtaking moves as he was cheered on by his home crowd. As early as lap nine he picked off Jean-Pierre Jabouille's Renault to run ninth. That became eighth when leader Piquet's Brabham blew its Cosworth DFV.

Just before half-distance of the 70-lapper, Villeneuve overcame the second Brabham of Hector Rebaque and he made it into the points when Alain Prost's McLaren crashed with suspension failure. When Jacques Laffite's Ligier ran out of fuel on the penultimate lap, Villeneuve inherited fifth.

Villeneuve's best lap, although 1.5s slower than the inspired Didier Pironi's Ligier, put him sixth in the fastest laps list – in a car that had qualified 3.5s off pole. It was one of the finest examples of Villeneuve's fighting spirit.

1980 MONACO GP

MONTE CARLO FERRARI 312T5 5TH

8

The 1980 Ferrari 312T5 remains one of the team's worst cars in its seven-decade history in F1. Villeneuve always pushed it to its limits (and sometimes over) and utterly trounced team-mate Jody Scheckter.

In first practice at Monaco on Thursday, Villeneuve was predictably rapid in slippery conditions before going down an escape road and accidentally triggering his fire extinguisher. He rushed back, jumped in the spare car – and skimmed various barriers on his way to second fastest. A clash with eventual polesitter Didier Pironi's Ligier then damaged the Ferrari on Saturday, but he still qualified sixth with a damaged wishbone, over a second quicker than Scheckter.

There was a shambles into Ste Devote at the start and Villeneuve had to take to the escape road. He completed the first lap in ninth.

Villeneuve quickly overcame Jean-Pierre Jabouille's Renault and then closed on Scheckter, who had benefited from the opening lap shenanigans. Scheckter waved his team-mate by but both Ferraris were soon in tyre trouble and pitted, Villeneuve falling to 14th. He started another climb.

Alan Jones retired from second with diff failure and, shortly after half distance, it began to drizzle. Villeneuve, now running 10th, soon overtook Emerson Fittipaldi and gained another spot when Patrick Depailler's Alfa Romeo suffered engine failure. On lap 55 worsening gearbox problems finally caused leader Pironi to hit the barriers, elevating Villeneuve to seventh.

Mario Andretti's Lotus was forced to pit with gear linkage issues and his team-mate Elio de Angelis crashed. That left Villeneuve, the fastest driver on track in the tricky closing stages, chasing the Arrows of Jochen Mass for fourth. Villeneuve had a spin but pressed on and, when Mass also had a moment on the final lap, the Ferrari followed the Arrows across the line in fifth. Scheckter had long since given up, complaining of ill-handling…

"When you're stuck with a shitbox, everything is a matter of little victories – and today feels like one of those," Villeneuve told Nigel Roebuck. "I tell you, I could not have driven that car faster."

PHIPPS

1979 SOUTH AFRICAN GP

KYALAMI FERRARI 312T4 1ST

7

Ferrari brought its new 312T4 to the third round of the 1979 championship and Villeneuve put on one of his most accomplished F1 drives yet.

At Kyalami's high altitude, the turbocharged Renault had a significant power advantage and Jean-Pierre Jabouille took pole, with Jody Scheckter's Ferrari second and Villeneuve third, just 0.03 seconds slower having missed some of qualifying thanks to a cracked rear suspension mounting point.

The two Ferraris battled the Renault early on and the trio swapped places several times. Scheckter was ahead, with Villeneuve second, when the race was stopped as rain arrived.

The circuit was wet for the restart, Villeneuve selecting grooved tyres and Scheckter slicks. Villeneuve raced away from the grid and started to build a lead before making an inevitable pitstop on lap 15 of the 78-lapper as the track dried.

Scheckter, who had hung on well in the early going, moved to the front and had a lead of half a minute. But he'd taken too much out of his tyres, later admitting he also left his second stop too long. Villeneuve closed.

Scheckter had a lock-up and then finally decided to pit on lap 53, handing Villeneuve the lead. The home hero charged, cutting the gap from more than half a minute to just 3.4s at the flag, but Villeneuve had judged things perfectly and looked after his rubber.

"I waited until the fuel load lightened before pushing the tyres too hard," he explained. "Then, when I felt either the front or back tyres going off, I adjusted my driving style to bring them back again."

1979 CANADIAN GP

MONTREAL FERRARI 312T4 2ND

6

Alan Jones and the Williams FW07 were the combination to beat at the end of 1979. The Australian had won three of the four races heading into the Canadian GP, qualified on pole by nearly 0.7s, and beat team-mate and third-placed finisher Clay Regazzoni by more than a minute. Everyone behind Regazzoni, including Jody Scheckter, was lapped.

But the winning margin was only 1.1s because Jones and Villeneuve engaged in an enthralling battle for supremacy for the entire race.

Villeneuve used the torque of the flat-12 to jump into the lead at the start and the two immediately began pulling clear of the rest. Jones was initially content to sit behind but kept the pressure up, and on lap 51 he got a better run on the stretch to the hairpin. The Williams dived down the inside. Villeneuve gave Jones room, they touched wheels and the lead changed.

Jones initially pulled out a small lead but, typically, Villeneuve would not give up and clawed his way back to shadow Jones to the flag. The duo had been together virtually throughout and been in a class of their own. "Apart from the lead battle, it had not been much of a race but, with a battle like we had for the whole 72 laps, it didn't have to be," wrote Jeff Hutchinson in our report.

1979 US GP WEST

LONG BEACH FERRARI 312T4 1ST

5

Not all of Villeneuve's drives were heroic performances against the odds. He could utterly dominate, too.

Before that, though, there was confusion at the end of the warm-up lap. With no one at the startline to direct the drivers to the grid, Villeneuve (on pole for the first time) inadvertently overshot his slot, was followed by several others, and chaos ensued. Villeneuve was handed a fine that Autosport described as "ridiculously harsh" but received no penalty.

Once order had been restored, Villeneuve held off Jody Scheckter at the start and then the second Ferrari lost out to Patrick Depailler's Ligier. Scheckter got bogged down battling Depailler and then a charging Jean-Pierre Jarier's Tyrrell, which caught and passed both to move into second, with Scheckter soon following him by the Ligier.

Scheckter, having knocked his nose askew, finally secured second on lap 27 of 80, by which time Villeneuve had disappeared into the distance. Villeneuve had again selected a softer-compound Michelin than Scheckter, but never looked like being in danger as he managed his delicate rubber.

Villeneuve set fastest lap, led every tour and took the flag 29.4s clear to move into the lead of the championship.

SCHLEGELMILCH

Villeneuve held off Scheckter, then simply drove into the distance

1979 US GP EAST

WATKINS GLEN

FERRARI 312T4 1ST

4

Forget the famous practice session in the wet. Yes, Villeneuve was 9.7s faster than Jody Scheckter, but only six cars recorded times and the Michelin wets were superior to the Goodyears. It certainly showed Villeneuve's passion and car control, but the performance in the race is what gets this event on the list.

Villeneuve qualified third in the dry, a considerable 1.3s behind the Williams of Alan Jones, with Nelson Piquet's Brabham in between. But rain arrived shortly before the start. Brabham couldn't get its airgun equipment working in time, so Piquet was forced to start on slick tyres. He was easy meat for Villeneuve, but the Ferrari had to be right on the edge at the first corner to get ahead of Jones as both went in deep.

Villeneuve quickly pulled away from the Williams in the early stages but, as the track dried, the harder Goodyear tyres came into their own and Jones started closing.

Scheckter had already stopped for his switch to slicks, but his times hadn't yet surpassed his team-mate's.

Jones eventually grabbed the lead on lap 32 of 59 and Villeneuve pitted to switch to slicks on lap 34. Jones came in two laps later and the enthralling fight looked set to continue as Villeneuve swept back into the lead. But Williams hadn't been able to get the right-rear wheelnut secured properly and the wheel parted company, putting Jones out of the race.

That should have made the rest of the race easy for Villeneuve, but low oil pressure gave him concern over the closing 20 laps. He nursed the car home, allowing his remaining pursuers to unlap themselves, though he still took the flag 49s clear of Rene Arnoux's Renault in second.

COLOMBO

1981 MONACO GP

MONTE CARLO FERRARI 126CK 1ST

3

Villeneuve needed luck to win the 1981 Monaco GP, but his performance all weekend meant he deserved some. Although team-mate Didier Pironi suffered a torrid practice, with crashes and engine failure, Villeneuve's qualifying effort was still remarkable. He took the cumbersome 126CK, Ferrari's first turbocharged F1 car, around in 1m25.788s. That was just 0.078s slower than poleman Nelson Piquet's far more suitable Brabham BT49C and *2.478s* faster than Pironi, who qualified 17th. It was one of the finest qualifying laps in history.

"Compared with the Williams, Brabhams and Arrows, the Ferraris looked a little clumsy, but Villeneuve's genius had every pound of boost working for him," reported Nigel Roebuck. "It was very dramatic indeed."

Villeneuve held on to second at the start but predictably had no answer to Piquet's Brabham. After 15 of the 76 laps, Villeneuve was 8.5s behind and had a different problem to worry about.

Alan Jones had jumped from seventh on the grid to fifth on the opening lap and made it into third when team-mate Carlos Reutemann hit Nigel Mansell's third-placed Lotus. Jones quickly closed on Villeneuve

1979 FRENCH GP

DIJON FERRARI 312T4 2ND

2

The battle between Villeneuve and Rene Arnoux in the closing stages of the 1979 French GP has become part of F1 folklore, but there was much more to the performance than the scintillating wheel-to-wheel contest.

Jean-Pierre Jabouille had qualified on pole in the now twin-turbo Renault, with team-mate Arnoux alongside. Villeneuve was within half a second of pole and punched his way between the Renaults to lead at the start. He initially edged clear, but eventually and inevitably Jabouille's response came.

Around quarter distance, the Renault started reeling in the Ferrari. Villeneuve's tyres were past their best after his early charge and Jabouille sailed by as they started lap 47, swiftly building a lead.

While Jody Scheckter – who complained that his Ferrari engine wouldn't pull its usual revs and was running fifth – decided to pit for fresh tyres on his way to a lapped seventh, Villeneuve pressed on and did not stop.

Arnoux had recovered from an appalling first lap that had briefly left him ninth. He had reached third on lap 15 of 80 and finally started to close on Villeneuve as the Ferrari lost grip. How hard the two were trying was demonstrated by both setting their fastest laps – Arnoux's 1.7s faster! – on lap 71 despite their fading rubber.

With five laps to go they were together. Arnoux got alongside on the start/finish straight and took second on the inside despite the Ferrari trying to hold on. But Villeneuve had sensed that the Renault was not 100%. "I expected him to run away down the straight, just as Jabouille had done, but he wasn't getting away," said Villeneuve of Arnoux's slight fuel pick-up issue.

With a huge lock-up, the Ferrari lunged down the inside into the first corner at the start of the penultimate lap. Arnoux pulled alongside again as they raced onto the final lap and the two cars banged wheels. Arnoux ran wide exiting the

COLOMBO

and, on lap 20, dived for the inside into Mirabeau. Villeneuve left *just* enough room and the Williams was through. As Jones headed off in a chase of Piquet, the Ferrari also fell prey to Riccardo Patrese's Arrows, underlining the quality of Villeneuve's qualifying effort.

The Arrows soon expired and then Jones's fantastic pursuit of Piquet paid dividends when the Brabham slid into the barriers at Tabac while attempting to lap backmarkers on lap 54. Jones inherited a lead of more than half a minute.

It all looked over, only for the Williams to start struggling with fuel vaporisation. Jones shot into the pits, hoping a fuel top-up would solve his engine's hesitancy. But all it did was reduce his lead – with eight laps to go it was just 6.4s.

Villeneuve smelled a chance and pressed on, setting his best lap – still 1.5s off Jones's earlier benchmark and 0.6s clear of Pironi's best – on lap 71. As they crossed the line to start lap 73 the Ferrari powered past the hobbled Williams, Villeneuve going on to take the flag an unlikely victor by 40s. Pironi was fourth, a lap and a half behind his team-mate.

"It was one of the most tiring races of my life," said Villeneuve. "I had problems with the brakes and the traction, but the engine was fantastic all the way through."

Sabelliers left-hander, allowing Villeneuve alongside. They bashed wheels again and Villeneuve turned into Gauche de la Bretelle with the Renault alongside. There was more contact – enough to probably put modern F1 cars off – but they somehow both survived, with Arnoux now ahead. Approaching the uphill Parabolique right-hander, the Renault driver left a gap on the inside and Villeneuve filled it. Arnoux couldn't respond and the duo flashed across the line with Villeneuve ahead by 0.24s.

Both had enjoyed what was – and still is – regarded as one of the most tenacious battles in F1 history, a battle Villeneuve had won with a slower car.

1981 SPANISH GP

JARAMA FERRARI 126CK 1ST

1

If the 1981 Monaco GP qualifying showed Villeneuve at his improvisational best, perhaps the Spanish GP two weeks later showcased more of his great qualities than any other.

"This one was against the run of play," reported Nigel Roebuck. "In theory, at least, a race at Jarama is won on handling." Qualifying had backed up that view. Jacques Laffite's Ligier took pole ahead of the two Williams FW07Cs of Alan Jones and Carlos Reutemann. Villeneuve was the top turbo runner in seventh, 1.2s off pole and 'only' 0.7s quicker than team-mate Didier Pironi this time.

Villeneuve's first crucial moment: the start. One of the few cars in the top five rows not to creep, he got it just right and powered into third, slotting in behind Jones and Reutemann. The second moment: on it straight away, he then used the power of the Ferrari to get alongside Reutemann – on the outside – into the first corner on lap two. Somehow, he came out ahead and was now second.

Jones simply walked away from the field in the early stages. After 10 laps he was 7.9s ahead of Villeneuve. But on lap 14 of 80, Jones went off and threw away his likely victory. Villeneuve now led from Reutemann, who had a minor gear lever issue but looked faster. The Williams got alongside on several occasions but could not make a move stick.

Laffite, having fallen as far as 11th after his bad start, had been making progress. He got stuck behind John Watson's McLaren for some time but finally found a way by on lap 50 to take third. He closed on the leading duo, with Villeneuve now in race management mode. "I knew that to make the tyres and brakes last I had to slow the pace, make use of my straightline speed to keep ahead and not make any mistakes anywhere," explained Villeneuve.

On lap 61, Laffite outbraked Reutemann on the outside at the end of the pitstraight and now the poleman set his sights on the Ferrari. "The most powerful engine in the race faced the most effective chassis," reckoned Roebuck.

Laffite did indeed challenge hard, Villeneuve knowing where to defend and doing just enough to stave off his challenges. Such was the leader's slow pace in the closing stages that, with 14 laps to go, just 2.3s covered the top five: Villeneuve, Laffite, Watson, Reutemann, Elio de Angelis.

Laffite nearly got alongside into the last corner on the final lap, but Villeneuve was not to be denied. He crossed the line 0.22s ahead, with 1.24s covering the quintet.

For nearly an hour and a half Villeneuve had held the lead under increasing pressure. He had not made a mistake on a day when Jones, Pironi, Alain Prost and Nelson Piquet had.

"One of the finest drives I have ever seen," reckoned the legendary Murray Walker.

On the face of it, this wasn't a typical Villeneuve drive. But he showed exactly the sort of precision, racecraft and cool-headedness his critics claimed he lacked, while his sheer speed and opportunism got him the chance in the first place. It was a GP very few drivers would have won in the 1981 Ferrari.

PREVIEW

10 things to watch at the Goodwood Festival of Speed

Once again there's a stellar line-up in West Sussex, not least the return of Mansell mania, and George Russell taking to the hill in a Mercedes F1 car

PAUL LAWRENCE

The hill at '30'

This year's Festival of Speed will be the 29th edition since the first running in 1993, when a one-day event drew 25,000 spectators. Since then, the event has grown and grown and, but for being cancelled in 2020 due to COVID-19, would now be reaching its 30th edition. As ever, the centre of the action is the challenging 1.16-mile hillclimb course.

Hillclimbing at Goodwood actually dates back to 1936 when the grandfather of the current Duke of Richmond and Gordon hosted an event on the estate. The Festival of Speed pre-dates the return of racing to the Goodwood circuit and continues to draw a capacity crowd of 150,000. Within the course are a series of challenges, including the left-handed Molecomb corner and the sweep around the intimidating Flint Wall before the narrow and tunnel-like rush to the finish line.

A year ago it was Rob Bell who won the shootout in the McLaren 720S GT3 with a best of 45.01 seconds. If conditions are right, the pace will be stronger still this weekend.

MOTORSPORT IMAGES

George Russell to wow the fans

Britain's new Formula 1 star George Russell is the latest big name confirmed to be at Goodwood this weekend. Russell will attend on Sunday and is sure to be incredibly popular with the fans after his superb start to his first F1 season with the Mercedes team. He will be in action, too, handling a 2019 championship-winning W10 grand prix car on the hill.

Russell has thrilled UK fans by finishing in the top five in the first eight F1 races of 2022 and is currently outscoring team-mate Lewis Hamilton. Russell's appearance will be part of an array of current and very recent F1 cars due on the hill at 1220 and 1430 on Sunday.

Of course, Goodwood is all about the stars coming out to honour the story of the sport, with heroes from racing, rallying and two wheels all on hand. Former world champions Damon Hill and Mika Hakkinen will be there, along with ex-F1 drivers Rene Arnoux, Jacky Ickx, Jochen Mass, Hans Stuck and Arturo Merzario. Three-time Indianapolis 500 winner Dario Franchitti, meanwhile, will drive Gordon Murray's T50 supercar.

DOM GIBBONS PHOTOGRAPHY/MOTORSPORT IMAGES

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Mansell mania is back

The 30th anniversary of Nigel Mansell's Formula 1 world crown will be a central point of the Goodwood Festival of Speed. Mansell will jump into several iconic cars from his career, including the Williams FW14B that he drove in his 1992 title-winning season. Mansell, 68, will also handle a Lotus 91 and two Ferrari grand prix cars on the Sussex hill.

Mansell carved a place in British motorsport history during his F1 career as a gutsy and determined driver who overcame challenges and setbacks to get to F1 and prove his ability. A broken neck and the sale of his house to fund an F3 campaign never kept Mansell from realising his dream, and the fans loved him.

"I'm looking forward to getting behind the wheel of some of my cars again," says the man that the Italians called *Il Leone*. Goodwood fans will surely cheer him to the roof as he makes a relatively rare appearance at the wheel of GP machinery.

Chasing glory in the shootout

For the fans of competition, the Sunday afternoon shootout is a pinnacle of the Festival of Speed as the fastest drivers in the fastest cars compete against the clock for the honour and glory of posting the best time of the weekend. A wide variety of nearly 70 cars from across the weekend entry will get another shot at the hill, topped by six-time shootout winner Justin Law in his Group C Jaguar XJR-12D. For the audience, it's a wonderful conclusion to the event as the most spectacular cars and drivers push to the very limit.

For two decades Nick Heidfeld held the outright record of 41.60 seconds in a McLaren MP4/13. But that was finally topped in 2019 when French ace Romain Dumas (below) powered the all-electric Volkswagen I.D. R to the top of the hill in 39.90s in the first sub-40s run. This year's joker in the pack is the outrageous McMurtry Speirling electric fan car with 1000bhp per tonne and current British Hillclimb Championship leader Alex Summers and Max Chilton sharing driving duties.

JEP/MOTORSPORT IMAGES

GOLD AND GOOSE/MOTORSPORT IMAGES

Rainey's emotional return

Motorbike legend Wayne Rainey will be reunited with his 500cc World Motorcycle Championship-winning Yamaha YZR500 for the Festival of Speed. Rainey was left paralysed from the waist down in a 1993 accident at Misano but will ride his famous bike, adapted with hand controls, for the first time in 29 years.

Rainey, 61, will be joined by Mick Doohan and Kevin Schwantz, two of his greatest rivals, as well as fellow racer and team boss Kenny Roberts. "I never thought I'd have the chance to throw a leg over a grand prix bike again," says Rainey. "And I certainly never thought I'd have an opportunity to share a track with Kenny, Mick and Kevin. This could only happen at the Festival of Speed."

It will be a first appearance at Goodwood for the Californian, who won his three 500cc world titles with Roberts's official Yamaha squad."Wayne's determination to make this all happen is no surprise," says Roberts. "I can promise there will not be a dry eye in the house."

Electric Avenue

The all-electric future may not be everybody's idea of motoring utopia, but Goodwood continues to embrace this technology and will have a significant display of electric vehicles within its Electric Avenue.

Run for the second time, the focus on electric vehicles will cover a wide range of road machinery, from city cars to hypercars and SUVs. Tagged as 'the road to 2030', the display becomes increasingly relevant as the deadline for the end of the sale of fossil-fuel vehicles in the UK looms larger. Highlights should include the premiere of the Porsche 718 Cayman GT4 e-Performance.

Given that the outright hill record is held by the Volkswagen I.D. R Pikes Peak car, electric power is a now a significant part of the Festival of Speed weekend. Half a dozen electric competition vehicles will be in action on the hill in the 'Sparks of Genius' class, headed by the McMurtry Speirling and former hill record holder Nick Heidfeld in a Gen3 Formula E car from the Mahindra team. Meanwhile, the Extreme E off-road competition will have Odyssey 21 vehicles from the Andretti and Veloce teams.

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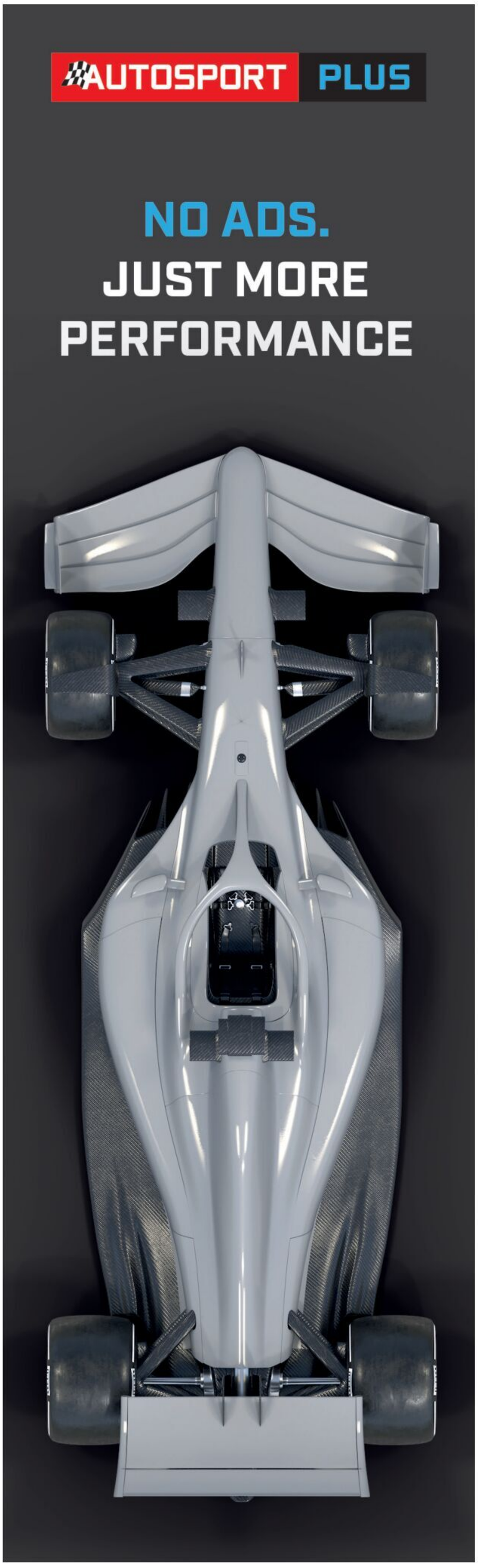

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M people moving on up the hill

The festival celebrates the 50th anniversary of the BMW Motorsport division, simply dubbed M for motorsport, which is a headline element of this year's event. It was launched in May 1972 to take BMWs and make them competition winners, starting with the first three-litre CSL and running through to recent and future Le Mans prototypes.

Half a century ago the BMW CSL 'Batmobile' brought BMW success in the European Touring Car Championship, and has been followed by many more iconic machines, including the evocative M3 touring car, the straight-six-engined M1 Procar, which had its own race series that included Formula 1 stars of the day, and more recent touring and GT cars as well as the 1999 Le Mans-winning V12 LMR. The wailing V12 prototype will be sensational on the hill.

Bringing the story up to date will be the new V8 M Hybrid LMDh prototype, which could have a Le Mans future. But the fastest M car on the hill could just be the 1978 BMW M12-engined March 782 F2 car of Ben Mitchell.

J BLOXHAM/MOTORSPORT IMAGES

The anniversary edition

Two major anniversaries will be honoured with dedicated classes of cars as the Festival celebrates 40 years of Group C racing and 75 years of Ferrari. A sublime group of 30 Ferraris will tell the story of the Prancing Horse, from a 1947 125S through to this year's 488 GT3 car. Standouts include two 156 'sharknose' F1 car recreations, a 250 GTO from the Bamford collection, Marino Franchitti driving a 512S, Derek Bell in a 365 GTB/4, Marc Gene in an F60 grand prix car from 2009, and Nigel Mansell at the wheel of a rare 639 F1 test car from 1989.

More than a dozen Group C cars will honour the 40th anniversary of the start of one of the best-loved eras in international sportscar racing, with machines from Porsche, Lancia, Jaguar, Mercedes, Aston Martin, Nissan and Ford. Drivers Henri Pescarolo (Porsche 962), Bell (Porsche 956) and Emanuele Pirro (Lancia LC2) will be the crowd-pleasing stars, but historic and modern prototype racing ace Alex Brundle, son of F1 and Group C racer Martin, will be quick in a Sauber-Mercedes C9.

Rally stage action

Now firmly established as an integral part of the Festival of Speed, the rally stage will host lots of off-road action, with a key theme being a celebration of the 40th anniversary of the introduction of the ill-fated Group B regulations. The best Group B cars on hand, from a category that was banned after less than five years as simply too dangerous, will be the Peugeot 205 T16 and the Audi Quattro, while several MG Metro 6R4s will deliver a wonderful soundtrack.

A wide array of rally cars, from as early as 1966, will track this branch of the sport across half a century and take the story up to date with modern R5 and Rally2 cars from British championship contender Tom Williams, the flamboyant Martin McCormack and young prospect George Lepley. Elsewhere, on the main hill half a dozen Lancias, from the Fulvia of the late 1960s to the Group A Delta Integrale of the early 1990s, will relive the Italian company's glory days. A Stratos and an 037 will also showcase more than two decades of Lancia rallying success.

J BLOXHAM/MOTORSPORT IMAGES

The cutting edge

While much of the Goodwood ethos is to celebrate the history of the sport, the Festival of Speed has always been a forward-facing event. It is a chance for British fans to see some of the latest cars and bikes from international motorsport. Bringing the endurance racing story up to date will be the Glickenhaus-Pipo 007 Hypercar, which finished third at Le Mans earlier this month. Current cars from GT racing, the British Touring Car Championship, Formula E and rallying will all be strutting their stuff on the hill.

At the very cutting edge will be the McMurtry Speirling, a one-seat, 1000bhp electric-powered track special with massive fans in the rear to generate huge amounts of downforce. Not since the 1978 Swedish Grand Prix-winning Brabham BT46B F1 design appeared in the 1979 Gunnar Nilsson Memorial Trophy time trial at Donington Park has a fan car competed in motorsport. That will all change at the weekend and it promises to be an incredible spectacle. Just like the rest of the Festival of Speed!

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- Strong experience in complex multi-system electronic architectures
- Strong working knowledge of data analysis and calibration software used in Formula One
- You have demonstrated an ability to learn continuously, work autonomously, and make decisions
- You are comfortable working in a rapidly changing environment with dynamic objectives
- You have demonstrated your ability to work effectively within teams of technical and non-technical individuals
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- Native or fluent English written and spoken. French optional, willingness to learn the language highly recommended

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- the set-up and execution of test and training programmes for the Red Bull Junior Team drivers , to support them in maximising their potential and enhancing their performance.
- Developing the Red Bull Junior Team drivers' understanding of vehicle dynamics as well as the design, development, manufacture and operation of race cars. An important element of this role is pre-event preparation and simulation, on-event analysis and direction and post event reports.
- You will be required to work with internal and external resources to ensure that the simulator and modelling specifications are suitable tests. In addition, you will be required to log and report all concerns and faults with the simulator to enable effective preventative maintenance and optimisation of running time, whilst ensuring that the facilities are kept clean and in a presentable manner at all times.

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CFD Engineer
Alpine F1 Team

The successful candidate will possess experience of applying large scale commercial or open source CFD packages, and in particular OpenFOAM, on engineering applications in the automotive and motorsport sectors. You must be flexible in approach to respect tight deadlines and be willing to contribute to team success.

The skills required are:

- Degree level education in engineering, mathematics or natural sciences.
- Experience in CFD application, ideally within a motorsport or automotive environment.
- Excellent IT literacy with respect to CAE, including familiarity with multiple OS environments, scheduling and scripting. Python is especially useful.
- Experience of common CAE tools, in particular CATIA, ANSA, OpenFOAM and ParaView. Prior experience of OpenFOAM is essential to be considered for this role.
- Skilled in trouble-shooting and problem solving.
- Excellent communication skills.
- Capable to work under pressure and to tight timescales.

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HISTORICS Strong interest in new HRDC Gerry Marshall series

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McLaren's new car will make its first public appearance at Goodwood

McLAREN

New McLaren Artura GT4 hits Goodwood

GT

McLaren Motorsport will unveil its new Artura GT4 race machine to the public for the first time this week at the Goodwood Festival of Speed.

The new car, which is based on the marque's road-going machine, will follow in the footsteps of the McLaren 570S, which has enjoyed success across a number of GT categories since it was released in 2015, including in British GT.

The 570S took two GT4 wins during its maiden British GT season in 2016 with Sandy Mitchell and Ciaran Haggarty for Ecurie Ecosse. More success followed in 2017 when Graham Johnson and Mike Robinson used a 570S during the second half of the season, guiding them to the GT4 title. Although there have been race wins since, the machine has struggled to match the performance of other cars in the series, notably the BMW M4 and Aston Martin Vantage.

The Artura is a significant step up from its predecessor – it is 100kg lighter and features a V6 engine that is more fuel efficient and lighter than the previous GT4 V8, while it incorporates an aerodynamic package that offers greater downforce.

"The Artura GT4 is the second race car to be built from the ground up by McLaren Automotive's Motorsport division," said Ian Morgan, director of motorsport at McLaren Automotive. "Based on the revolutionary new McLaren Artura, it represents a significant step up from the outgoing 570S GT4, itself a hugely successful competition car, which has achieved many race and championship wins with our customer racing teams.

"With lighter weight, extremely precise handling characteristics and enhanced durability – as well as the packaging and efficiency advantages and all-round serviceability for mechanics of the new V6 powertrain – the Artura GT4 will set new class standards, as we are already seeing from our extensive test and development programme."

McLaren factory driver Rob Bell, winner of last year's FoS timed shootout final in the McLaren 720S GT3X, will take the Artura up the Goodwood hillclimb.

Artura replaces 570S, which has had success over past few seasons

JEP

IN THE HEADLINES

DE PAUW STAYS AT RAM

Ulysse de Pauw will continue with RAM Racing for the remainder of the British GT Championship this year. The Belgian replaced Jamie Caroline alongside John Ferguson at the previous Donington Park round, and helped bring their Mercedes-AMG GT3 home in seventh overall and second in Silver-Am. "John and I will be aiming to win Silver-Am races in the near future and my goal is to help him finish as high in the championship as possible," he said.

GOUGH'S BEC DEBUT

Formula Ford stalwart Ian Gough made his debut in the British Endurance Championship last weekend at Silverstone, taking first place in class and fifth overall. Gough, 39, shared a Porsche Cayman GT4 alongside Euan Hankey in the two-hour race on the Grand Prix layout. "I jumped at the chance to drive for RaceLab this weekend, as I scope a full season in either British GT or Porsche Sprint Challenge next year," he said.

CLASSIC TRIBUTE FOR DRON

The Silverstone Classic and Motor Racing Legends will pay tribute to renowned touring car driver Tony Dron, who passed away last year. The Tony Dron Memorial Trophy will take place on Saturday (27 August) for MRL's Historic Touring Cars. "I can think of no more fitting tribute to Tony than a grid of historic touring cars lining up at Silverstone," said Dron's wife Charis. "It's a circuit to which Tony had a huge emotional attachment and, even better, many of the entrants will have been his friends or racing rivals."

FESTIVAL ENTRIES OPEN

Entries for the 2022 Formula Ford Festival have now opened. The British Racing & Sports Car Club-run event will take place on 22-23 October on the Brands Hatch Indy circuit, with 108 spots available. Last year's event was won by Jamie Sharp (below).

JEP

Strong turnout for new HRDC Marshall Trophy

HISTORICS

A total of 29 entries were attracted for category's inaugural Snetterton race

RICHARD STYLES

The Historic Racing Drivers Club's inaugural Gerry Marshall Trophy race was well received at Snetterton last weekend, with an entry of 29 cars and hopes of a second event later this year.

The new series for pre-1983 Group 1 and 1.5 touring cars, named after the late saloon racing legend, was founded by family friend Julius Thurgood, who is aiming for "three or four" races in 2023.

"This is an era I grew up with," said Thurgood. "I raced against Gerry in that period and he became a very close friend of mine. Gerry is symbolic of this period. People like to see these exciting-looking cars with period liveries. We are very keen that the cars are put out on track in a very authentic way."

Marshall's son Gregor, a series ambassador, was in action in a 1974 Vauxhall Firenza. Despite retiring from the 45-minute race with an oil leak, he was happy with how the launch went.

"Pleased and proud – fantastic turnout of cars, fantastic turnout of people," he enthused. "Next year was the plan. Today was a proof of concept, to make sure we've got a good grid, good racing. Everyone has enjoyed it so much that people are asking, 'Can we have another one this year?' It's really positive, but we need support, we need another grid of 25 to 30 cars."

Series backer Jim Morris, who was out in his father's 1982 VW Golf GTI, added: "I have an affinity for the Group 1s because my dad raced in that back in its heyday between 1979 through to 1982 when Gerry was doing it. The cars are around, we know there are 60 cars. We need this family paddock [atmosphere], like the series was. I hope we can recreate that."

STEVE WHITFIELD

Smalley lands British GP Supercup deal

PORSCHE SUPERCUP

Porsche GB Junior Adam Smalley has agreed a late deal to join the British Grand Prix-supporting round of the Porsche Supercup at Silverstone next weekend.

The reigning Ginetta GT4 Supercup champion will have the chance to test himself against the best Porsche drivers in the world after getting an opportunity from French squad CRLT. Although he will be run under the team's banner, Smalley will be working with his regular mechanics and engineers from his Redline Racing Carrera Cup GB operation.

"Growing up, to race at an F1 weekend was always a dream and to be given the opportunity, especially in my first year racing a Porsche, to race in the Supercup is a dream come true – it's going to be a very special weekend," said Smalley, who is first going to be representing Porsche at this week's Goodwood Festival of Speed.

"It's going to be a challenging weekend, the Supercup is the pinnacle of one-make racing, but I can't wait. The expectations for the weekend are realistic, it's about enjoying it. It's not every day that an opportunity like this comes up."

Smalley admits he is still learning more about the 911 GT3 Cup car every time he drives it and therefore says the Supercup outing will be another opportunity to gain more experience.

"I'm up against the best drivers in the world and I will try to learn what I can from them and take it back to my GB campaign," he said.

Smalley currently sits third in the Carrera Cup GB points having already taken three overall podiums in his first season.

STEPHEN LICKORISH

Dibden won the damp Monoposto F3 opener

MICK WALKER

Honours even as Monoposto again appears at HSCC event

MONOPOSTO

Four different winners across two strongly contested double-headers at Donington Park last weekend marked the long-serving Monoposto Racing Club's second appearance on an Historic Sports Car Club programme this season.

In the Formula 3 class, Ashley Dibden (Dallara F301) prevailed after Tony Bishop spun down to 10th in Saturday's damp opener. Aided by a safety car, Bishop recovered to second, ahead of Neil Harrison, then lost a place on countback when the race was red flagged. Dallara drivers filled the top eight, fifth-placed Jason Timms winning the motorcycle-engined split in his 301.

Bishop (F307) aced Sunday's dry stanza — restarted when Nick Catanzaro's Vauxhall Lotus, Mike Hatton's Dallara and Juan Moreno's Formula Renault were beached in the Redgate gravel at the start — beating Dibden, with Timms and rival Martin Wright third and fourth. Jim Spencer (Reynard 883) was uncatchable in Mono Classic.

The multi-class second grid's opener mirrored the first race's pattern with yellows and ultimately a red. Irishman David Heavey's Leastone defeated Mono 2000 winner James Rimmer (Dallara F392) at the close.

Triple Snetterton winner Mark Betts led the sequel but lost out to Billy Styles. Heavey, from the back after a technical infringement, prevented a Jedi clean sweep by passing Nigel Davers — whose crash at the chicane on Saturday ended the race — at the last gasp. Bryn Tootell (Van Diemen RF01) claimed Mono 2000 in sixth overall.

MARCUS PYE

Smaller entry for C1s at Anglesey

C1 RACE SERIES

The C1 Race Series suffered a lower than usual grid for its latest race — a four-and-a-half hour contest at Anglesey last weekend — with organisers believing its proximity to the Silverstone 24 Hours was a factor in the smaller entry.

Only 18 cars took part in North Wales, compared to the 61 crews that participated in the C1 24 hours last month.

"It probably just came at the wrong time for our competitors following the Silverstone 24 Hours, their most expensive weekend of the year," said C1 boss Robin Welsh. "Anglesey is the hardest track to get to for most people and next is one of our most popular at Donington, which has an entry already exceeding this one, with three weeks to go."

As well as the cost of fuel for travelling to and from the circuit rising rapidly, crews also used more fuel at the 24-hour race this year due to fewer safety car interventions.

"I believe it was just a hiccup this weekend and maybe it was a mistake on our part to run this race on this date, but we will learn from it," Welsh concluded.

He also announced that a new alloy racing wheel is available and will be phased in, with Citroen no longer manufacturing the original steel wheels.

PETER SCHERER

IN THE HEADLINES

MORGAN MAINTAINS FORM

Pete Morgan's strong season in Classic Stock Hatch continued with two more wins at Pembrey in spite of carburettor issues with his Ford Fiesta XR2. "We were struggling with straightline speed here and my main rival, Chris Dear, got very close in race two," said the 61-year-old championship leader. "I'm expecting to struggle at Snetterton so the two wins here are very important."

BAILEY TO RACE VITESSE

Historic race and rally driver Jerry Bailey has added a Group 1 Rover Vitesse to his stable and plans to debut the car in the Vince Woodman race at Castle Combe in September. "It's not quite ready and there's a little bit of work to do," said Bailey. "But there are lots of places to race it and we'll particularly do the Gerry Marshall races with the HRDC." Bailey already races a Lotus Cortina and rallies a Ford Escort Mk2.

MORLEY'S SUPERKART TRIO

Division 1 Superkart driver Liam Morley was on top form at Anglesey last weekend for the second Motorsport UK British Superkart Championship event. He raced away on Saturday to win by just over six seconds, setting a new lap record in the process, before bagging two more victories on Sunday and lowering the lap record again to 1m22.442s. He is now level on points with Lee Harpham with one round remaining. Harpham had to play second fiddle to Morley all weekend, with reigning champion Ross Allen taking a trio of third places.

DOBLE'S UNBEATEN RUN ENDS

BMW Compact Cup championship leader Mikey Doble arrived at Anglesey with a 100% win record. But, after being beaten in race one by Guy Davis (below left with Doble), his engine let go in race two while leading. "We had another engine but not the time to fit it," he explained after struggling in the final race.

BOURNEPHOTO.CO.UK

New MK Cup200 series planned in Sports 1000

750MC

The 750 Motor Club demonstrated its new one-make MK Cup200 concept with a single-car entry in its Sports 1000 races at Pembrey last weekend.

The car is a collaboration between constructor MK and RLM, which is providing a spec 1340cc Hayabusa engine. It also has a sequential six-speed gearbox and sealed ECU, while weighing the same (580kg) as a Sports 1000 car and using the same Yokohama AO48 tyre. Prices are anticipated to be £28,000 in kit form or £35,000 built and ready to race from RLM.

The 750MC's Sports 1000 coordinator Thomas Langford said: "The plan is to run a class for the MK Cup200s within Sports 1000s in 2023 and, who knows, maybe a standalone series for them in 2024. Sports 1000s is the logical place to introduce the car as the category has a history of '7-style' cars, which the MK Cup200 carries."

Former Sports 1000 racer Dave Watson drove the car at Pembrey and praised its performance, particularly in wet conditions, as "forgiving". In the rain, Watson qualified the car – notable for its torque – 11th overall against the Sports 1000 field before finishing seventh. In Sunday's dry second and third races he was 13th and 12th.

Watson raced car built in collaboration by MK and RLM

STEVE JONES

Two models are expected to appear in the next rounds at Donington Park, with Ma7da champion Danny Andrew and former F1000 title winner Matthew Booth at the wheel.

● Veteran racer John Village was also in action at Pembrey at the weekend. He added the Welsh venue to the list of UK circuits at which he has won in his lengthy career, with two Historic 750 Formula victories in his self-built Village V2. "I still don't know which way this circuit's going in the dry never mind in the rain we had on Saturday," said the 69-year-old former European FF1600 champion.

CARL McKELLAR

Hyett races replica of Hill Ginetta in Guards Trophy

Car is the replica of G4 raced by Hill in 1964

MICK WALKER

HISTORICS

Former Le Mans competitor Ross Hyett is racing a replica of the Ginetta G4 driven by Graham Hill in 1964 this season.

The car was commissioned by Ginetta owner Lawrence Tomlinson in tribute to the G4 that Hill raced at Goodwood and several other venues.

Tomlinson owns the original car but was keen to have a replica that could be raced and asked Ginetta founders, the Walklett brothers, to build one. It has now been entrusted to Hyett for the Guards Trophy, and was classified 20th in the latest race at Donington Park last weekend.

Looking ahead, there is also an ex-Chris Meek Ginetta G10 project that is under development as part of the Ginetta Heritage set-up.

The G4 is being run by former single-seater team boss Trevor Foster, who was Jordan F1 managing director and has recently set up under the Pegasus Classic Engineering banner.

PAUL LAWRENCE

Coates to join Cooper class grid at Croft

MINI CHALLENGE TROPHY

Mini Challenge JCW frontrunner Max Coates will swap to the Cooper class this weekend in order to race at his local Croft circuit.

Coates will be a guest driver in the Mini Challenge Trophy when it makes the second of three appearances on the British Touring Car support bill in North Yorkshire, making his series debut with his regular JCW team, Graves Motorsport.

"When the JCW calendar was announced and it didn't include a trip to Croft, I've been looking around for an opportunity to do a race because I love competing at my home circuit," he said. "I would be at the Trophy round in my coaching role, so I thought, 'Why not go out and join them on track?' Obviously I've seen the Coopers racing at close quarters and they look like a real hoot, so I'm looking forward to getting out on track and racing one myself."

Coates is currently fifth in the JCW standings with one win so far this year.

JEP/MOTORSPORT IMAGES

Coates will get to race at local Croft circuit

Mazda MX-5 ace Harding makes front-wheel-drive debut

CIVIC CUP

Three-time Mazda MX-5 Supercup runner-up Jack Harding made his debut in the Civic Cup at Brands Hatch last weekend.

After missing the opening round while he was getting married, Harding plans to contest the rest of the season in a car run by Anthony Kane's AK Motorsport squad. It is his first campaign in front-wheel-drive machinery.

"It got to a point in the Mazdas where I'd kind of achieved everything I could, but I just never managed to take that championship," said Harding. "I've enjoyed my time in it, but I just wanted a bit of a fresh challenge. I don't want it to be easy, I want a tough challenge and to learn something new."

Harding qualified 10th of 33 cars. After dropping back at the start of the first race, he climbed to ninth, earning a front-row start for race two in which he finished fourth, before repeating that result in the finale.

"We made a change to the car and it seemed to work," he said. "It improved the handling but it went off quicker, so we just need to compensate for that."

MARK PAULSON

JEP

Harding took a best result of fourth on Civic Cup debut

IN THE HEADLINES

McARTHUR'S HAWKE MOVE

Tom McArthur switched to a Hawke DL2 from the Hadfield stable for the Classic Formula Ford races at Donington Park last weekend, having previously raced the team's Merlyn Mk20. "We built it five or six years ago," said James Hadfield of the Hawke. "I raced it once at Brands, and Tom has won with Merlyn, so he decided to try this." McArthur led the second Classic race from start to finish with the Hawke only to be penalised over track-limits issues.

WHYMAN BACK IN MUSTANG

Former Clubmans driver Keith Whyman ended more than a decade away by running his Ford Mustang in Historic Road Sports at Donington last weekend. "We blew the engine in 2010 and it took ages to find a good engine builder," said Whyman, who finished 10th. "We got back out at the Silverstone Classic last year, and the brakes failed in qualifying so we didn't start. Donington was my first race for 12 years."

BAILEY ENDS 45-YEAR WAIT

Nick Bailey was ecstatic to win the Sports 2000 class in Sunday's Thundersports race at Donington Park, beating Swiss rival Jurg Tobler in a Royale S2000M 1-2. "That's my first class win after 45 years of trying," said the Cheshire-based driver. "I rolled a Mallock Mk16 into the gravel at Redgate on my debut here, so it feels appropriate."

BALFOUR'S BRILLIANT BOW

Dan Balfour made a sensational racing debut at Donington on Saturday, finishing fifth in the Guards Trophy race in his newly acquired Chevron B8 (below). Following just two test days, Balfour mastered treacherous conditions to finish third in class in the ex-David Good/Reg Phillips chassis DBE-38, previously owned by Simon Leighton, John Taylor, triple Autosport Three Hours winner Nick Fleming and Paul Ugo. Gareth Burnett of Pace Historics is running the car.

PAUL LAWRENCE

STUART WING

A delightful Summers weekend for Alex at Doune

BRITISH HILLCLIMB

Alex Summers turned up the heat in his bid for the British Hillclimb Championship with a monster weekend at Doune in Scotland.

With four run-offs in two days, it was an important event in the title race as Summers, Wallace Menzies and Scott Moran emerge as the key title contenders. Three wins, one second and a new hill record made it Summers' weekend.

Summers was able to use his blistering form of Gurston Down and Shelsley Walsh in his IndyCar-engined DJ Firestorm. He is driving the package superbly and, in a weekend that offered 44 points for winning all four run-offs and breaking the old record each time, Summers scored 42.

Moran continued his excellent recent form in Graham Wynn's Gould GR59 to win Saturday's second run-off and bag two seconds on Sunday. But for reigning champion Menzies (GR59), it was a weekend when he just couldn't match Summers' pace.

A second and three thirds was a decent result, but Menzies will have wanted more from a weekend that has given Summers a handy points advantage.

The existing outright hill record, set by Sean Gould in 34.67s, was likely to be bettered and it was Summers who did just that, topping the mark on three of his four run-offs.

He opened with a 34.38s but dropped to a 35.38s later on Saturday to finish behind Moran in the second run-off. Summers then bounced back on Sunday with a 34.28s and his closing shot of the weekend was a 34.21s.

Menzies chased as hard as he could but, on this occasion, had no real answer to the pace of Summers. For two years, Menzies and Summers have usually been separated by a couple of points but Summers left Doune with an 11-point lead as the BHC season reached its mid-point.

Behind the top three, Trevor Willis and Dave Uren picked up the next points, while notable performances from the smaller engined cars included Paul Haimes, who took a fourth overall on Saturday in his 1.3-litre turbocharged Gould GR59 and David Warburton, who claimed a fifth and a sixth in his 1.6-litre version.

PAUL LAWRENCE

Vatanen stars as Donegal celebrates 50th anniversary

RALLYING

The biggest rally in Ireland — the three-day Donegal International — celebrated its 50th anniversary at the weekend with a demonstration run from former winners headlined by world champion Ari Vatanen.

Driving a BMW M3 over Sunday's Atlantic Drive, the Finn recalled competing on the same stage for the first time back in 1975 before winning in 1978 at the event that, over its history, attracted the likes of Sebastien Loeb, Ken Block and Colin McRae. In fact, the McRae name returned with Colin's nephew, Max, competing in Ireland for the first time in a Ford Fiesta ST, finishing 53rd overall and third in class, noting the stages were among the toughest experienced.

Callum Devine led into the final day by 17.7 seconds but crashed into a bale chicane on Gartan and retired with radiator damage. That briefly promoted Welsh visitor Matt Edwards, in a Crozier Motorsport-run Citroen C3 Rally2, to the front before he too crashed out.

Hyundai i20 R5 driver Josh Moffett has therefore joined brother Sam, who was second this time, as a Donegal winner in part thanks to Alastair Fisher picking up a puncture on the final loop, which he entered just a second back from the eventual victor. The Circuit of Ireland winner dropped to fifth behind Meirion Evans and Declan Boyle.

WILLIAM NEILL

Vatanen, the 1978 winner, drove an M3 at the weekend

WILLIAM NEILL

Reigning champion Kent leads the way during TCR UK Brands Hatch action

JEP

It's Kent in Kent as champ kickstarts his title defence

BRANDS HATCH
CTA
18-19 JUNE

Two drivers at opposite ends of TCR UK's experience spectrum had most to smile about after three hard-fought races at Brands Hatch. Series stalwart Lewis Kent took a win and two further podiums to kickstart his title defence, while Alex Ley claimed a maiden victory on only his second race weekend.

Kent tucked his Hyundai Veloster in behind younger brother Bradley in Saturday's restarted wet race. But Kent Jr was struggling to turn his Hyundai i30 and a mistake at Paddock Hill Bend on lap three of 19 let through the #1 machine and Chris Smiley's Restart Racing Honda Civic FK7. Despite losing their five-second advantage to another safety car, Kent and Smiley remained largely untroubled, keeping a charging Callum Newsham (Cupra) at bay as their rain tyres wilted.

Ley slipped back from his front-row start to finish sixth, but the 17-year-old Fiesta Junior graduate's qualifying pace gave him pole for Sunday's finale. He converted it into a 5s victory, contending with another complete restart and a safety car, and taking full advantage of the series' compensation weight rules, which meant his i30 ran 30kg lighter than the other frontrunning Hyundais at this event.

Track-limits penalties dropped Bradley Kent to 15th from second, which his brother would have inherited but for an outside pass by Adam Shepherd's Jamsport i30. Shepherd, running a new engine, had to borrow a driveshaft from Ley's Daniel James Motorsport squad following a hit on the frantic opening lap of the reversed-grid race, won by Power Maxed Racing's Jac Constable.

Ant Whorton-Eales's Subaru led that until almost half-distance when Bradley Kent squeezed past at Clearways, and Constable's Cupra followed. But Kent and Whorton-Eales were both stopped by tyre failures — likely a legacy of earlier contact — and Isaac Smith and Lewis Kent climbed to podium finishes.

Lost Friday track time after a clutch problem hampered points leader Max Hart's set-up. After qualifying 12th, typically feisty drives yielded no better than fifth as Lewis Kent and the consistent Smith dented his advantage. Smiley also remains in contention, despite retiring from race two after contact dislodged his water-pump drive belt and feeling the effect of 40kg compensation weight.

For Lewis Kent and Alex Ley in TCR UK, read Alistair Camp and Will Redford in the Civic Cup. After a challenging opening round at Cadwell Park last month, reigning champion Camp hit back with two wins.

Camp was another reigning champ to take the victory spoils in Kent, in Civic Cup

JEP

WEEKEND WINNERS

TCR UK
Race 1 Lewis Kent (Hyundai Veloster)
Race 2 Jac Constable (Cupra TCR)
Race 3 Alex Ley (Hyundai i30 N TCR, below)

CIVIC CUP
Races 1 & 3 Alistair Camp (EP3)
Race 2 Ben Sharpe (EP3)

JEP

For full results visit: tsl-timing.com

He led the opener from lights to flag, building a margin as Matt Luff rebuffed Redford, who secured a maiden podium, during the early laps.

Luff led Area Motorsport team-mate Camp until midway through race three when Camp tried the high line at Paddock, trusted Luff to give him room around the outside at Druids and completed the move into Graham Hill Bend. Redford was again third, following a swift clutch change by his Kinetic Motorsport crew. The 17-year-old prised an opening past Morgan Bailey at Clearways, belying his limited experience, which amounts to half a season in Junior Saloons.

Returnee Ben Sharpe won the reversed-grid race in a one-off guest outing with Pro Alloys Racing. Fighting a loose rear end after a damaged damper had prevented further set-up refinement, Sharpe held off Bailey and Ryan Bensley. Camp only managed sixth after missing a gear, which also delayed Luff, as they fought through from row five.

MARK PAULSON

Richardson wins Thundersports race on Bonnier's anniversary

DONINGTON PARK
HSCC
18-19 JUNE

Fifty years to the month after Swedish veteran Jo Bonnier lost his life at Le Mans in a Cosworth DFV-powered Lola T280, Mark Richardson charged his ex-Bonnier 1790cc T290 to victory in Saturday's wet Thundersports race at Donington Park.

Shaking it down post-rebuild for next month's Le Mans Classic, the celebrated RHS Chelsea garden builder, whose father Peter and uncle Jeremy competed against Bonnier in period, qualified third but tactically left the pitlane late for the rolling start. He made light work of passing Kiwi Warren Briggs's ex-Fred Parkhill Donnybrooke Can-Am-contending McLaren-Chevrolet M8E for the lead on lap six of 20, before streaking away.

Mission accomplished, Richardson missed Sunday's dry sequel, from which Briggs retired with a lack of drive exiting Redgate. Simon Watts's stunning ex-Ian Scheckter/John Watson Chevron B26 went ahead, beating Gary Furst's ex-Karl von Wendt Lola T212 in a Team Gunston 1-2 once Frank Bradley pitted the Dodkins brothers' ex-Helmut Kelleners Interserie March-Chevrolet 717 with a slipping clutch. Watts drove beautifully for his maiden victory in the Chevron and a satisfying double for John Danby Racing, which also ran Richardson. Mark Witherspoon (Tiga SC80) and Nick Bailey (Royale S2000M) shared Sports 2000 honours.

Benn Tilley (Formula Atlantic Modus) and Michael Lyons (F5000 Lola-Chevrolet T400) scrapped for Aurora Trophy gold amid the spray. Young Tilley made two seconds between Redgate and McLeans, which Lyons expunged on the blasts from Coppice to the chicane and past the pits. No respecter of reputations, Tilley sailed imperiously round Lyons at Redgate having been outgunned. When they touched there on lap eight, the little Modus rotated and continued, but a red flag advantaged Tilley on countback. Austrian Martin Friedl (Brabham BT40) drove well to third.

Somewhat miffed, Lyons lapped the field on Sunday, cutting a superb 1m03.802s (111.66mph) best lap, before pulling off after Coppice when his engine threw a rod, triggering reds again. Not classified, therefore, the result was rolled back to when Tilley had briefly repassed Mike Bletsoe-Brown, whose F2 Chevron-BDG B27 spun under acceleration at Saturday's rolling start. Behind Friedl and Stephen Barlow (F3 Ralt-Alfa Romeo RT3), the inspired Keith Norris – who qualified his ex-Mike Walker F5000 McLaren M10B in the wet on slicks, then sat out race one – shadowed Frank Lyons (F5000 McRae GM1) home sixth.

The best 1000cc Historic F3 championship field in ages, 23 starters, was dominated in contrasting conditions by teenager Samuel Harrison in SpeedSport's Chevron B15. Ian Bankhurst (Alexis Mk8) and reigning champion Jeremy Timms (ex-works/Reine Wisell B15) shared the other podium places, pursued by Simon Armer (March 703) and on Sunday Steve Seaman (Brabham BT21) up from 16th.

In a Historic FF1600 'war of the roses', Yorkshireman Harrison won Saturday's soggy battle from Lancastrians Tom McArthur (Titan Mk4, docked 10s for a yellow-flag infringement) and Callum Grant, who spun uncharacteristically. On Sunday, following a safety car, they were caught by Jamie Vinall-Meyer (Jamun T3), who started at the back having collided with McArthur the previous day. Into the chicane for the final time, McArthur moved left to avoid Harrison, who arrived via the grass, while Grant straight-lined it to avoid a melee, losing momentum.

An ecstatic Vinall-Meyer burst through the resultant gap to take the chequer. When he was excluded for failing a 40mm rideheight test and Harrison and McArthur were bumped to 13th and 14th for multiple track-limits violations, Grant was declared winner from Chris Porritt (Merlyn Mk20) and Ross Drybrough (March 709).

Richard Tarling – back in Steve Deeks's Crossle having shattered his SDC Royale RP26's gearbox in testing – seized an opportunistic Saturday Classic FF1600 victory, passing Henry Chart (Van Diemen RF81) and McArthur (in James Hadfield's ex-Gary Magwood Hawke DL2) with a lunge into Redgate after a caution period. McArthur blitzed Sunday's sequel, only to fall foul of track limits again, like chaser Chart, thus Rick Morris was accorded victory from Jordan Harrison (Lola T540E). Unnecessary contact with Harrison put Tarling out with suspension damage after Linton Stutely's Enigma team had changed his engine overnight.

Historic FF2000's 'Simms and Fennymore Show' continued, with Graham ambushing Benn into the chicane late on in race one – postponed

Richardson won in ex-Bonnier Lola, 50 years after Swede's death

Tilley had a close scrap with Lyons but emerged with two Aurora wins

Harrison soon shot clear from large Historic F3 field

ALL PHOTOGRAPHY: MICK WALKER

to Sunday morning – for his fourth successive win after Simms caught a backmarker at McLeans, then "screwed up at Coppice". When the duo ran wide at Redgate after the second start, 1979 Euroseries champion Adrian Reynard shot past and led gloriously for four laps. Simms then pounced to stem Fennymore's run, with Reynard third.

Buoyed by meeting new grandson Lucas on Friday, and with Cadwell's brake issues sorted, Neil Wood scored a memorable first Historic Touring Car double in his pristine 1500cc Ford Anglia. Mark Watts (Mustang), poleman Bob Bullen (until his Lotus Cortina's alternator failed in the opener) and Mini drivers David Ogden and Nick Paddy made it tough, but more enjoyable.

Caterham ace Stephen Nuttall upset the Guards Trophy formbook on his series debut, walking on water in the ex-Andrew Hill Chevron B8, leaving Westie and Ben Mitchell (B8) and Rob and Ben Tusting (Lenham P69) behind. John Davison hounded down fellow Elan man Sam Smith to be first GT home, sixth behind impressive race debutant Dan Balfour (B8).

Kevin Kivlochan overcame severe juddering from his front suspension to win the Historic Road Sports round as Morgan +8s filled the top four places, chased by Jonathan Stringer (Lotus 7 S2). Julian Barter's TVR 3000M bested Jim Dean (Europa) atop a large '70s set, in which Jez Clark (Elan) fell behind John Williams (Porsche 911SC), and Gary Thomas (7 S4) pipped points leader David Tomkinson (TVR Vixen) in an epic class duel.

Spencer McCarthy and Barry Webb (B-Sport) topped Classic Clubmans classes, Webb after Adam Paterson hit Guy Sheppard's Rawlson at the first corner and went quarrying, causing a safety car.

MARCUS PYE

There was no stopping Wood's Anglia in Historic Touring Cars

WEEKEND WINNERS

THUNDERSPORTS
Race 1 Mark Richardson (Lola-FVC T290)
Race 2 Simon Watts (Chevron-BDG B26)

AURORA & GEOFF LEES TROPHY
Races 1 & 2 Benn Tilley (Modus-BDA M1)

HISTORIC F3
Races 1 & 2 Samuel Harrison (Chevron B15)

HISTORIC FF1600
Race 1 Samuel Harrison (Merlyn Mk20)
Race 2 Callum Grant (Merlyn Mk20A)

CLASSIC FF1600
Race 1 Richard Tarling (Crossle 25F)
Race 2 Rick Morris (Royale RP29)

HISTORIC FF2000
Race 1 Graham Fennymore (Reynard SF81)
Race 2 Benn Simms (Reynard SF77)

GUARDS TROPHY
Stephen Nuttall (Chevron-BMW B8)

HISTORIC TOURING CARS/ECURIE CLASSIC
Races 1 & 2 Neil Wood (Ford Anglia)

HISTORIC ROAD SPORTS
Kevin Kivlochan (Morgan +8)

'70s ROAD SPORTS
Julian Barter (TVR 3000M)

CLASSIC CLUBMANS
Spencer McCarthy (Mallock Mk20B/21)

MONOPOSTO F3/1400/CLASSIC/1600
Race 1 Ashley Dibden (Dallara F301)
Race 2 Tony Bishop (Dallara F307)

MONOPOSTO MOTO 1000/2000/1800
Race 1 David Heavey (Leastone 1000)
Race 2 Billy Styles (Jedi Mk6/7)

For full results visit: tsl-timing.com

When the rain dried up, Hewlett was driver to beat

Hewlett grabs double Civic win at eventful meeting

PEMBREY
750MC
18-19 JUNE

Jake Hewlett's drives to a pair of Type R Trophy wins were among the notable performances during the 750 Motor Club's Pembrey event — its first at the Welsh circuit in four years — which comprised a packed programme of 24 races.

Saturday's action was held in abysmally wet conditions and contributed to seven red-flag stoppages in one afternoon before drier, warmer weather prevailed on the Sunday.

Hewlett's two wins came on Sunday, the first achieved in slightly unfortunate circumstances. As they rounded Dibeni for the first time, his and Ash Moor's cars made contact and the latter was sent spinning hard into the barriers to bring out red flags.

At the restart, Mark Dicken led from the reversed-grid pole until a wild spin exiting Senna dropped him down the order. Hewlett emerged from the avoidances in the lead and there he stayed to win from Chris Smith and Christopher Nylan.

Hewlett initially led Sunday's second race from Nylan and Joe Jessup until there was another stoppage (to retrieve a stricken car at Spitfires). At the restart, Hewlett held his lead in spite of a wobble through Senna. On the approach to Brooklands, the closely following Jessup was wrong-footed and passed by both Matt Digby and Nylan, and that remained the order to the finish.

Jessup had won Saturday's wet opening bout, which ended under a second red flag. He'd taken the lead early on before Nylan, who'd started from pole, splashed his way by on lap three to regain top spot. Nylan, though, then spun exiting Dibeni to allow Jessup and Digby to take over at the front shortly before the first red flag caused by two cars off at the same bend.

The infamous Dibeni hadn't finished with the drivers yet and shortly after the restart Nylan had another moment there, doing well to keep his car under control and hold onto third. Dan Chapman was not so fortunate, ploughing into the tyre barriers to bring the race to a premature end.

There were two new winners in the three Clio Sport races, in which the newer 197 models were again dominant. Spencer Stevenson won the opener — his first victory in the category — with a mature drive. He followed Justin Griffiths in passing polesitter Owain Rosser into Hatchets at the start. Then, three laps later, he pressured Griffiths into running wide there and was through into the lead. Rosser looked to go with him but lost time scrapping with Griffiths before making second his own, this allowing Stevenson to escape up front.

Rosser later took revenge with his first two wins in the championship. In race two, he had to work very hard to keep the determined Stevenson at bay. Race three was a different story as he won by more than four seconds from Stevenson.

Scott Edgar was the best-placed 182 driver in races one and two but was denied a hat-trick of class wins by a tangle with Darren Ransom. This allowed reigning champion Jack Dwane to take the spoils.

Richard Webb (Spire RGBR) maintained his unbeaten record in Sports 1000 in 2022, although he came perilously close to being defeated in the second of three races.

A Webb moment over the Dibeni kerbs allowed reigning champion Ryan Yarrow (Spire GT3-Y) to take the lead. Webb spent many laps pressuring the stubborn Yarrow before finding a way past but he still had to drive flat-out to overcome a misfiring engine and a 5s penalty for exceeding track limits to eventually win by just 0.62s.

Peter Bove (Darvi 88 P) won both 750

Late gearbox woes thwarted Glover's attempts to defeat Bove (1) in 750 Formula

ALL PHOTOGRAPHY: STEVE JONES

WEEKEND WINNERS

TYPE R TROPHY
Race 1 Joe Jessup
Races 2 & 3 Jake Hewlett

CLIO SPORT CHAMPIONSHIP
Race 1 Spencer Stevenson (197)
Races 2 & 3 Owain Rosser (197)

SPORTS 1000
Races 1, 2 & 3 Richard Webb (Spire RGBR)

750 FORMULA
Races 1 & 2 Peter Bove (Darvi 88 P)

HISTORIC 750 FORMULA
Races 1 & 2 John Village (Village V2)

LOCOST
Race 1 Craig Land
Races 2 & 3 Martin West

116 TROPHY
Race 1 Samuel Carrington-Yates
Race 2 Chris Warburton

MA7DA
Races 1 & 2 Danny Andrew

CLASSIC STOCK HATCH
Races 1 & 2 Peter Morgan (Ford Fiesta XR2)

CCRC MIGHTY MINIS
Race 1 Neven Kirkpatrick
Race 2 Ian Slark

For full results visit: 750mc.co.uk

Formula races but was kept on his toes in the first by Richard Jenkins (Sheppard RR-01B) and, in the second, by Mark Glover (Racekits Falcon). Glover reckoned he could have had a chance of seriously challenging Bove had his fifth gear not broken starting the final lap.

Similarly, John Village did the double in Historic 750 Formula. In Sunday's race, his Village V2 and Graham Wilson's Time 3B swapped the lead several times before the latter spun off and then stopped with engine woes.

Three frenetic Locost races went the way of Craig Land and then, twice, Martin West. One had to feel for Ryan Garrett, who thought he'd won the third race only to learn as he was leaving the circuit that he'd been handed a penalty for exceeding track limits.

Sam Carrington-Yates was the winner of the 116 Trophy's first sprint battle. But it was Chris Warburton, with a cutely timed second pitstop just before a safety car period, who triumphed in the endurance.

Danny Andrew and Pete Morgan were both double winners, in Ma7das and Classic Stock Hatch respectively, while Neven Kirkpatrick and Ian Slark shared the Mighty Minis honours.

CARL McKELLAR

HOW THE CLIO COMMUNITY PULLED TOGETHER IN ADVERSITY

This clash involving Dwane brought original race one to a halt and led to some battered cars

The lengths that club level competitors go to in order to race in times of adversity or, similarly, the help they're willing to provide one another never fail to astonish, as admirably demonstrated by those in the 750 Motor Club's Clio Sport Championship at Pembrey.

When red flags flew shortly after the start of the first of three Clio races late on Saturday, the only option organisers had was to cram the 'Clio trio' into one day starting at 9am the following day.

However, it was gone 6pm when teams were informed and a number had serious damage to repair from the multi-car shunt that had caused the red flag if they were to make it out in time for the rearranged race one. Remember that this was in the Pembrey paddock in persistent rain, under easy-ups with grass for flooring and the light fading fast. A long night lay ahead but the way they responded was a great advert for UK club motorsport.

Reigning champion Jack Dwane's 182 had smashed over a kerb after being squeezed and, airborne, then harpooned Andrew Harding's 197 in one of several collisions that caused the Saturday evening red flag.

"We were going home there and then," said Dwane. "But then other people in the paddock – including my main rival in 182s, Scott Edgar – started offering help.

"Suddenly we had a shock absorber, trackrod end, bottom arm and bumper fittings and it was game on again. We had to stop for a bite at about 8pm but then carried on into the dark sorting the tracking out."

The damage to Harding's 197 was also substantial and he had fellow racers David Walsh, Justin Griffiths and Spencer Stevenson among others to thank for helping to rescue his weekend.

"Someone actually found a rear beam through a plea on Facebook and drove 90 minutes there and then back to go and get it for me!" said Harding. "Then it was a case of a lot of hammering to the rear-quarter panel, door and sill." Three third places were a good reward for Harding, who'd won twice at Silverstone last time out.

Elsewhere, there was a miraculous effort from Ben Swift and Tom Stevenson-Joyce to help Charles Shelbourn replace his car's engine in two and a half hours.

But not all the hard work had a fairytale ending. Olivier Algieri and his crew drove to Simpson Motorsport in Gloucester, where they worked through much of the night to repair the damage – including to the sub-frame and broken engine mounting.

With next to no sleep, they made it back in time for race two only for his 182 to suffer crank sensor failure on starting up the engine. After all the effort, the youngster still didn't race a lap.

Dwane, meanwhile, believes the British Touring Car-esque three-races-in-a-day format has its merits. "It brings pressures, but I like it – you're not hanging around so long between races and it gets you that bit more fired up as a driver," he said.

CARL McKELLAR

Harding (r) battled to podiums in repaired car

Mercedes duo dance through the rain to win

SILVERSTONE
BRSCC
18-19 JUNE

Marrs/Jackson Mercedes (right) mastered the tricky conditions at Silverstone

The UK's heatwave well and truly ended at Silverstone on Saturday, as Wayne Marrs and Tom Jackson battled through a deluge to win the British Endurance Championship encounter.

Heavy rain prior to the start of the two-hour race left the Grand Prix layout covered in standing water, but polesitter Sacha Kakad was unfazed as he led the opening stages aboard the Simpson Motorsport Mercedes-AMG GT3, despite spinning on the sighting lap. Marrs initially held station in the similar Rob Boston Racing-run Mercedes behind, before being usurped by the BMW Z4 of Kevin Clarke, which had risen from eighth, on lap three.

After a brief safety car appearance to retrieve a stricken car — the only caution period of the entire race — Kakad resumed his push and held a lead of more than four seconds when he became the first of the frontrunners to make one of two mandatory pitstops after 30 minutes.

Clarke inherited the lead and remained at the head of the field until well into the second hour. After relaying to Ian Lawson, the ING Sport BMW rejoined third with the Marrs/Jackson Mercedes leading from Hugo Cook, who had taken over from Kakad, the Simpson Mercedes delayed by refuelling problems and suffering from a gearbox issue. Cook's 42s deficit proved crucial, since it allowed Marrs to serve a drivethrough penalty following a pitstop infringement and still rejoin with a lead of 12s.

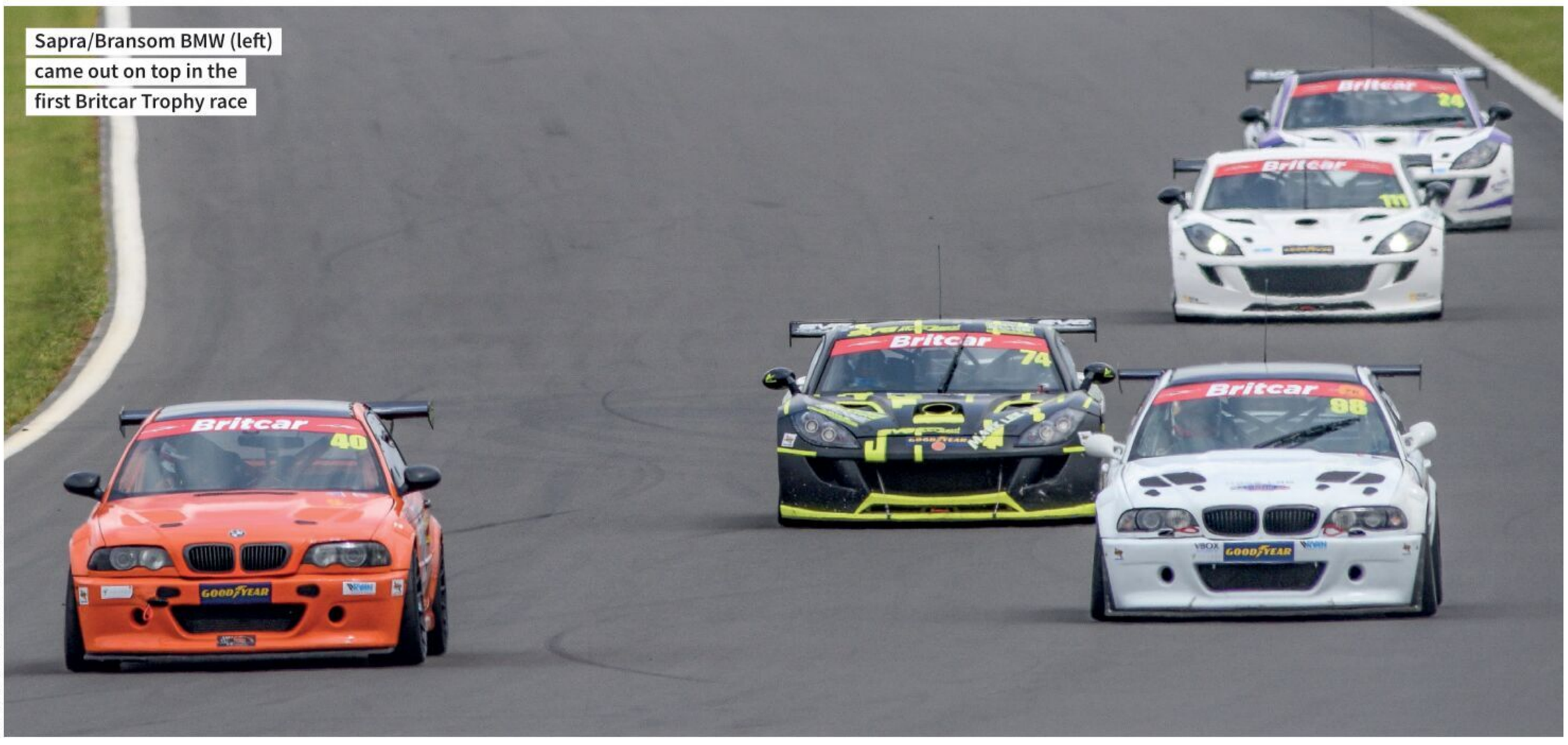
After relaying to Jackson for the final stint, and with purple sectors lighting up the timing board courtesy of a drying track, the Mercedes duo came home comfortable winners by more than 42s. "I think most of it was won in the pitlane, the boys made some quick pitstops and we jumped the guys [we were racing]," said Jackson.

Kakad took over for the final stint in the Simpson Mercedes to finish second, while Ryan Lindsay completed the podium aboard the ING BMW. Behind, the RaceLab Lamborghini Super Trofeo Evo in the hands of Claude Bovet and David McDonald went under the radar on its way to fourth overall and the Class B spoils.

Class D winner and fifth overall was the Porsche Cayman GT4 of Formula Ford driver Ian Gough and Euan Hankey, who was initially due to share driving duties with Lucky Khera before Khera pulled out due to back issues. The RaceLab-run machine stormed through the order after starting from the pits due to an "admin error".

Sixth and Class E winner was the Cupra Leon of Ashley Woodman and Martin Byford, while 2007 British GT champion Bradley Ellis guided the RNR Performance Cars Ferrari 458 Challenge to the win in Class C alongside new outright championship leader Chris Goddard.

In Sunday's first Britcar Trophy race, Bryan Bransom survived a suspected fuel surge and last-lap challenge from Mark Lee to win alongside Jasver Sapra in their BMW M3 E46, having chased down the Ginetta G56A of Lee and Owen Hizzey after the pitstops. In the sequel, Lee/Hizzey comfortably took the win after passing the G56 Academy car of Neil Wallace at The Loop.



Sapra/Bransom BMW (left) came out on top in the first Britcar Trophy race

ALL PHOTOGRAPHY: OLLIE READ

WEEKEND WINNERS

BRITISH ENDURANCE CHAMPIONSHIP
Wayne Marrs/Tom Jackson (Mercedes-AMG GT3)

BRITCAR TROPHY
Race 1 Jasver Sapra/Bryan Bransom (BMW M3 E36)
Race 2 Mark Lee/Owen Hizzey (Ginetta G56A)

CATERHAM 310R
Race 1 Harry George
Race 2 Jack Sales

CATERHAM 270R
Race 1 Taylor O'Flanagan
Race 2 Domenique Mannsperger

CATERHAM ROADSPORT
Race 1 Freddie Chiddicks
Race 2 Geoff Newman

ZEO PROTOTYPE SERIES
Races 1 & 2 James Abbott (Revolution 500SC)

CATERHAM SEVEN UK
Race 1 Jake Swann
Race 2 Lewis Thompson
Race 3 Aaron Head

CATERHAM ACADEMY
Matt Larbey

For full results visit: tsl-timing.com

Harry George claimed Saturday's opening Caterham 310R race after rising from 18th on a damp track, while James Wingfield and Stephen Lyall completed the rostrum, the trio covered by less than a tenth. Unusually for Caterham racing, Jack Sales cruised to victory in a dry race two after breaking the tow to the chasing pack on the opening lap. Tom Cockerill got the better of Ross McConachie by just 0.001s for second.

Taylor O'Flanagan was victorious in the first 270R contest but had to give best to Domenique Mannsperger in race two, Mannsperger grabbing the lead around the outside of Brooklands on the final lap.

A safety car negated Geoff Newman's healthy lead in the first Roadsport race, with Freddie Chiddicks finishing on top from William James as rain began to fall on the last lap. Newman took fourth on the road but was promoted to third after Charlie Lower was handed a penalty for exceeding track limits. Newman wasn't to be denied in race two, holding Chiddicks at bay for the duration of the final lap after a race-long battle.

James Abbott rebuffed Mike Jenvey in the first Zeo Prototype Series race, his Revolution 500SC proving quicker on the straights but slower in the corners, before the Jenvey Gunn TS6 conked out at half-distance. Abbott was unchallenged in the sequel.

STEFAN MACKLEY

THOMPSON SHINES AT SILVERSTONE

On the drag to the line, Thompson just lost out to Head (right) in race three

Lewis Thompson showcased his ability at the wheel of a Caterham emphatically at Silverstone, taking a win and two further podiums on his debut in the Seven UK Championship.

The 19-year-old joined the championship at the third round after delays in building his car – notably waiting for a differential – meant he missed the previous two events at Brands Hatch and Snetterton. "We ordered it [the car] last July and we finished building it on Thursday," said the reigning 310R champion, who dominated that series in his first full year of car racing.

But the wait proved to be worth it. Thompson fought for victory across all three races on the Grand Prix layout and occupied every step of the podium.

The weekend's highlight came in the second race, held in the dry on Sunday, when he battled for the lead with James Murphy throughout. Thompson grabbed the advantage on the inside at Abbey on the final lap, but lost the position down the Wellington Straight and followed Murphy across the line in second.

But, post-race, the officials judged that Murphy had made an illegal pass under yellow flags, docking him 0.1s, which pushed him behind Thompson – the amended result declared the pair just 0.001s apart. "I was a bit miffed off when I came in, I knew that I'd been mugged under the yellow flag," said Thompson. "We took it to the stewards and they agreed with me so I was buzzing after that."

The other two races also produced incredibly close finishes, with Jake Swann claiming his maiden win in Caterhams when he mastered slippery conditions during Saturday's opener.

Despite initially dropping down the order from third on the grid, Thompson surged through to lead by the end of the opening lap. But his new wet tyres started to overheat quicker than those on his rivals' machines, and he slipped behind both Swann and Henry Heaton by the halfway point of the 20-minute race.

Heaton looked to the inside of Luffield on the last tour, but on the drag to the line Swann secured his maiden triumph by 0.006s. "It was one of those moments, 'Have I? Haven't I?'" said Swann.

The finale proved to be the most frenetic encounter as eight cars formed the lead group, with Murphy, Thompson and Aaron Head all taking turns at the front. Thompson led out of Luffield for the final time but, on the drag to the line, Head snatched the win by just 0.003s.

"That was a cracking race, that was harder than the other one," said Thompson, who admits he will likely compete in the Donington Park, Anglesey and Spa rounds but is undecided on the trip to Knockhill. "I'm just gutted we were not ready for the start of the year – the way we're going, we had a good chance of the championship."

STEFAN MACKLEY

Thompson was handed a victory post-race

Romanek heads Sharp, Queen, Dempsey and Rashid at Anglesey

Double delight for Romanek in National FF1600

ANGLESEY
BRSCC
17-19 JUNE

Lucas Romanek guided his Van Diemen JL13 to a double victory in the National Formula Ford Championship at Anglesey.

Jordan Dempsey's Spectrum 011 led race one initially before poleman Jamie Sharp (Medina) took charge. But Romanek soon went from third to first courtesy of moves at the banked Hairpin and Rocket, before Sharp repassed into Peel a lap later.

Dempsey then spun out of contention and, after going side-by-side into Rocket for the final time, Romanek took the spoils by 0.12 seconds from Sharp, with the Ray GR18s of Colin Queen and Shawn Rashid close behind.

Sharp and Romanek shared some early exchanges in the second race prior to a three-lap safety car intervention. Sharp was quicker off the mark at the green flag, with Romanek in second under pressure as Queen emerged ahead out of Peel and led a five-car train.

Romanek managed to retake the position but, with red flags out, Queen was promoted back to second on countback, from Romanek and Rashid.

The final race had to be restarted following an early collision and, from lights out, Romanek was in charge. Sharp and Queen duelled for second, with Rashid well down after exiting Church on the grass.

As the fight for second continued, Dempsey joined in and, after splitting his rivals, he took second two laps from home as Sharp and Queen completed the top four.

CSC Racing's James and Nick Cunniffe kept Silverlake's Mike Harris/Matt Parkes at arm's length during the second half of

Porsche series put on a show

SNETTERTON
MSVR
18-19 JUNE

Porsche Club Motorsport paid tribute to its former manager Steve Kevlin following his untimely passing earlier this month with four exciting races at Snetterton last weekend.

There was little to separate Simon Clark and James Caley in both Porsche Club Championship contests. Caley led race one from pole in his 997 C2S, but lost out to Clark's 996 C2 through Coram as a mixture of oil and light rain made track conditions treacherous. Caley remained within a second, but Clark held on to take his second win of the season.

Kevin Harrison made one of his fabled great starts to climb from fifth to third, fending off Chris Dyer's Cayman by 0.6s to score his third podium of the year.

Clark moved ahead of Caley at the start of the second encounter, before withstanding race-long pressure to triumph once more. Harrison pounced on a battle between Pete Morris and Caley's son Bill to snatch third on the pitstraight, as contact put Caley Jr out with front-right damage. Harrison again edged Dyer for the final podium spot, by a margin of 0.4s.

Tim Bates continued his unbeaten start to the season with two comfortable victories in the 911 Challenge, the second of which will be remembered for his huge jump start. Bates was caught out by a new starting procedure, pulling away from pole before the red lights came on. His big lead and inevitable time penalty were both eradicated when Boxster Cup polesitter Sarah Thomson spun at Oggies, triggering a multi-car collision and a new start.

Mike Thompson prevailed in a fierce three-way scrap with Darren Labbett and Darren King in race one to win the Boxster class, while Peter Evans beat Thompson and Wayne Gregory to victory in race two.

Simon Rudd pipped championship leader Liam McGill to victory in the first two Focus Cup races, the second of which provided the most thrilling action. McGill climbed from fifth on the grid to snatch the lead from Ian Mitchell at Wilson hairpin but ran wide, allowing both Mitchell and Rudd to move ahead.

Mitchell then made a mistake at Hamilton, slipping to fourth behind Callum Eason, with Rudd prevailing against McGill — who held on to second despite a 5s track-limits penalty. McGill took a comfortable victory in race three, with Rudd finishing 0.7s behind John Baker in third,

Clark beat Caley twice in Porsche Club Championship

Into-the-night Citroen C1 race took place over four and a half hours

the Citroen C1 into-the-night race.

The gap remained around the 20s mark over the last 40 minutes after James Cunniffe had regained the lead when the Silverlake entry pitted for the final time.

The Scuderia Pollo Rosso car of Graham Wilkins and Frank Claydon came into the frame late on, after a terrific final stint from James Matthews netted them third, a lap up on Diablo Racing's Jason Knight, Stephen Mortin and Jake Owens.

Andrew Dyer's Citroen C1 was a lights-to-flag winner in the first CityCar Cup race, but Stuart Bliss's Toyota Aygo was a constant threat after they gapped Elliot Lettis's Peugeot 107.

Lettis grabbed the race-two spoils after Dyer led initially before they swapped on lap three and Bliss snatched second a lap later. Richard Bliss made it four abreast into Rocket on lap five of eight, before the order settled down with Lettis heading home Stuart Bliss and Dyer. There were only four racing laps in the third and final race, as the safety car took them to the flag. Richard Bliss won from Dyer and Ross Makar.

Stephen Whitelegg showed a clean pair of heels in the opening Legends race, with little to split John Mickel and Marcus Pett for second. It went down to the final corner in race two, though, with Will Gibson nosing ahead of Mickel as Miles Rudman ran wide onto the grass and dropped to third, all three just 0.176s apart.

Mickel took charge in Saturday's finale after a safety car intervention, but Jack Parker stayed close and almost took it back on the line, with Rudman a close third again.

Rudman won both of Sunday's early races but couldn't make it a hat-trick, as both he and Mickel were jumped by Whitelegg in the dash for the line in the finale, leaving Rudman second.

PETER SCHERER

Inaugural HRDC Gerry Marshall Trophy race was held at Snetterton

before Baker was handed a 2s penalty for crowding another car off the edge of the track, which dropped him to fourth.

After the rain on Saturday, the following day's cool and dry conditions were welcomed by drivers in the Historic Racing Drivers Club's inaugural Gerry Marshall Trophy race. Bill Shepherd led the early stages of the 45-minute pitstop contest in a 1970 Ford Mustang ahead of Robert Oldershaw's Rover SD1, while Tom Butterfield retired from third with a driveshaft failure in an Alan Mann Ford Capri 3.0S. Shepherd handed the car over to his son Fred, but a slow pitstop consigned them to second, as Oldershaw romped to victory by 32s.

After a poor start from pole, Cameron Evans – making his UK racing debut – ran eighth early on before handing over the 1982 VW Scirocco to former British Touring Car racer Mat Jackson, who starred by charging up the order to third.

Joshua Law dominated all three Sports 2000 races in his MCR S2n. James Barwell briefly led each of them but was unable to keep Law at bay.

STEVE WHITFIELD

WEEKEND WINNERS

ANGLESEY

NATIONAL FORMULA FORD
Races 1 & 3 Lucas Romanek (Van Diemen JL13)
Race 2 Jamie Sharp (Medina)

C1 RACE SERIES
CSC Racing/FDL Packaging (James and Nick Cunniffe)

CITYCAR CUP
Race 1 Andrew Dyer (Citroen C1)
Race 2 Elliot Lettis (Peugeot 107)
Race 3 Richard Bliss (Toyota Aygo)

LEGENDS
Races 1 & 6 Steve Whitelegg
Race 2 Will Gibson
Race 3 John Mickel
Races 4 & 5 Miles Rudman

BMW COMPACT CUP
Races 1, 2 & 3 Guy Davis

NORTHERN/SUPER CLASSIC FORMULA FORD
Races 1 & 2 John Murphy (Van Diemen RF90)

ST-XR CHALLENGE
Races 1, 2 & 3 Michael Blackburn (Fiesta ST150)

BRITISH SUPERKARTS
Races 1, 2 & 3 Liam Morley (Anderson CSK)

SNETTERTON

PORSCHE CLUB CHAMPIONSHIP
Races 1 & 2 Simon Clark (996 C2)

911 CHALLENGE/BOXSTER CUP
Races 1 & 2 Tim Bates (911, below)

FOCUS CUP
Races 1 & 2 Simon Rudd
Race 3 Liam McGill

HRDC GERRY MARSHALL TROPHY
Robert Oldershaw (Rover SD1)

SPORTS 2000
Races 1, 2 & 3 Joshua Law (MCR S2n)

NORTHERN SALOON/SPORTS CAR
Races 1 & 2 Matty Cobb (VW Beetle)

PRODUCTION GTI
Races 1 & 2 Simon Hill

RACING SALOONS
Race 1 Gavin Dunn (BMW E36)
Race 2 Luke Schlewitz (VW Golf GTI)

Z CARS
Races 1 & 2 Callum Bates

For full results visit: tsl-timing.com

The endurance club series attracting pros and amateurs

EnduroKa held its maiden 24-hour race at Anglesey, as Autosport experienced sun, rain and spins

STEFAN MACKLEY

PHOTOGRAPHY **OLIVER READ**

"That band of rain has just missed us, but this is supposed to hit soon." On the phone that British GT ace Phil Keen is holding, a large, ominous mass of rain is heading to engulf the Anglesey Circuit. It's not what this writer wants to see ahead of the final two hours of a 24-hour race, having already endured a rollercoaster of emotions and challenges.

The race in question is for the EnduroKa series, which has become well-established since its creation by MotorSport Vision Racing in 2019, formed as an affordable way of going club endurance racing. Using the Ford Ka with the 1.3-litre Duratec engine and uprated GAZ suspension, as well as the usual mandatory motorsport safety features, a full build can be done for around £6000.

The 2022 calendar features events as 'short' as five hours, but the trip to north Wales across the Queen's Jubilee bank holiday is for the inaugural 24-hour event for both series and club.

"I think it's a great way for people to fulfil their dream without spending a fortune, but more importantly have fun doing it," says Karl Graves, team principal of Graves Motorsport which is running the car for the event. "You can do it with your friends and not feel intimidated."

The team has been part of the series since the outset but is more renowned for its success in Mini championships, while Karl's brother David won the Production BMW title in 2018.

Karl's quote perfectly applies to my team-mates for the event — Alistair Hardie and Alistair Macdonald have competed in the series since 2020, while Les Conway has previously raced a BMW E30 with the Classic Sports Car Club. All three are motorsport enthusiasts who are now in a position to go racing, with the series the perfect jumping-in point.

A track walk ahead of qualifying reveals not only the stunning scenery of Anglesey, but also what a challenge the Coastal layout will pose, with flat-out turns, banked bends, heavy braking and elevation changes packed into just 1.55 miles.

The first qualifying session begins at dusk, but being the last to drive means my stint is in complete darkness and soon proves to be an unforgettable experience for all the wrong reasons. Approaching corners at speed and struggling to pick out the apex or the exit means I spend my time trying to stay out of the way of the blaze of headlights behind in the most daunting track experience I've ever had.

The next day brings a second qualifying session in daylight where there's a chance to put some meaningful laps on the board. It's incredible how the eyes and mind work, as the first and third turns are easily flat and the drop down the infamous Corkscrew soon becomes fun instead of something to fear. The rear goes light, while there's the usual understeer through some of the turns but the car feels well-balanced on the brakes.

The onboard lap-timer indicates that I'm more than five seconds faster than my best from the previous night, and my 1m33.713s puts us 21st on the gird — albeit some 3.6s off the top spot.

Despite focusing on my own performance, it's difficult not to get caught up in the battle at the front, with just half a second covering the top four cars. The IP Racing machine with Keen among the ranks is on pole — the Lamborghini British GT driver is making his second outing in EnduroKa, having competed in the 12 hours of Snetterton in 2020 alongside brother Pete.

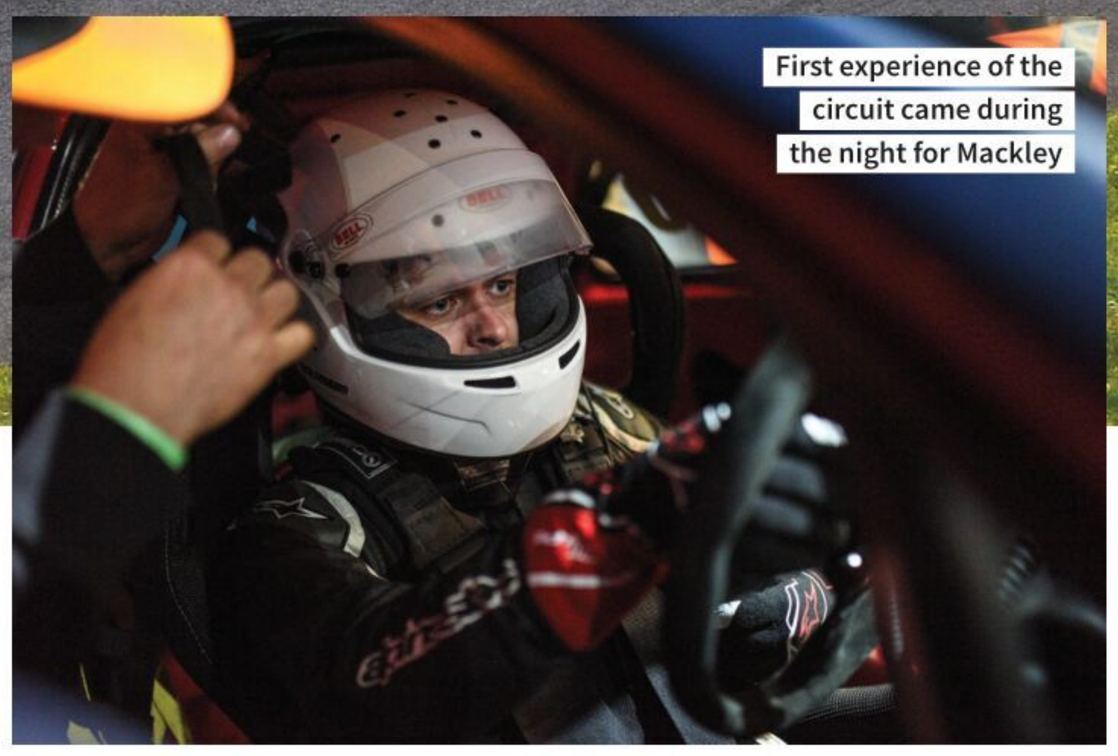
"Racing is racing and driving on the limit is driving on the limit. You're trying to extract the most you can from the car. It's all the same in that aspect, it's just a bit slower [than GTs]," he says.

"When everything around you is doing the same speed you don't really think of yourself as slow and it's quite a tight and twisty track so you're just chasing your lap time and trying to get past everyone.

"At the end of the day it's all about having fun. The cars are cheap to run, you can get a group of mates together and go and have a laugh."

A total of 23 cars took part in the first EnduroKa 24-hour race at Anglesey

"Racing is racing and driving on the limit is driving on the limit. It's just a bit slower"



First experience of the circuit came during the night for Mackley

Keen isn't the only professional to try his hand in a Ka over the past few years. Nick Tandy, 2015 Le Mans 24 Hours winner, added to his illustrious CV with a win in the Brands Hatch end-of-season event in 2019, where 1990 British Touring Car champion Robb Gravett also took the track. It's a testament to the popularity and accessibility of the series, and their appearances also offer the chance for enthusiasts like Conway, Hardie and Macdonald to test their skills against established names.

Unlike my previous 24-hour experience in the Citroen C1s, where I had the daunting task of starting the race, I'm a grateful bystander as Conway takes the first stint, with Hardie and Macdonald following as day turns to night and stint lengths of approximately two hours are determined by fuel.

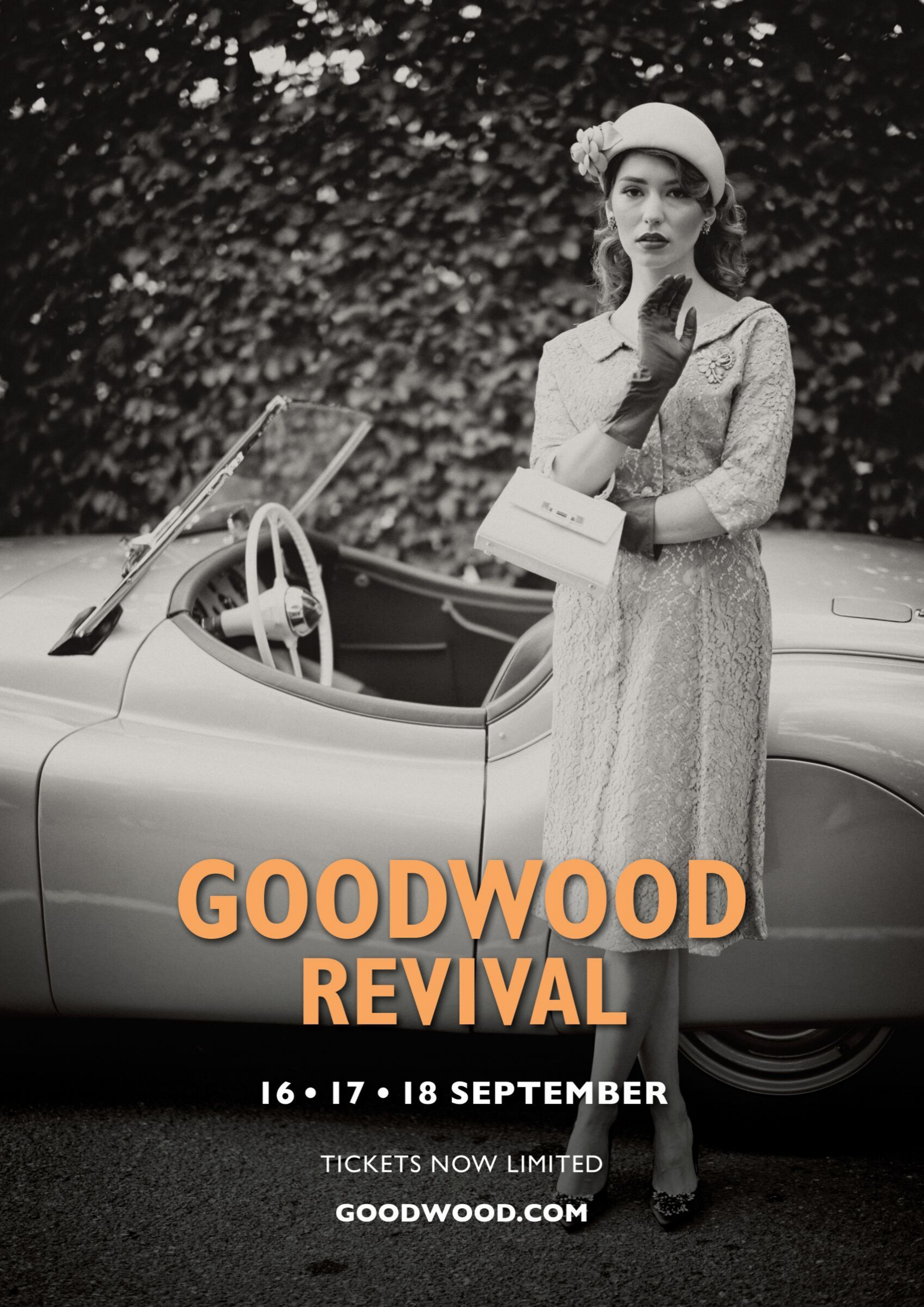
One thing that becomes apparent quickly is that tyre wear is a bigger issue than teams expected, with the abrasive surface ripping the Toyo treaded front tyres, which I discover during my stint.

Heading out into the darkness again, the difference from 24 hours earlier feels staggering, as I'm committed through the flat-out turns and soon into a rhythm. A 1m33.523s, less than a tenth off Macdonald's fastest from his earlier stint, proves to be my best in the event as I soon have to contend with a new experience — racing in the rain.

One of the most startling aspects is that, despite the short circuit length, some parts of the track remain dry while others — notably at the top of the hill — soon become wet. Each lap and corner by corner the grip levels change and it's a surreal experience not knowing how much, or little, you can push through a bend.

Feedback from Graves via the radio indicates that my pace at this stage is inside the top half, encouraging me to push on. But as ever with racing, you come crashing down hardest when you're at your highest.

Having let the second Graves-run machine driven by Henry Wright through, I attempt to keep up and heading into the hard, uphill braking of Rocket In the car starts to step out. Coming off the brakes isn't an »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Celebrations as Mackley brings the car home in 14th after a pass late on

option with Wright just feet in front, and pressing harder on the pedal only sends the car sideways further to the right and heading towards the marshals' post. Pulling hard left, the car spins and I travel backwards across the grass, coming to rest with the barrier alongside. Engaging first, I quickly regain the circuit and apologise over the radio having had my first experience of a spin.

It certainly wasn't to be the last for our car or others, but thankfully there are no more during my stint as Conway takes over just after 12.30am. While our pace isn't setting the world alight, by generally staying out of trouble we're climbing the leaderboard and occupy 15th as I head to my car for some rest.

My four hours of sleep is broken by the sound of heavy rain hitting the roof of the car, and it's enough to make me want to stay curled up in my sleeping bag. By the time I take over from Macdonald the rain has thankfully passed but a greasy film of moisture covers the surface of the asphalt.

A spin into the left of the Corkscrew is much less dramatic than the one in the night, but it's a sign of just how tricky the conditions are, with mounds of discarded rubber offline making it even more treacherous. While Turn 1 remains flat after a few laps spent building up confidence, trying to do the same through T3 feels too risky with the front washing out. Too much lifting causes the rear to step out, though, making each pass through a challenge, while the final left-hand turn is an understeering nightmare no matter how many different lines I try. Just before 9am I hand over to Conway and through the following six hours he, Hardie and Macdonald make steady progress as we run in 16th.

"The final left-hand turn is an understeering nightmare no matter how many lines I try"

Ahead of the final stint the news from Macdonald is mixed. The car, while still handling well, is struggling to pull out of the corners. Even with a new set of front tyres, my best lap during the whole stint falls two seconds short of what I'd done earlier in the race.

Ironically, despite Keen's warning of heavy rain, only a few drops fall but it's enough to let me keep pace with others before they pull away when the sun starts to shine.

Over the radio Graves tells me that my current pace means I'll catch the #3 car of Jonathan Barrett for position before the end of the race and, with half an hour remaining, I have him in sight.

I look up the inside into Turn 1 but back off when the door is shut, and in the end simply drive past up the climb to Rocket In as his car is clearly in a worse state than mine.

We finish 14th, with all 23 cars classified. Having spent more than six hours in the driving seat it's easy to understand why the EnduroKa series is as popular as it is, both with professionals and amateurs.

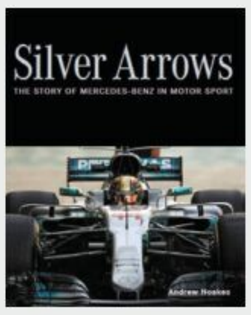
"With the positive feedback received, we would certainly look favourably at other potential 24-hour events in the future," says series manager Stuart Garland. "While as a series we would look at all options available, the Coastal configuration at Anglesey has proven to be a very enjoyable track for the lower-powered Kas."

As Graves adds: "I'm a believer that you've got to enjoy motorsport. You're never going to become a millionaire unless you're a billionaire, so if you haven't got a smile on your face what are you doing it for?"

All smiles with the Graves Motorsport team after a gruelling 24 hours

FINISHING STRAIGHT

A history of motorsport success



BOOK
SILVER ARROWS: THE STORY OF MERCEDES-BENZ IN MOTORSPORT
Andrew Noakes
RRP £25

Mercedes-Benz and motorsport seem intertwined, the German marque's exploits part of the very fabric of competition.

This is perhaps unsurprising, given that co-founders Karl Benz and Gottlieb Daimler were the early pioneers in the late part of the 19th century as the genesis of motor racing was under way. Almost 100 years since they merged their ventures in 1926 to create the famous marque, the Three-Pointed Star has cemented its legacy across pretty many motorsport disciplines.

That history and success – as well as failures – are detailed in Andrew Noakes's *Silver Arrows: The Story of Mercedes-Benz in Motorsport*, which was released by The Crowood Press earlier this year. The 192 pages offer an accessible read for those wishing to learn more about one of the most successful car brands in the world. Laid out chronologically from the manufacturer's beginnings with the exploits of Benz and Daimler – as well as the origin of the Mercedes name – it charts to the present day and its involvement with Formula E.

The successes of pre-war heroes such as Richard Seaman and Rudolf Caracciola, and post-war legends including Stirling Moss and Juan Manuel Fangio, are unsurprisingly given most of the attention in the early chapters, their racing careers outlined in concise profile boxes, which is a theme throughout.

Notable racing machines from Mercedes undergo the same treatment, with a vast list of specifications detailed on cars such as the Blitzen Benz, W125 and C11. Rare and unique creations are also given the limelight, such as the T80 that Hans Stuck was due to use for a land speed record attempt but was never driven in anger due to the outbreak of the Second World War.

Hundreds of incredible pictures, most supplied by Daimler, adorn the pages, some of which are unlikely to have been published elsewhere.

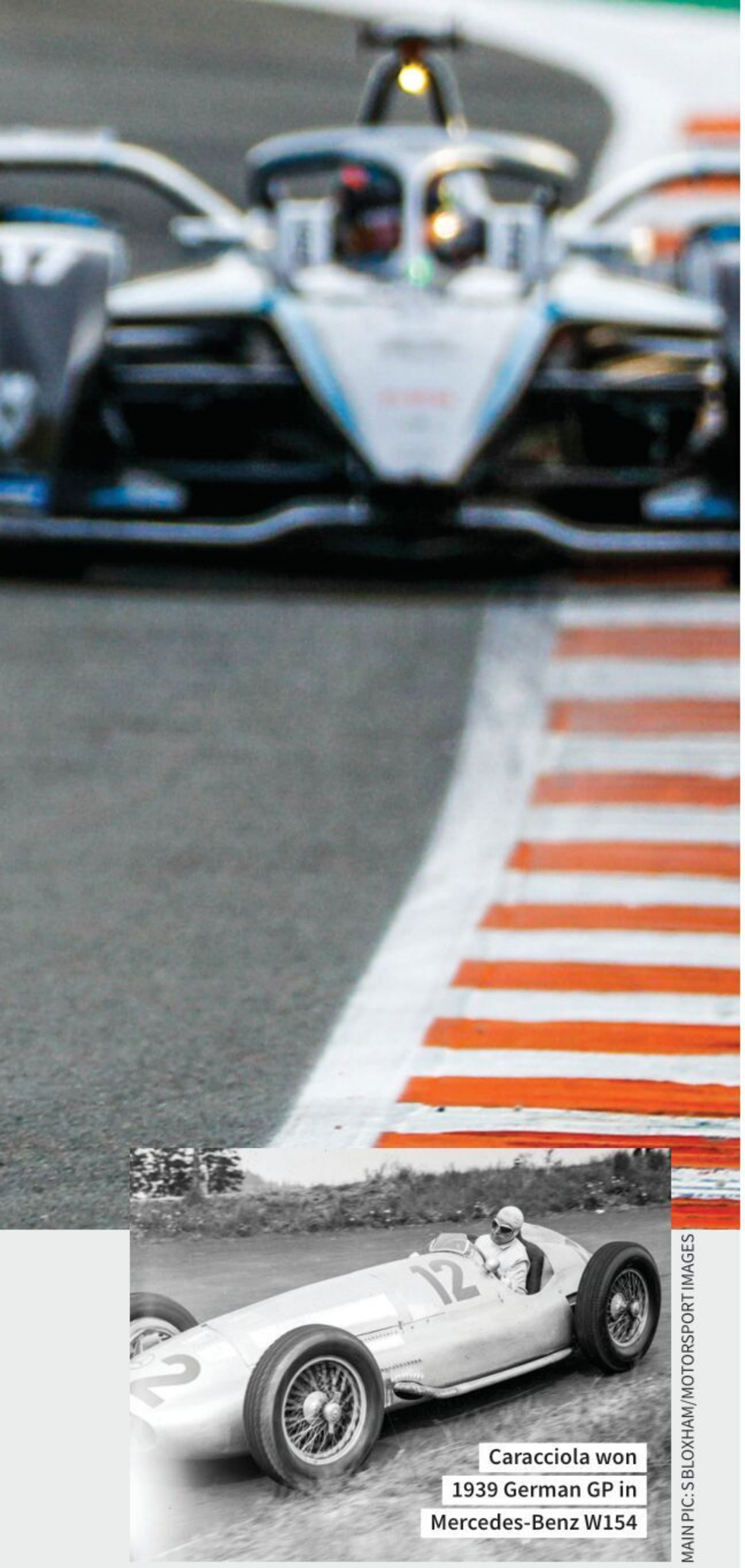
Later chapters are broken into specific areas, with Mercedes' exploits in rallying, touring cars and sportscars all given ample column inches. So is a section devoted to the Ilmor-Mercedes 500I pushrod V8 engine, which Penske used to devastating effect in the 1994 Indianapolis 500. The book moves on to Mercedes' involvement again with Formula 1, first through supplying engines to Sauber and then McLaren, before returning as a full factory effort in 2010.

Each season is covered, with Noakes giving general information, although at times it is a little fleeting, with no breakdown of results and only a brief timeline outlining the major achievements of the company.

Greater detail can be found in other publications, but as far as covering the entire history of Mercedes-Benz, the

Ilmor-Merc 500I V8 powered Al Unser Jr to Indy victory in 1994

SUTTON/MOTORSPORT IMAGES



Caracciola won 1939 German GP in Mercedes-Benz W154

MAIN PIC: S BLOXHAM/MOTORSPORT IMAGES

book does the job, and well. If any criticisms can be levied at the publication, it's that it skirts around some of the bigger controversies from the history of the German company – perhaps unsurprising to some degree given the book is a celebration of success.

Noakes's comment that "the drivers, inevitably, just wanted to race" following Mark Webber's two aerial accidents at the 1999 Le Mans 24 Hours seems pretty presumptuous and, although it's highlighted that there was "something deeply wrong with the CLR", there's no thorough explanation of what those fundamental problems were. There's also no mention of the collision between Lewis Hamilton and Nico Rosberg at the 2016 Austrian Grand Prix, although this may be an oversight given that their more infamous clashes at Spa in 2014 and Barcelona in 2016 are written about.

The book certainly doesn't shy away from Mercedes' involvement in the darker side of motorsport, with the fatal accident of Pierre Levegh and more than 80 spectators at the 1955 Le Mans given the space it merits.

At £25 it's worth the price for offering such a wide-ranging insight into one of motorsport's greatest names.

STEFAN MACKLEY

AUTOSPORT F1 AND MOTORSPORT

autosport.com/podcast

ETHERINGTON/MOTORSPORT IMAGES

F1 Canadian Grand Prix review

Max Verstappen extended his Formula 1 World Championship lead with victory in the Canadian Grand Prix, while his main rivals struggled. To review all the action in Montreal, host Martyn Lee is joined by Luke Smith, Jess McFadyen and Matt Kew, who'll discuss whether Ferrari had any chance of ending Red Bull's winning streak.

WHAT'S ON

INTERNATIONAL MOTORSPORT

Safari Rally
World Rally Championship
Round 6/13
Nairobi, Kenya
23-26 June
TV **Live**
BT Sport 2, Thu 1200,
BT Sport 3, Sat 0700, Sat 1300,
BT Sport 1, Sun 0700, Sun 1200
TV **Highlights**
BT Sport 3, Fri 2315,
BT Sport 2, Sat 2330, Sun 2230
Red Bull TV, Fri 2000,
Sat 2000, Sun 2000,
ITV4, Tue 2000

ADAC GT Masters
Round 3/7
Zandvoort, Netherlands
25-26 June
Livestream on
motorsport.tv, Sat 0800,
Sat 1150, Sun 0735, Sun 1150

World Touring Car Cup
Round 4/10
Motorland Aragon, Spain
26 June
TV **Live** Eurosport 2,
Sun 1000, Sun 1400

IMSA SportsCar
Round 7/12
Watkins Glen, USA
26 June

NASCAR Cup Series
Round 17/36
Nashville, USA
26 June
TV **Live** Premier Sports 2,
Sun 2130

NASCAR Xfinity Series
Round 15/33
Nashville, USA
25 June

NASCAR Truck Series
Round 14/23
Nashville, USA
25 June
TV **Live** Premier Sports 2,
Sat 0030

MotoGP
Round 11/20
Assen, Netherlands
26 June
TV **Live** BT Sport 2, Sun 1230
TV **Highlights** ITV4, Mon 2000

UK MOTORSPORT

Goodwood Festival of Speed (see page 46)
23-26 June
Livestream on
motorsport.tv, Thu 0850,
Fri 0820, Sat 0820, Sun 0830

Croft BARC
25-26 June
BTCC, British F4, Ginetta GT5
Challenge, Ginetta Junior,
Mini Challenge Trophy,
Porsche Sprint Challenge
TV **Live** ITV4, Sun 1130

Snetterton MSVR
25-26 June
British GT, GB3, GB4, Radical Challenge, Radical SR1 Cup, Snetterton Saloons
Livestream on
motorsport.tv, Sat 1600,
Sun 1030, Sun 1550

Oulton Park BRSCC
25 June
ClubSport Trophy, Fiestas, Fiesta Juniors, Lewis Evans Trophy, Modified Fords, Nippon Challenge/ Tricolore Trophy

Kirkistown 500MRCI
25 June
Fiestas, FF1600, Mazda MX-5s, Roadsports, Saloons/GTs

Brands Hatch BRSCC
25-26 June
CMMC, Fun Cup, Mazda MX-5s (Championship, Clubman, SuperCup), SuperSport Endurance

Donington Park MSVR
25-26 June
Ferrari Challenge,
Ferrari Classic

FROM THE ARCHIVE

Kimi Raikkonen's McLaren MP4-17 sits abandoned at the side of the track, its three-litre Mercedes V10 having called it a day after just five laps of the 2002 Austrian Grand Prix at the then A1-Ring. The Finn had been running in seventh place. It was the fourth time he'd failed to finish a race that year – the final tally would be 10, from 17 GPs. Speeding past is a Ferrari F2002 that come the end of the race would play its part in one of Formula 1's most infamous instances of team orders, when Rubens Barrichello was obliged to make way for Michael Schumacher to win, letting him past right at the line.

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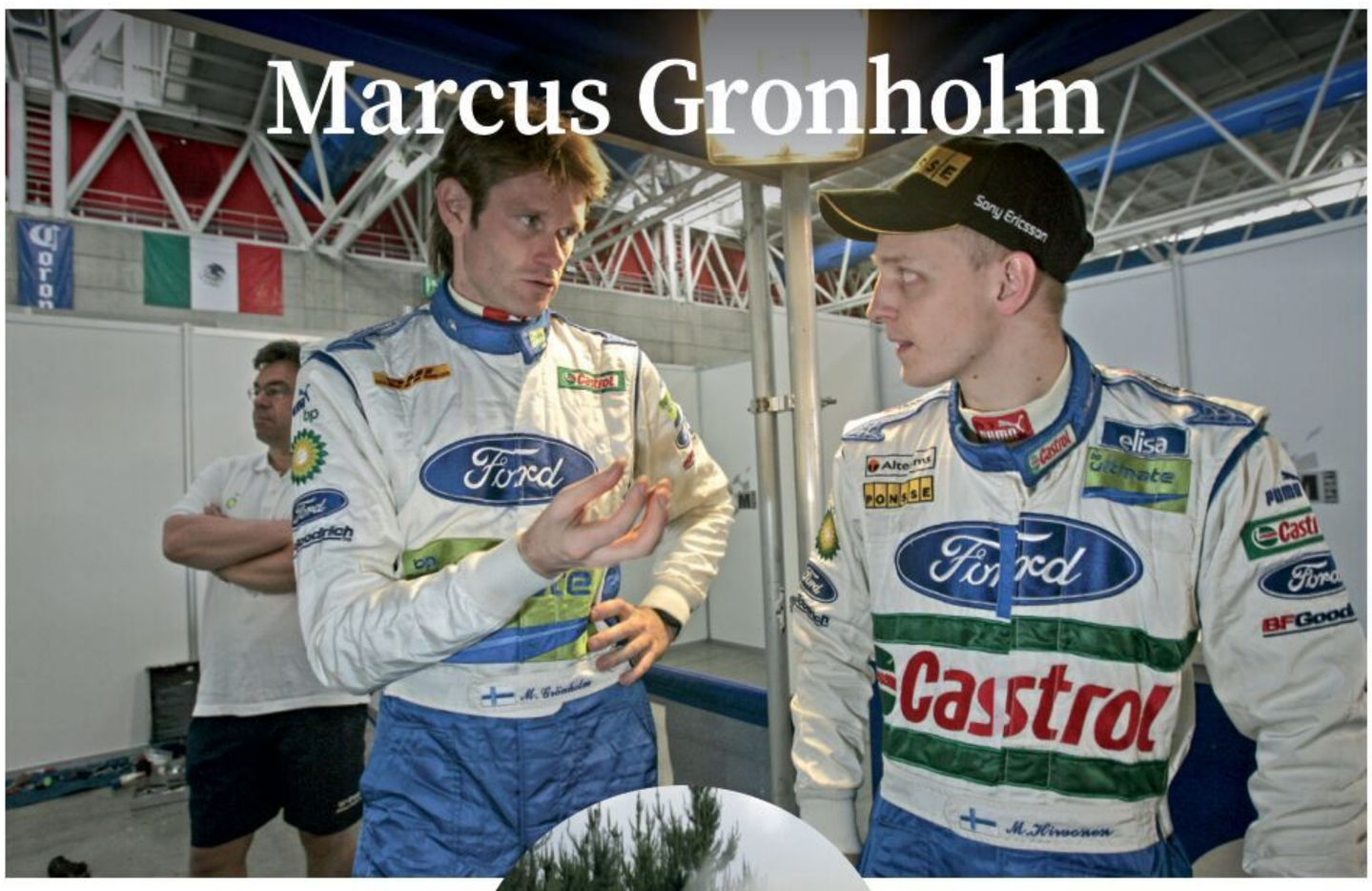
MIKKO HIRVONEN

MY FAVOURITE... TEAM-MATE

Marcus Gronholm



MAIN: MCKLEIN; INSET SUTTON

Sharing a service park tent with a double world champion can be a daunting prospect for any young driver climbing the World Rally Championship ranks. But four-time WRC runner-up Mikko Hirvonen believes that the no-nonsense advice gleaned from Ford team-mate Marcus Gronholm proved to be among his biggest influences.

Rising star Hirvonen joined 2000 and 2002 champion Gronholm in 2006 to create an all-Finnish line-up at the factory Ford squad, a pairing that lasted two seasons until Gronholm's retirement at the end of 2007.

The then-25-year-old was elevated to the coveted Ford seat following a year largely on the sidelines, after his first shot at a factory drive with Subaru in 2004. Hirvonen arrived with a solitary podium to his name, but ended his two-year spell alongside Gronholm with four wins and a further 14 podiums, finishing third in the standings in both years.

Reflecting on a period of his career that marked him out as a genuine WRC title contender, the 15-time rally winner picks Gronholm as his favourite team-mate.

"With Marcus I learned a lot," explains Hirvonen, who retired from the WRC in 2014. "He was not shy sharing his knowledge or secrets. I really enjoyed it.

"I was really young and was making my way through and he had world championships already, so I don't think he was threatened by me."

Hirvonen credits some of his own success to Gronholm's advice. One philosophy will always stick in his mind: "I started to think a lot about car set-ups and many things about rallying, and with Marcus one thing he was able to show me was that at the end of the day you just have to be able – to put it in his words – to 'go like f***'.

"You need to be confident. It doesn't matter what you put on your car or how you set it up. If you feel happy, you feel confident, then that's it. Keep it simple and go flat-out.

"That helped me, as I realised you don't have to find all the final clicks or damper settings or whatever. If you mentally feel like this is it, that is all you need."

TOM HOWARD

IN NEXT WEEK'S ISSUE

British GP preview

WE TALK TO F1'S THREE STAR BRITS

JEP

ALL PHOTOGRPHY MOTORSPORT IMAGES

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Newly minted with World Cup status, FIA ETCR features electrified tin-tops based on production shells

IS THIS THE MOST ROAD-RELEVANT MOTORSPORT CATEGORY AROUND?

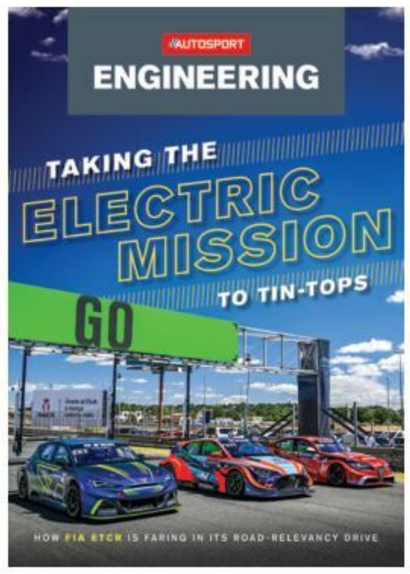
Alongside sustainability, road-relevancy has become a much-parroted term when relating to motorsport categories. Invariably, it's cited when manufacturers arrive or depart a series as automotive trends ebb and flow.

The final destination of road propulsion may be a source of some disagreement, but it cannot be disputed that electric-powered series provide a worthwhile R&D exercise for car makers. Yet where just a few years ago Formula E was the only option, now there are plenty of alternatives on the EV landscape. And one offers something that FE cannot.

ETCR, which this year gained the moniker of FIA ETCR – eTouring Car World Cup, is an electric off-shoot of the FIA WTCR series for combustion tin-tops using the TCR platform. It gives manufacturers the opportunity to field fully electric racers that you could recognise in a showroom – you can't buy a Porsche 99X Electric – and, intriguingly, has eschewed energy management over longer races in favour of short, sharp 'battles'. These demonstrate the cars' full potential in a setting designed to show off their fast-charging capability.

As Marcus Simmons explains in the cover feature on page 14, the series had its share of challenges last year. But its key stakeholders are convinced and ETCR appears to be on its way towards being established as a go-to destination for brands seeking road-relevancy.

Electrification has also arrived in the British Touring Car Championship this year. But while it poses less of a step into the unknown than full EVs, adjusting to hybrids has still resulted in many a late night for teams (p13) to best utilise the new technology in this era of change.



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ETCR

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HYDROGEN POTENTIAL EXCITES TOYOTA

Switch from compressed hydrogen gas to liquid hydrogen planned with Corolla racer

Toyota has revealed ambitions to use liquid hydrogen to fuel its experimental Super Taikyu racer that is now in its second year of competition.

The Japanese marque, which has always championed hydrogen power as a potential alternative to pure electric vehicles in the future, developed a special Corolla Sport that made its debut in last year's Fuji 24 Hours.

After scoring a second finish with the car in this year's edition of the Super Taikyu blue-riband event, Toyota is now working on converting the 1.6-litre engine in the Corolla – taken from the GR Yaris – to accept liquid hydrogen instead of compressed hydrogen gas. If the logistical hurdle of storing hydrogen at temperatures lower than -253C can be overcome, it would roughly double the car's cruising range – it can currently manage only around 12 laps of Fuji per stint – while also vastly reducing the size of the refuelling station needed to replenish the machine's hydrogen tanks.

Toyota showed off what the slimmed down version of its hydrogen refuelling station would look like at Fuji (below), and aims to have the technology ready to test later in the Super Taikyu season, which continues on 9-10 July at Sugo.

Toyota's World Rally Championship team boss Jari-Matti Latvala was part of the driving line-up for the hydrogen-powered Corolla at Fuji. The crew completed 478 laps at an average speed of 56.3mph.

Latvala was keen to take the chance to see Toyota's hydrogen racer in action, since he believes that it could hold the future for maintaining the WRC's appeal in a zero-emissions world. "In rallying, now we are in the hybrid mode, but in 10 years' time we will need to find another solution," said the Finn. "I think hydrogen could be an option because in rallying we can't go full electric. Without the sound nobody will go to the forest or to the mountains to watch."

JAMIE KLEIN AND TOM HOWARD

Toyota WRC boss Latvala was part of crew for recent Fuji 24 Hours

TOYOTA GAZOO RACING

SKODA REVEALS NEW FABIA RS RALLY2 CHALLENGER TO CONTEST WRC AND ERC

Skoda last week revealed its all-new Fabia RS Rally2 car that is set to feature in the World Rally Championship and European Rally Championship.

The successor to the successful Fabia Rally2 and Evo models, which have proven a force in R5 classes and won the WRC2 and ERC titles last year in Andreas Mikkelsen's hands, has been in development for two years and features improvements including an all-new 1.6-litre turbocharged engine. Based on Skoda's road-going RS models, it can produce 289bhp deployed across the car's four-wheel-drive system.

Meeke and Mikkelsen have been involved in development

SKODA

The body has also undergone major modifications. It is now wider to improve weight distribution and stability at the rear, and boasts revised brake cooling, new aerodynamics plus increased suspension travel.

Mikkelsen, Kris Meeke, Jan Kopecky and Emil Lindholm have conducted development work on the new car, which is expected to make a competition debut later this year, across a series of tests on asphalt, gravel and snow.

Skoda Motorsport boss Michal Hrabanek said the Czech marque had "optimised every detail" on the new car. "The aim was to improve the most successful rally car in the world," he explained. "I'm proud of the entire team who have pursued this goal with great dedication."

TOM HOWARD

Mercedes HPP collaborated on F1 tech used in hypercar

MERCEDES-BENZ AG

F1 TURBO HYBRID TECHNOLOGY TRANSFERS TO NEWLY RELEASED MERCEDES-AMG HYPERCAR

Mercedes-AMG formally revealed its 1063bhp AMG ONE hypercar last month, in the first example of its Formula 1 hybrid expertise being translated to a road-going car.

Mercedes' High Performance Powertrains division worked closely with AMG to implement the complex technology, with four electric motors mated to a 1.6-litre turbocharged V6 combustion engine. This "corresponds in its technology to the current Formula 1 power unit" and incorporates MGU-H and MGU-K, but it stays below the F1 rev limit to aid durability and accommodate commercially available fuel.

Further F1 influence can be seen in the four-wheel-drive car's carbonfibre monocoque and bodywork, active aerodynamics and pushrod suspension. It has an electrically driven front axle and can also be driven on electric power alone.

For AMG's 55th anniversary, the Affalterbach company also revealed its most powerful production model to date in May. The 843bhp GT 63 S E Performance also incorporates F1 technology with its electric motor and battery on the rear axle. The E Performance powertrain will be used in other AMG models as it gears up for an all-electric future, as teased in its Vision AMG show car last month.

Bloodhound was displayed prior to 2019 British GP

SUTTON/MOTORSPORT IMAGES

BLOODHOUND PROJECT TARGETS 'NET ZERO' STATUS

The Bloodhound land speed record project has targeted carbon neutral status, its CEO Stuart Edmondson has revealed, to "transform its reputation" and create a separation from "historic fossil fuel-propelled" cars of the past.

The Bloodhound LSR is targeting the 763mph record set in 1997 by Andy Green, and has managed 628mph during testing. But progress has been stalled by lack of funds that prompted a change of ownership, and by the COVID-19 pandemic that thwarted prospective investors.

In an update published last month, Edmondson explained that he is still seeking "a new investor/owner that can join us for the final phase", and expressed hope that improved sustainability credentials would "ensure that Bloodhound is more relevant in today's world".

"We are currently reconfiguring the project to operate Bloodhound as a Net Zero contributor in greenhouse gases," he said. "Utilising green fuels strengthens our ability to inspire the next generation of engineers and create a lasting legacy, as the world pushes engineering boundaries in a sustainable way."

DTM ELECTRIC TARGETS 2024 START AND PRIVATEERS

DTM Electric organiser the ITR is targeting a 2024 start date, according to director of competition and technology Michael Resl.

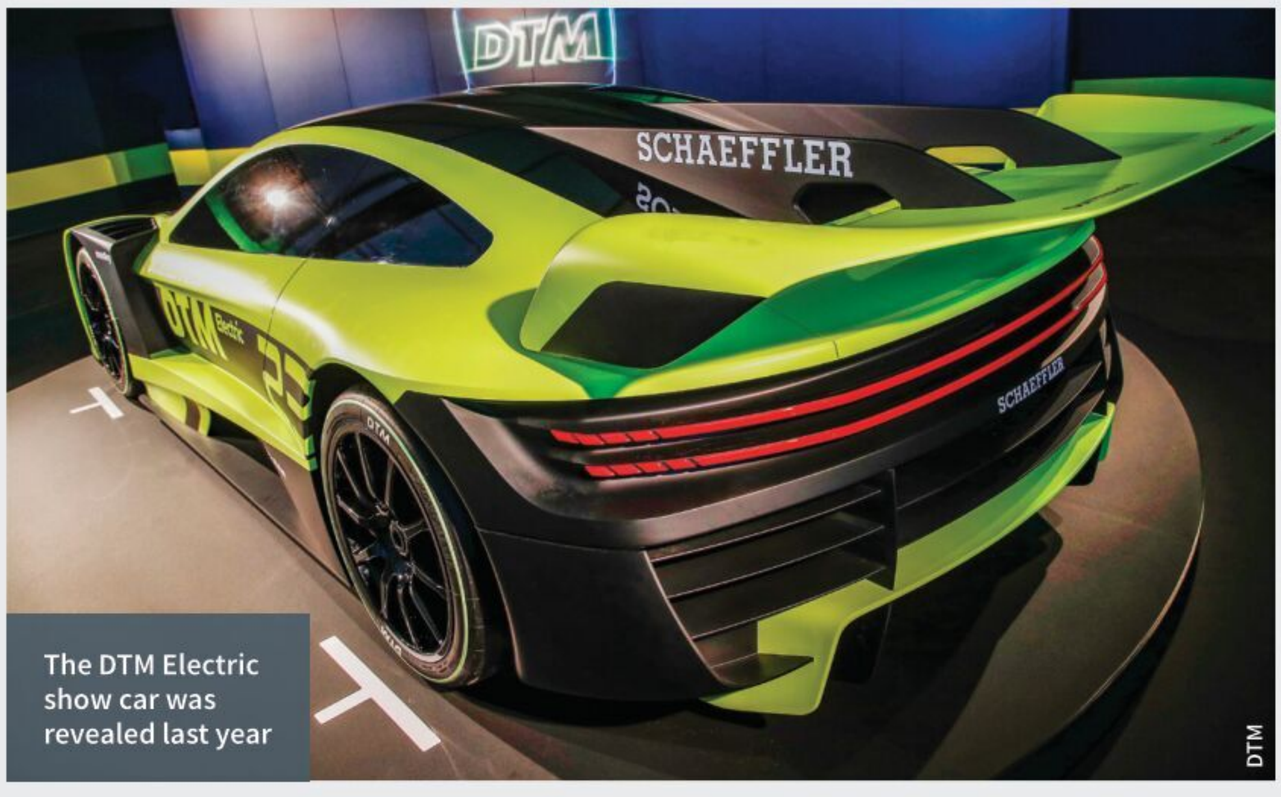
After a demonstration car appeared at the 2020 Hockenheim finale, the DTM last year revealed at the Norisring a model of its 1000bhp concept, which Resl told Autosport "is already very close to the prototype [in] development". He explained that the ITR is close to finalising specifications to start the build of the prototype for testing next year.

"At least for the prototype in 2023 we should be safe," he said. "2024 is the planned target, but with electronic stuff at the moment you're looking for 48 weeks of delivery time, so it depends how many teams we have and how many cars we really can do from a procurement aspect."

But the ITR is open to a 2025 start that would allow manufacturers currently without electric GT offerings to develop products first, with Resl stressing that "we don't want to be rushed into something".

"The luxury with DTM is we have the combustion programme to give the choice to add something, rather than making a decision of how we have to go," he said.

ITR is also seeking private teams, Resl stating that he "would love to see an Uber team" in addition to manufacturer entries.



The DTM Electric show car was revealed last year

DTM

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Play and Drive co-founders Gonzalo Parra (left) and Guillaume Meura show off their creation

MYGALE TESTS ELECTRIC-POWERED FORMULA 4 RACER

French single-seater constructor Mygale and Spanish electrification specialist Play and Drive have tested a first-generation Formula 4 chassis equipped with an electric powertrain.

A prototype powered by a 750v, 220kg battery and 120kW electric motor managed a series of seven-lap runs at Magny-Cours without problems, achieving a maximum speed of 220km/h. A statement said that the test was designed to "validate" the car's performance on a grand prix circuit, where Mygale tester Julien Gilbert is claimed to have "lapped in times close" to those of a conventional F4 car. Company boss Bertrand Decoster told Autosport that it was "a pure Mygale/Play and Drive exercise" rather than the result of a commission from a promoter. The marque held "long discussions about electric F4 without a specific plan" with Ford during its British championship tenure, Decoster said, when the Blue Oval sought to introduce hybrid power.

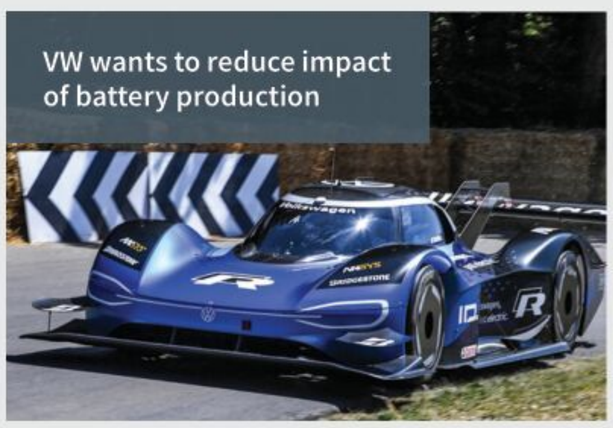
Mygale now plans to develop the powertrain for use in its new M21-F4 racer, but Decoster said it has "no plans at the moment" to race it once competition homologation standards are met.

VW LEADS RESEARCH INTO BATTERY RECYCLING

A new research project spearheaded by Volkswagen is aiming to create a closed loop of raw materials used in batteries that can be recovered and reused several times through recycling.

A VW statement said it has "taken on the coordination and management" of the HVBatCycle consortium with a view to increasing the sustainability and security of supply of cathode metals, electrolyte and graphite used in traction batteries for heavy industrial applications. It is preparing "a holistic view of the recycling processes" to produce "high quality secondary materials under the highest safety requirements" in a scalable fashion that is economical and energy efficient.

VW ended its factory support of all non-electric racing programmes in 2019 after setting Pikes Peak and Goodwood hillclimb records with its ID.R prototype, then in 2020 stopped all motorsport projects as part of a company realignment to focus on sustainable electric mobility.


VW wants to reduce impact of battery production

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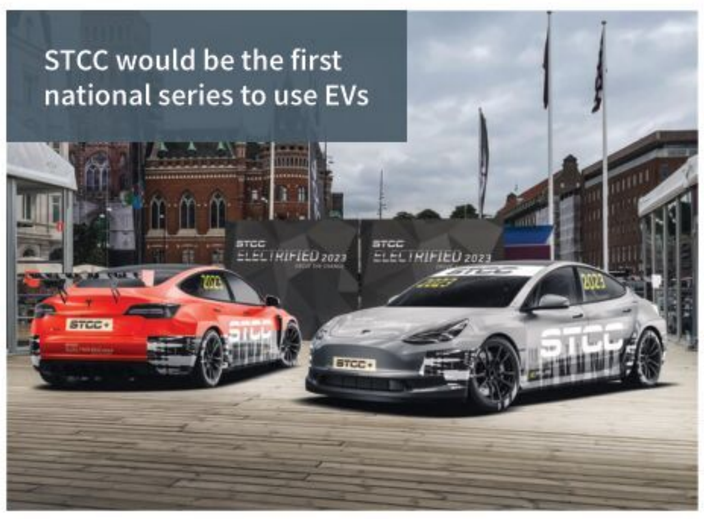

STCC would be the first national series to use EVs

TIN-TOPS IN SWEDEN TO GO ELECTRIC FROM 2023

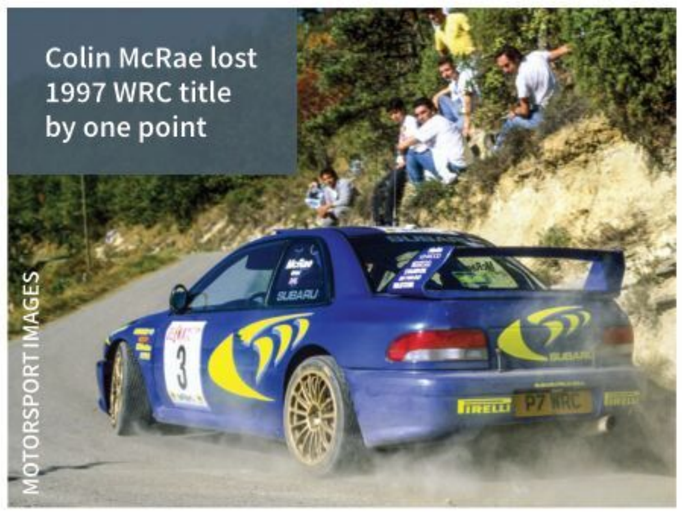
The Scandinavian Touring Car Championship will become the first national tin-top series to be fully electric-powered from 2023 when it switches to a new fleet of cars capable of producing 550bhp.

The machines will be built by Swedish firm EPWR, the R&D arm of the PWR Group that has won three of the past five STCC titles with Robert Dahlgren in the current TCR-based series. A first run of 12 cars, all of which have been ordered by teams, are currently in build and are evolved from the first prototype (PWR001) that was showcased in 2018. The first model shown is based on Tesla's Model 3. Other models and further details, including the powertrain and battery supplier, will be revealed later in the year.

Managing director Micke Bern described it as "the single most important step forward for the STCC and Scandinavian motorsport" since the series then known as the Swedish Touring Car Championship began in 1996. He said: "Our base philosophy is to inspire society to a sustainable transition through spectacular electrified racing."

TCR cars will continue to run as an STCC feeder category at selected rounds in 2023.

IN BRIEF


Colin McRae lost 1997 WRC title by one point

MOTORSPORT IMAGES

SUBARU GETS REVAMP

Prodrive is producing a limited-edition Subaru to celebrate 25 years since its first Impreza World Rally Car for the new 1997 rules. Called the P25, the 400bhp machine promises to "recapture the essence of that very Impreza" and will be limited to 25 models. Original stylist Peter Stevens and Prodrive technical director David Lapworth, developer of the car that Colin McRae drove to five WRC rally wins in 1997, have both had input in the project.

GREENPOWER CEO LEAVES

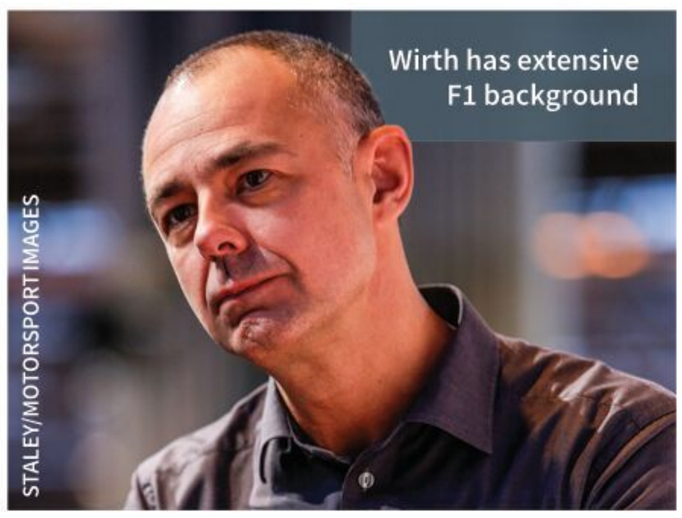
Greenpower, the charity responsible for organising racing-themed competitions that encourage school-age children to pursue STEM subjects, has announced the departure of CEO Paul van Veggel after four years in the role. Michele Augousti has been appointed interim CEO ahead of the 9 October International Finals.

AP'S NEW US BASE OPENS

Coventry-based brakes and clutch supplier AP Racing has opened its new US HQ in Charlotte. CEO David Hamblin said the foundation of AP Racing North America "will directly link us with some of our most important customers and end-users" in automotive and motorsport, including NASCAR and IndyCar.

WIRTH WINS TOP AWARD

Ex-Formula 1 aerodynamicist Nick Wirth's company Wirth Research was a winner of the Queen's Award for Enterprise in the Sustainable Development category in April. Its citation praised Wirth's "major positive impact" in "a range of diverse industries", having used "modelling and aerodynamic skills acquired through the motor racing industry to transition to providing energy solutions" including its Ecoblade and Net Zero CFD capability.


Wirth has extensive F1 background

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DRIVING CHANGE
LUCAS DI GRASSI

CAN F1 TURN BACK FROM ITS HEAVYWEIGHT PATH?

Current F1 cars are the heaviest yet, but is there another way forward that still satisfies key criteria?

I once read that aeroplanes are like people, they get fatter and bigger with time. And you could say the same about racing cars.

This year's Formula 1 cars are the heaviest ever at 798kg, which is a big increase on when I raced in F1 12 years ago.

Back then, the Virgin VR-01 was 620kg including the driver and even lighter before that. Now, several teams are still working to get *down* to that minimum weight limit. This trend has everything to do with how the technical regulations have been written by the motorsport governing body.

It's not a natural route to go bigger and heavier as F1 has done. If it was left free for F1 teams to choose, I'm sure they would go for a lighter car with the most power dense engines available, contrary to what they have now. The lighter the car, the better, for many reasons.

To explain this, first remember that weight and mass aren't the same. Whereas mass is the sum of atoms that make up an entity, or its inertia, which remains the same no matter what force is acting upon it, weight is the product of gravitational force acting upon a mass. Why does this matter?

General common sense tends to think that a vehicle mass will act most on the car in linear acceleration, the heavier the car the slower it accelerates. But actually, at high g, corners are where the mass is really felt: a 4G high-speed corner will have the inertia four times stronger than its normal vertical force. In a nutshell, the more g-force a race car can generate in a corner, the more the mass has a negative effect. Of course, this is oversimplified as centre of gravity, weight distribution and other factors must also be taken into consideration.

Another hugely negative effect of a heavier car is in a crash. The total car energy to be dissipated is a function of the mass and the square of the speed. The heavier the car, the worse the crash.

Lightness was a key Lotus strength, and can now be pursued without compromising safety

Current F1 cars are the heaviest ever and tip the scales at 798kg

BINGHAM

The effect weight has is most clearly demonstrated by the difference in lap time between qualifying and the opening laps of a race on full fuel, when the same car is several seconds per lap slower. As soon as you don't have as much weight, the car corners better, accelerates better and brakes better. It comes alive. The difference for the driver is very clear.

If you have understeer, this only increases with more weight. It's the same with oversteer. When you add weight, it's always a negative thing. That's why you want the car to be as light as possible and why teams design their cars with the aim of being under the minimum weight limit so they can position the ballast in the most strategic way.

This principle doesn't only apply to F1, weight is important across all categories. I remember Alex Wurz and myself put a lot of pressure on the Automobile Club de l'Ouest to incorporate the driver weight into an LMP1 car's minimum weight, so that from 2015 any line-up with an average weight under 80kg had to carry ballast. The LMP1 base weight back then was 870kg without driver and fuel, and by having a driver that was 20kg lighter

ALL PHOTOGRAPHY
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you could go a second faster per lap at Le Mans – sometimes way more than the balance of performance between the cars or the driver talent itself. Getting very light drivers was a huge advantage for any sportscar race.

Design legend Adrian Newey has said that we should be looking to get cars as light as possible and not the other way around, and I agree with him. I think F1 should be the pinnacle for the highest-performance vehicles on the planet. They should be extreme and the technical rules should facilitate some advantage for pursuing optimal lightness.

In the past, without simulation tools and sophisticated production methods or even safety rules, F1 designers who focused on this often had problems with the reliability of parts, which resulted in accidents. But technology has improved to a point that we can absolutely reconcile having lightweight cars without compromising safety.

In Colin Chapman's day, they had to build the part, go to the track to see if it broke, then modify it and go again. Now we have the sophisticated modelling tools and tests so you can ensure it has equivalent strength properties and the safety that is required. That's also why cars are more reliable and you rarely see suspension failures, even if it is produced from lightweight materials, because technology has evolved so much.

Gen3 Formula E shows it is possible to go smaller and lighter

We shouldn't just accept that cars have to become heavier as technology evolves. We have a very important example of this in the new Gen3 Formula E car, where the FIA did a fantastic job to make it smaller (70mm width, 160mm length) and 80kg lighter than Gen1. It would have been easy to make the car heavier with more power, as is the general trend with electric cars, so I was positively surprised and pleased with the decision to reverse that with Gen3 and push sustainability in real, measurable terms. This shows it's ▶

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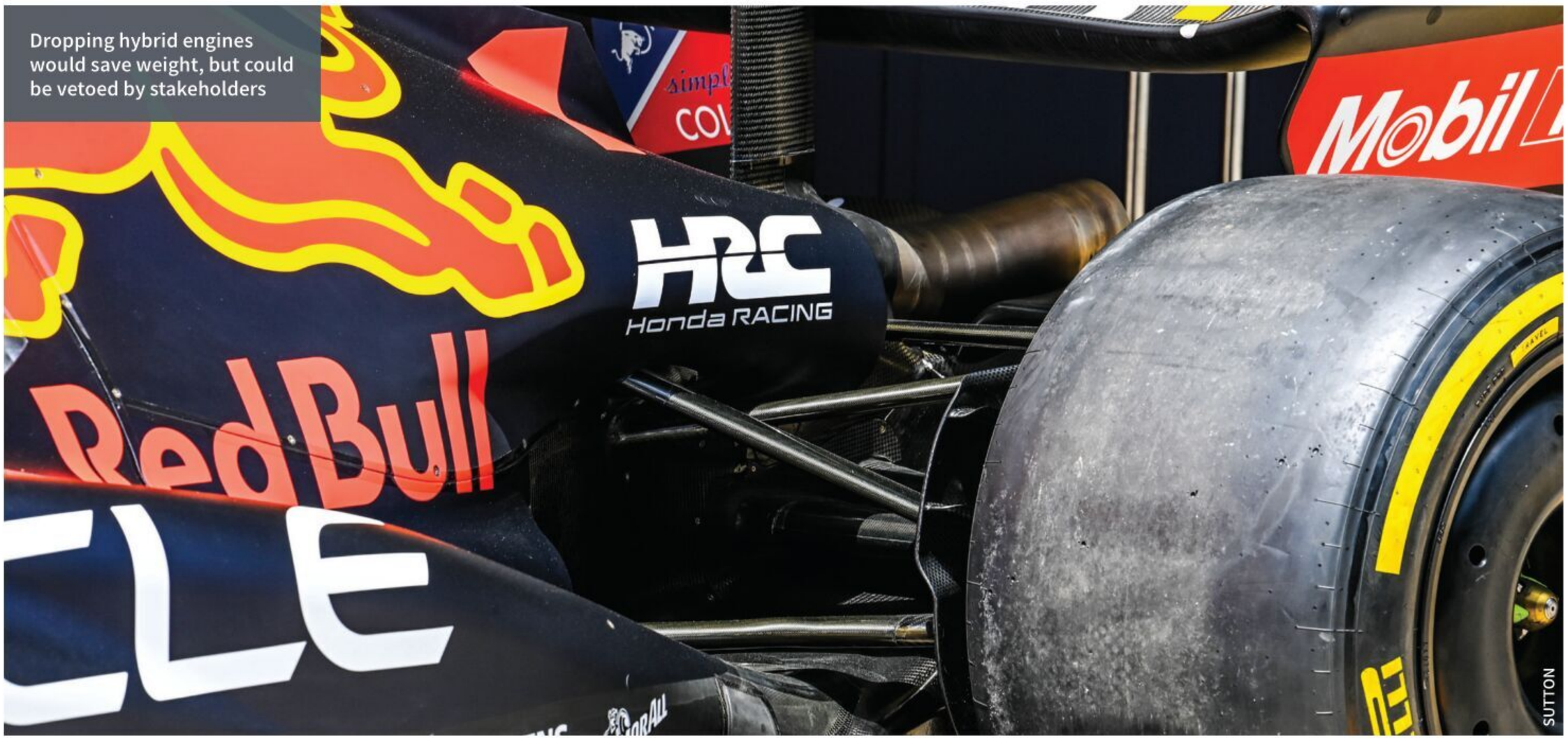

Dropping hybrid engines would save weight, but could be vetoed by stakeholders

SUTTON

possible to change course, but you have to create the right environment and rules for it to work. The question with F1 is, what would a lightweight formula look like and would it be feasible?

You would have to change the complete philosophy of F1 to have performance by lightness, because a big factor in F1's weight increase is the complex hybrid engines. And clearly, it wouldn't be cheap to make these extreme materials, so F1 would have to decide where the most value lies within its cost cap. But going down a lightweight path would surely have a greater benefit to the wider world than the F1 hybrids in use today.

There's not a single component today in an F1 car that you will see in a road-going Toyota Corolla or similar, and it's not a surprise that the MGU-H was dropped for the new 2026 regulations. It was a flaw since the inception of the rules to have such a complex powertrain to chase efficiency, as it would have never reached normal road cars with hybrid technologies.

For example, the reason planes aren't electric or even hybrid today is because the extra weight of the batteries makes no sense to carry on a long flight for the energy benefit. And I believe, if an F1 car can go as fast or faster without the weighty hybrid than it would by using the hybrid to harvest and to deploy power, then the idea of having the hybrid doesn't make sense.

> "A lighter car would need less fuel and it's also much easier to ship it around the world"

It wouldn't be popular with key stakeholders who have invested heavily in the hybrid engines, but for me motorsport should have a very clearly distinguished definition of what purpose is served by the top racing series so they don't overlap. F1 should focus on maximum performance without compromise, Formula E should focus on efficiency, and other series like the World Endurance Championship on road-relevant technologies. That would be in my view much more dramatic and much more towards the right mentality of what F1 should be about. Also, for real gains in sustainability, having a lighter car and equipment would mean much less emissions from logistics, for example.

If there's no clearly marketed sustainability angle to F1, then it will be less attractive for sponsors and automotive manufacturers to be associated with it. Clearly, abandoning sustainability to build the most exotic cars ever isn't realistic. But there's a case to argue that a renewed focus on lighter cars would satisfy sustainability criteria and still be a testbed for use in road cars – if F1 was willing for it to happen.

Running lighter cars means fewer parts being produced and less energy used for making those parts. A lighter car would need less fuel and it's also much easier to ship it around the world. Even if the actual car doesn't account for so much, it would send the right message.

As Europe will ban the sale of combustion cars by 2035, there is a clear pressure to focus on more efficient hybrid powertrains if F1 needs to stay relevant to the car market. But it doesn't necessarily need to, because it is already not relevant at all for commercial cars. Maybe F1 should focus on the path of extreme technologies development that can be relevant to aerospace, lightweight construction or simply pure extreme vehicles that will use the best technology for this purpose. It will be very interesting what the future will bring. ■

Should F1 focus on lightweight performance rather than hybrid development?

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ENGINEER'S VIEW
JOHN WATERMAN

BOOSTING A BMW WITH NEW BTCC HYBRID RULES

The race engineer for four-time BTCC champion Colin Turkington led West Surrey Racing's work on implementing the hybrid system onto the BMW 330e M Sport

Louvres have been added to the bonnet to keep temperatures down

Developing a car for the hybrid era of the British Touring Car Championship has been a challenging but satisfying job. We introduced the new 3 Series BMW for 2019, and were thinking of changing the cooling package at the end of 2020, ready for 2021, but when the hybrid was announced we thought if we do it then, we'd have to do it again for the hybrid. So, we kept the car as it was, and then hybrid gave us a new project to take to BMW for 2022.

I represent WSR on the BTCC's Technical Working Group, and we'd already started having meetings about hybrid in early 2020, so started to thrash out positions for hybrid-related components with Cosworth and TOCA for front and rear-wheel-drive cars. We were talking about it for a good year or so before we even started designing parts for the 330e M Sport.

The first thing that had to change was the bellhousing, because unlike front-wheel drive, which have a modified Xtrac casing to take the hybrid motor on the outside of the casing, we were putting it in line with the gearbox, so it was a new Xtrac casing for us, and a new bellhousing because of that. Unfortunately TOCA's centre of gravity calculations pushed the battery for rear-wheel drive as far forward as it could go. Eventually we got them to turn the battery around – it was supposed to be facing the other way, but the control unit (MCU) was going to be in our engine bay! Because that meant some of the weight came backwards, they had to compensate for front-wheel drive, so now front-wheel drive has a maximum rearward and minimum forward position whereas RWD has just one position.

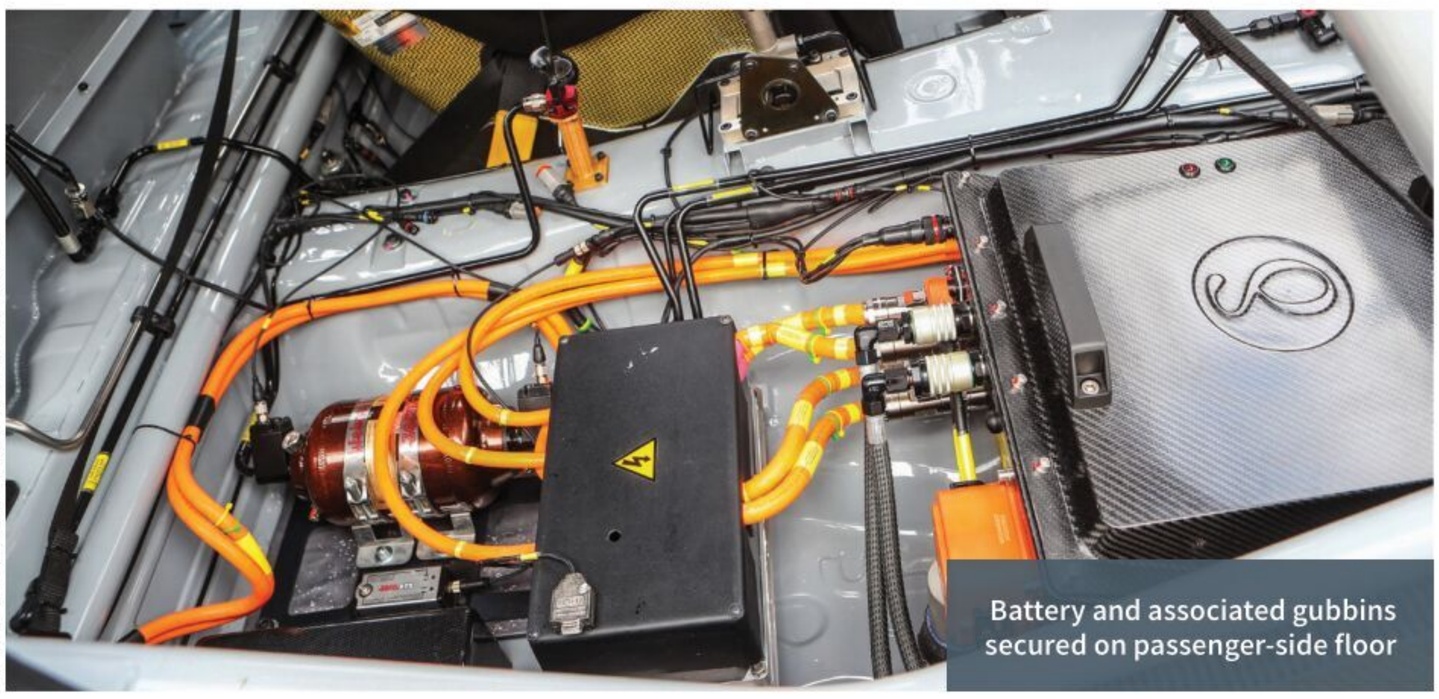
We didn't get the hybrid kit until late February, but we had all the drawings from Cosworth, so I just designed all the bracketry to hold the battery in place in the passenger footwell, and all the other stuff that goes with it. We had to move electrical boxes, so had to redesign trays to make the boxes stack – we don't usually have them stacking, but we were running out of room basically. It was a packaging exercise more than anything.

There was a rear-wheel-drive hybrid test car – the Ciceley Motorsport 1 Series BMW, built and supplied by WSR. But as Cosworth ran the test, you weren't allowed to look at any data, and the running was in winter temperatures, so there have been some problems this season. The bracketry for the EV motor was just holding it in line with the gearbox on a transverse engine. For the rear-wheel-drive because we're in-line, it turns the motor 90 degrees so now that little bracket was trying to stop the motor going backwards and forwards under braking and acceleration. Coupled with some early tolerancing issues, the whole unit would flex. These issues became apparent when we started running at the first round and I had to quickly come up with a solution to support the bracket better, to stop everything flexing.

> "The test running was in winter temperatures, so there have been problems this season"

From the first event it was also apparent the gear teeth that drive the EV motor were not up to the loads. At Thruxton the gears in RWD cars suffered cracked idler gear teeth. The drivers had no hybrid deployment during races. Xtrac responded very quickly and improved the design and material to eliminate any further issues. There's also been an issue with heat-soak to the EV motor when the car's in the garage. So we've used the driver fan to duct air into that area on the motor, which seems to have worked out OK so far. The drivers are now cooled via a hose from a NACA duct in the rear window.

We not only did the hybrid this year, but we also repackaged the intercooler, radiator and their cooling ducts for better airflow under the bonnet. We've got louvres in the bonnets now; it's all to do with airflow to keep the charge temperature down because we were suffering in races with it getting hot when we were up behind cars. I think that, plus a little bit of aero work that we've done, has been another step forward for the car. ■



Battery and associated gubbins secured on passenger-side floor

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AMPLIFYING THE ELECTRIC MESSAGE

Touring car devotees have long trumpeted the discipline for its road-relevance. Now that manufacturers are increasingly going electric, how is ETCR getting on in its first season as an FIA World Cup?

BY MARCUS SIMMONS

PHOTOGRAPHY **ETCR**

"I've just had my hair done, so now I look perfect for the weekend!" Busy man that he is, touring car superstar Mattias Ekstrom has managed to find time for himself in the few days between the Hungaroring and Jarama rounds of what is now known as the FIA ETCR – eTouring Car World Cup. So far this year he's competed on the Dakar Rally in Audi's new electric contender, he's opened his ETCR title defence in successful fashion, he's popped in to contest a rallycross event in his native Sweden, and his EKS operation is preparing to run Audis in the World Rallycross Championship – *and* it's now operating the works Cupra ETCR squad.

So he's a freshly coiffured giant of versatility in motorsport driving, as well as a team boss, plus something of a spokesman for the intriguing new world of ETCR, which got off the ground in 2021 as Pure ETCR, and for 2022 earned FIA World Cup status alongside its sister series, the established FIA World Touring Car Cup. That inaugural five-round campaign ended with Ekstrom defeating Hyundai's Jean-Karl Vernay in a dramatic finale at Pau-Arnos.

"When you do a championship for the first year, everything new, you have to try and read the situations pretty fast, which I think we did," he reflects. "So it was a good time. One thing... I wouldn't say it's disturbing, but you wish there would be more cars on the grid of course, but I think every championship these days will have to fight quite hard for that. When the cars are electrical-driven it's fair to say that there will be some resistance from fans to accept it for a while. But bottom line it was good racing, and you always enjoy it more when you win than when you are last!"

Getting cars onto the grid – or, in the case of ETCR and its quirky sporting format, it's probably fairer to say into the paddock – will not be the work of a moment. It may be electric, it may have shiny new toys such as the Energy Station and Hot Zone, but at its heart it's good old-fashioned touring car racing. Formula E, and its Extreme E offshoot in which Ekstrom competed in 2021, relies on spec chassis. ETCR, like its conventional TCR cousin that has changed the face of global customer touring car racing since its kick-off in 2015, is based upon production shells converted into racing machinery.

It's the brainchild of tin-top visionary Marcello Lotti, whose WSC Group created the production-based TCR category that since 2018 has been the foundation of Eurosport Events' flagship FIA World Touring Car Cup. Then came Lotti's ▶

ETCR concept, for which Eurosport Events gladly took on the promotion of a series alongside its WTCR competition.

When we investigated ETCR this time last year, just before its inaugural event, Eurosport Events' Xavier Gavory, who acts as series director for WTCR and ETCR, described Lotti as "the pope of touring cars". Pontiff he may be, but you need faith. "Did everything go as we wanted it to?" asks Gavory rhetorically of 2021. "Definitely not, because the disruption we had to face with COVID was pretty big. Lack of raw materials, delay on the kits, time needed for the manufacturers and WSC to put the cars together. Things were not easy because we are still in a disrupted world with logistics, with the crisis of the automotive industry, the lack of raw materials and supply disruption. We are living in a very complicated world, and when you launch a new series, which has a different technology to the other motorsport series, that depends on supply and battery kit delivery... and you know the crisis of superconductors and so on."

So ETCR kicked off with two examples each of the Hyundai Veloster ETCR and Cupra e-Racer, each entered by factory squads, as well as the privateer Romeo Ferraris operation running Giulia ETCR machinery but without Alfa Romeo nomenclature. That's six cars, but the series' sporting format prescribes each to have two drivers, allowing a total of 12 contestants split into two separate

> "We run production cars – they are the same you can see down the street"

pools of half a dozen throughout a race weekend. Clearly, as Ekstrom points out, we could do with more. And, with manufacturers such as Honda, Audi and Lynk & Co active in WTCR, there are more potential contenders already within the WSC/Eurosport family.

"I'm confident and we are working with WSC on that topic," says Gavory. "Now all the manufacturers have turned electric since 2020, they have some electric products that match the touring car category, which was not the case in the past. We run production cars – they are the same you can see down the street. We hope and trust the current crisis for the automotive industry will leave some space for some initiative to be taken for manufacturers to give some visibility to their cars. I think manufacturers as well needed to see this FIA format and Cup before they committed.

"We have those raw materials and supply, which is very complicated to manage. That doesn't help because when you register you have months of delays before you put your cars together because you have to get your kit, batteries and so on. The context is extremely complicated but the interest is definitely there. On our side as a promoter we are confident because we have a very good product, we just need to be patient because the world is very complicated at the moment, and things will come because electric is the future, it's even the present because now the cars match our category. Now there is a real interest around the series."

More manufacturers are being courted to join the grid

Iconic Pau street circuit deemed a perfect place to showcase electric touring car series

Ekstrom wanted top talent like Tambay in his team

When we sought an audience with 'the pope', Lotti was happy to expand: "What I can tell you is I have some agreements signed. We are working with other manufacturers that are looking at ETCR. I am optimistic to see at least one more next season. I have agreements signed on NDAs, some are already starting to work with our technical department before any final decision."

The supply crisis in the automotive industry has also delayed any chance of ETCR being adopted for national and regional series. "We lost around a year and a half from COVID and everything," expands Lotti. "We don't think that today we are in a position to start production for more cars, because of the delays in the delivery of any parts you need. Parts for the kit and for the chassis. We don't believe to accelerate and start anything in 2023. Clearly we have a white sheet of paper in motorsport and we all have to write on this because it's completely new technology to develop. Day by day there will be a lot of new projects using EVs for motorsport. We created TCR probably close to the end period of the aspirated engine, and it became a leader in motorsport – and there was a lot of competition around. And you will write a lot about new electric series in the next couple of years, because everybody is looking for that."

If Lotti is the pope of tin-tops, then British Touring Car Championship chief Alan Gow, in his role as president of the FIA Touring Car Commission, could perhaps be described as this form of the sport's ultimate deity. "The Commission was involved in the ETCR right from the word go, from the very concept through to its execution," he explains. "We had to approve the regulations and all the other guidelines for it. It absolutely ticked all the boxes and that's why it became a World Cup-status event.

"Everything done in the last couple of years has been in difficult circumstances. Their expectation level was set very realistically for the first year and they delivered it against that. They had a limited number of cars and drivers and that's perfectly right for the first year in any brand-new concept, and it'll only grow from there."

Gow's first live experience of ETCR came at this season's opening round on the streets of Pau – the venue in France is exactly the sort of place a series such as this should visit. "They look great, they're obviously very quick, they actually sound quite good even though you don't normally associate electric cars with sound," says Gow. "The technology in there, and what they've done to produce those cars is very impressive. They produce good racing. First impressions are always the best, and they were better than what I expected."

Perhaps one contributing factor is the intake of star drivers for 2022. With Ekstrom's EKS operation taking over the Cupra squad from Zengo Motorsport, the Swede drafted in Adrien Tambay and Tom Blomqvist, both of whom he knew from the DTM, in which he's a two-time champion. Romeo Ferraris appointed Ekstrom's fellow DTM title winner Bruno Spengler and Maxime Martin. Hyundai put its WTCR star Norbert Michelisz on double duty.

"Last year the field was OK," says Ekstrom. "But this year it's gone up another two levels I would say – the new guys are all really fast. The grid is getting closer and closer all the time, and you can see that the rivalry is beginning to build up. You could dominate last year, but now it doesn't feel like this at all. In a quali lap you might have a little edge [from experience in 2021], but I know the others will also improve and in the races it's very equal. I'm more humble than ever that this will be a very competitive season."

Over the opening two rounds in 2022, Ekstrom took overall ▶

THE FORMAT: CHANGING A FEW FUSES

Xavier Gavory, the series director for the FIA ETCR – eTouring Car World Cup, lapses into a reassuringly stereotypical French analogy when he proclaims of 2021: "All the ingredients were there, and the food was already very tasty! But those five events were used as a stepping stone for us to something bigger, something more credible in the motorsport universe, and this next thing was the World Cup and the FIA status."

With this in place, there's been some tinkering to the format for this year. In 2021, each of the two six-driver pools went direct from free practice to round one, for which they were randomly drawn into two three-car 'battles'. Round two consisted of two-car battles, with the winners from the first round facing off against each other and so on. Then came the max-power 500kW time trials, before the six-car superfinals.

For 2022, the time trials have become qualifying and are now the first competitive element. As well as awarding points, based on a driver's best time over two single-lap qualifying sessions, qualifying determines who goes up against whom in the first round of racing – the quarter-finals – with the top three in each pool of qualifying in QF1, the bottom three QF2, which gives fewer points. A football-style promotion/relegation system is in place for the next round, with the top two from each pool's QF1 taking on the winner of QF2 in semi-final one, and the remaining three taking part in SF2. The results of these then form the grid for the superfinals. Oh yes, and plain old Pool A and Pool B have become Pool Fast and Pool Furious, although to older UK followers of tin-top racing the latter just brings to mind John Cleland after Steve Soper's taken him off.

"We wanted to have three cars minimum on track because when there's only two cars it's a little bit weak probably," explains Gavory (left). "Three cars you can have a proper fight. The purpose was to make sure that people fight in every single session and there's no calculation. Also they have two sessions of quali, because they're super-hard to drive at 500kW, and we wanted to give them a second chance."

The insight on the TV coverage has also improved. "The commentator as well can use the team manager and team-mates as consultants directly during the programmes in a place that we call the Hot Zone," says Gavory. "Also, we are not waiting for the cars to arrive in the pits and the guys to remove their helmets. At the Hungaroring it was brilliant. We had an exchange between Maxime Martin and Mattias Ekstrom, and on their in-lap they were speaking together in their cars: 'It reminds me of the great old days when we used to fight together [in DTM].' That's the kind of interaction that does not exist anywhere."

> "The purpose was to make sure that people fight in every single session"

victory in Pau, before Tambay triumphed in Hungary. Of the Frenchman and Blomqvist, the Swede says: "In testing they have been faster than me several times. That's the good thing when you're a team owner — you look on things differently. If you run the team, you want the team to do well, so you hire the best drivers you can, you give them all the support they need, and you really hope that you as a team will be successful. The bottom line is it would be great for me if I win another title, no doubt about that, but I wouldn't be happier to hire some guys you don't believe in so you are the number one. That is too boring and it's not me."

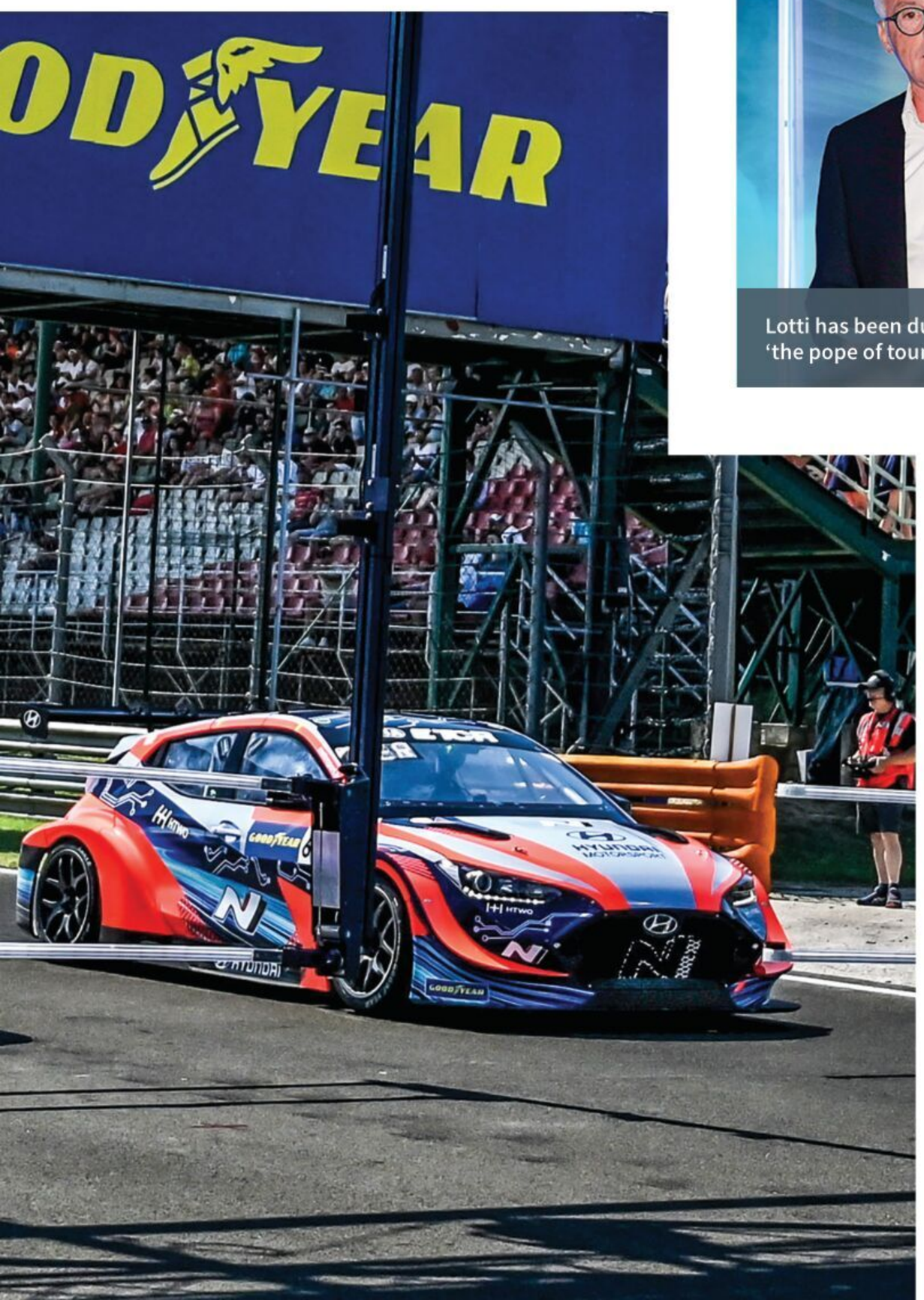
Ekstrom's office: the Cupra e-Racer cockpit

"One of our missions is to show that electromobility is successful, easy, fun"

While Ekstrom was winning in Pau, hopefully a large cross-section of the crowd was getting enthused about electrified cars. "We had a lot of people around the Energy Station [which charges the cars from 10-90% in 75 minutes] to show you can recharge your cars in a very easy way," says Gavory. "It's very complex on a technological standpoint, but it looks very easy and that's the goal we want to showcase: to recharge your electric car you don't need ages. We could have recharged the cars in the pits, hidden from the public, but one of our missions is to show that electromobility is successful, easy, fun, and the Energy Station is part of the story.

"Pau is an iconic place and they did things in a pretty clever way, because after a few years' inactivity they wanted to celebrate the new technology and more sustainable motorsport, so it was very green-oriented. Most of the support series were running HVO or biofuel, we had a hydrogen car on track, for the first time the ERA championship for entry-level single-seaters, we had ETCR. Over the weekend we had 100,000 people on site with beautiful weather. To launch the series, that was as good as we could have expected."

Lotti has been dubbed 'the pope of touring cars'



Naturally, a category such as ETCR can get tripped up on logistics, and the round at Turkey's Istanbul Park venue, scheduled immediately after Pau, was postponed until November. "The goal with Turkey is to go to the streets of Istanbul [in 2023], because we want to have a mix of permanent and street circuits," states Gavory. "With some unexpected things and events happening in Turkey, the conditions were not united to get there on time, and it was a very last-minute postponement. That was very hard for us."

A round on the streets of Istanbul is exactly what Ekstrom believes the series should be doing. He's not 100% convinced about the calendar, which after Jarama heads to Zolder in Belgium, Vallelunga just north of Rome, and Inje in South Korea. "The championship is still young," he says. "You have to have a good mixture where you go so you can present yourself to a new audience, and where there already *is* audience, because to go and try and create a new platform is difficult. I would love to go with these cars to Norisring, because that is one of the places that was always fully packed, and people that come there have a totally different view of motorsport from if you go to a classical track in the middle of nowhere. Formula E going to cities is great, but it's also easy to see that they are struggling to get spectators. You have to be very selective and smart to position yourself at the right event. You have to do a bit of cherry-picking to make something popular."

And potentially, on the success of series such as this lie the prospects for motorsport in general. Touring car racing, after all, has always been about the public identifying with the cars as something they can buy for the road.

"This for me is an advantage for touring cars, not only because it's electric," asserts Lotti. "Touring cars is multi-brand production cars. I am expecting to see from ETCR more and more models will be homologated in the future coming directly from EVs."

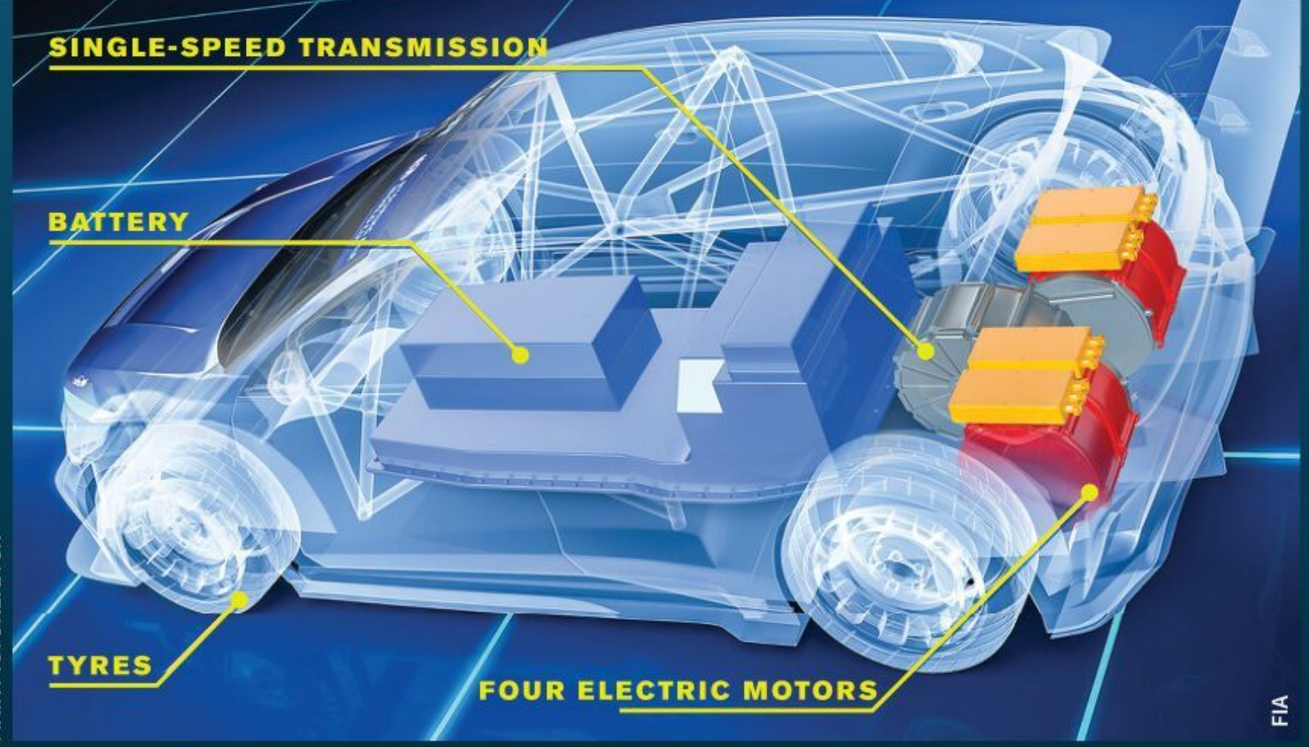
"It's the relevance to the road that's the most important aspect," adds Gow. "As we inexorably head towards a greater electrified future with road cars, then obviously racing has to reflect that. And ETCR has done exactly that. It's entirely relevant to what's happening in full-electric road cars." ■

P20 ETCR TECH FOCUS

ETCR: UNDER THE SKIN

We take a look at the significant elements of ETCR machinery, and ask reigning champion and Cupra team boss Mattias Ekstrom to talk us through them

BY MARCUS SIMMONS

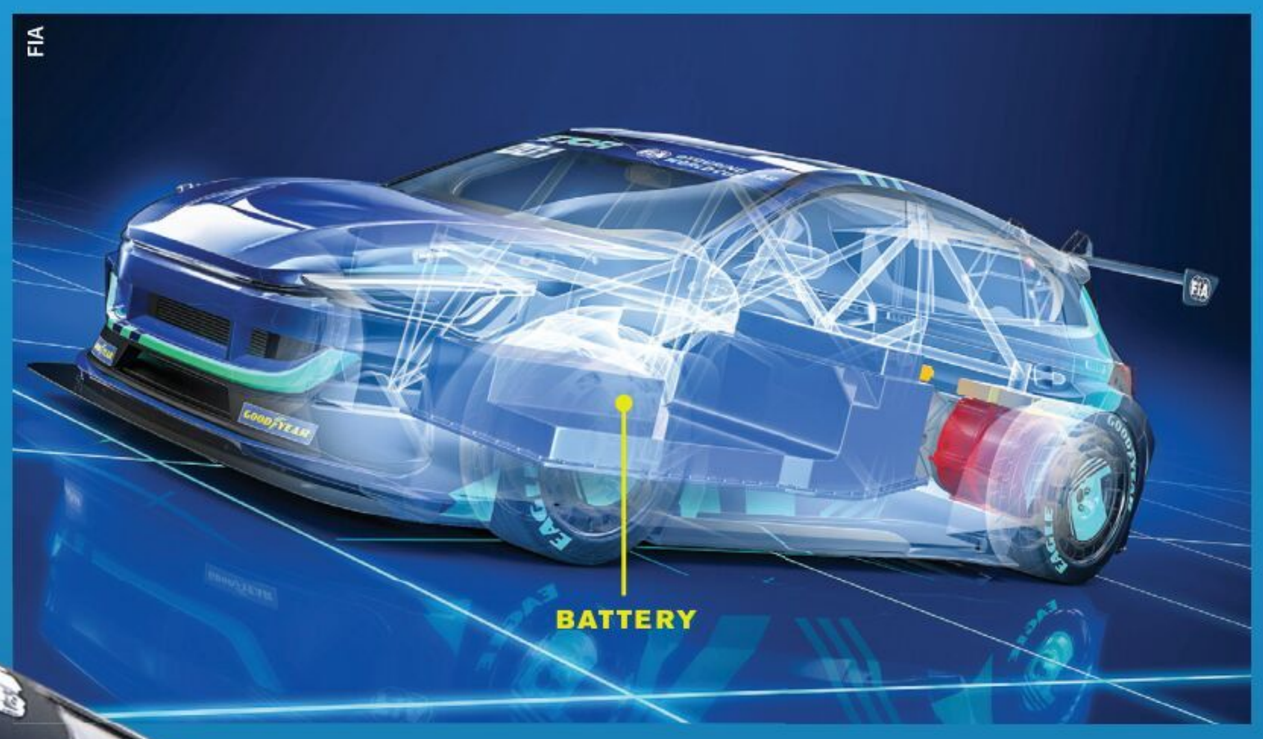


MAIN PICTURE: ETCR

FIA

MOTORS

The ETCR machines have two Magelec Propulsion motors on each driven wheel on the rear axle, feeding energy from the battery. These produce 300kW in normal circumstances and 500kW for qualifying and the 'Power Up' boost phases of racing, with an eyewatering 900Nm torque up to 12,000rpm. Obviously, this creates a lot of weight, but at least there's bags of power. "The car feels a bit overpowered in quali [power] mode," acknowledges Ekstrom, "and then you fit new tyres and it does the job for a lap, but still to find the brake points and to do that over very few laps of practice and then to nail it for a quali lap, that's a proper challenge. The motors and the inverters and the battery, they are heavy. We have a one-make drivetrain, and I think the development of weight and performance are going to be insane in the electric area. This unit we have now was developed some time ago, so for sure if you make a new updated version it would be lighter and more efficient, and more expensive probably!"



BATTERY

Ex-Formula E supplier Williams Advanced Engineering produces the mid-mounted 800V battery, which allows for a peak power of 500kW (670bhp). This lasts for up to 40km before being recharged at the Energy Station in the paddock. "So far we haven't had any big issues, but everybody who is in this industry knows that the battery is like a human – you can have a good day or a bad day," points out Ekstrom. "Sometimes they have to service the battery and maintain it. The performance you take out, and the cooling you ask for, and the speed of charging and all this, you have to have some high-tech kit to do it, and also there is a lot of dry ice we use to cool things, because if the motors and the batteries are too hot you get even more problems. I think that's where a lot of the development will happen – you will have to improve the cooling of engines and batteries and inverters and all this and get rid of the dry ice."

STATS

DRIVETRAIN
Four electric motors
single-speed transmission
rear-wheel drive

STANDARD POWER MODE
300kW / 410bhp

PEAK POWER MODE
500kW / 670bhp

TORQUE 900Nm

REVS PER MINUTE 12,000

BATTERY CAPACITY
65kWh 800V

WEIGHT 1800kg

0-62MPH 3.2s

TRANSMISSION

The single-speed Magelec Propulsion transmission gives linear acceleration. This led to some dizziness from drivers in early testing! "You have the instant power when you ask for it, no gears," enthuses Ekstrom. "You need some time to get used to the braking to find your right corner-entry speed because you don't have a gear indicator or changing-gear procedure. Except for that I've started enjoying electrical cars. You don't have to speak about anti-lag, you don't have to speak about which gear are you in and torque. You are pretty much sorted. Here it's more about traction control, and settings and other stuff. I feel it starts to be my daily life."

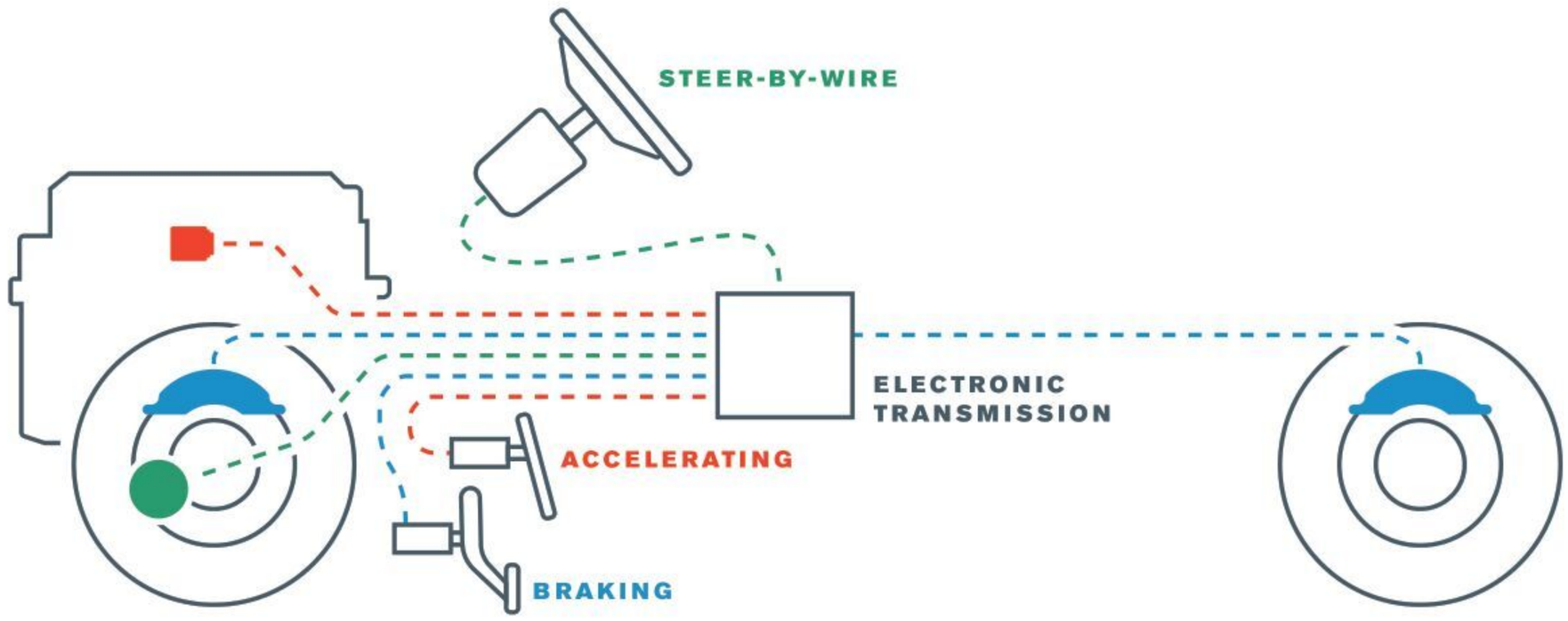
CHASSIS

Like the TCR cars in the sister World Touring Car Cup, the ETCR machines are built up from genuine production models. "You can do a lot on the cars," says Ekstrom. "To have a total one-make is difficult [to develop], like Extreme E. I like the freedoms that we have in our category. To build and make a car run I wouldn't say is too difficult. To make anything go a bit faster than everyone else, that's where the trick lies. Then it becomes interesting what concept or set-up you have and so forth. That's a real challenge."

TYRES

The ETCR cars run on a bespoke treaded all-weather Goodyear tyre, but there is a full-wet compound on standby just in case of adverse weather. "On a normal 20-degree day it works super-well, but when you get hotter weather they get very warm – it changes so much with the temperature," says Ekstrom. "And when it gets cold it [the tyre] is very slippery. I would say it's an all-round tyre until intermediate [conditions], but when it becomes full wet you need something better to keep things safe."

STEERING TO
THE FUTURE



Steer-by-wire technology from Schaeffler-Paravan has removed the need for a steering column and could change car design forever

BY JAMES NEWBOLD

It doesn't take an engineer to recognise that racing cars have changed a great deal since the dawn of automobile racing. In regard to safety, modern cars are virtually unrecognisable. But many core tenets of those very earliest racers have remained the same, even as the rise of electrification and the push towards automation has brought increased complexity.

Until recently, steering systems could be counted among those elements. A mechanical connection between the wheels directly manipulated by driver inputs had been a design prerequisite since day dot. But German company Schaeffler-Paravan changed all that with its steer-by-wire system, which does away with the need for a steering column or any mechanical connection to the steering.

It instead transmits steering commands digitally utilising sensors and cable, working in a fashion akin to a driving simulator, and is now being used in competition in the DTM, the national-level GTC Race series and Germany's national rally championship, with its debut in the IMSA SportsCar Championship coming this weekend at Watkins Glen in Winward Racing's Mercedes-AMG GT3. For Schaeffler-Paravan's chief of technology Hubert Huegle, it's a "historic" undertaking.

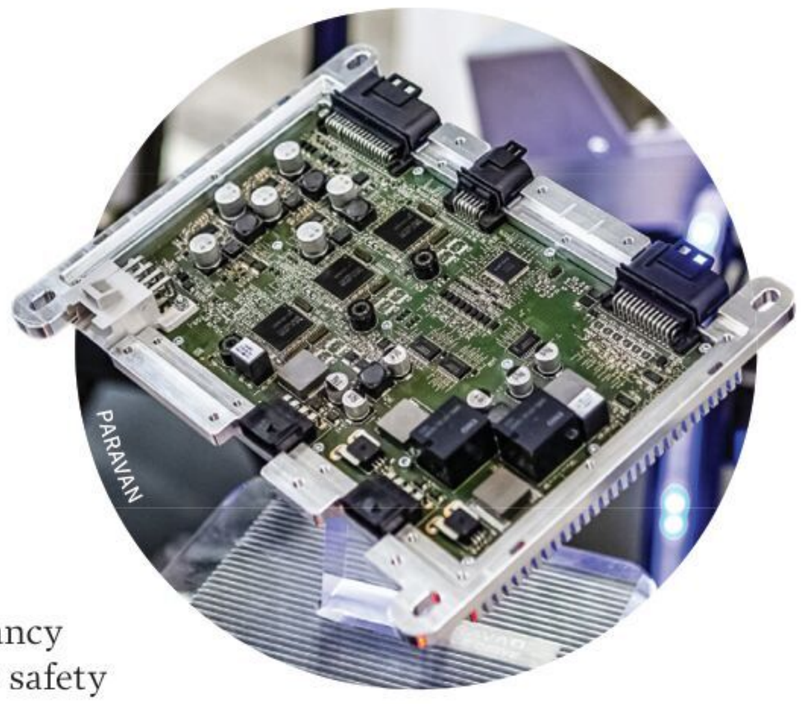
"After 120 years we remove the steering column," he says. "I think not everyone is clear what we are doing here."

THE STEER-BY-WIRE STORY

The system was originally devised by Roland Arnold to allow disabled people with restricted motor skills or lower residual strength to drive safely. The idea was germinated by a chance meeting at a motorway service station with a woman struggling to get her quadriplegic husband into their car, and her wish for him "to ride next to her in the car and not be transported like a piece of luggage in the boot".

"People can also drive a wheelchair with a joystick, why shouldn't that also be possible with a car?" says Arnold, who started Paravan in 1998. He has since built a "holistic" package that includes its PR50 wheelchair that can be used as a seat, a lift device to help disabled people get into their cars, and the so-called Space Drive system – of which steer-by-wire is a part – which also allows the brakes and transmission to be controlled electronically.

It is anticipated that the steer-by-wire technology will form a significant part of automated driving solutions in the future. So far, it boasts over a billion miles of accident-free usage on the road thanks to a triple redundancy mechanism that uses two safety systems for back-up in the event of one component failing. As Arnold points out, "for people with the most severe impairments who drive with a joystick or accelerator-brake slider, the system must be absolutely fail operational".



> "It's super safe, we haven't had one single problem"

Space Drive is the only such system homologated for road use, having had to pass stringent quality-standard tests ECE-R79 and ECE-R13 to gain approval.

"I'm completely relaxed when the cars are running on-track," says Huegle, who was first introduced to the technology while at HWA and working on the hydrogen-powered HYRAZE League concept that featured steer-by-wire. "This is a proven technology."

"It is super safe," confirms Muecke Motorsport boss Peter Muecke. "We haven't had one single problem, one single failure."

In 2018 Paravan launched a joint venture with Schaeffler, an innovation partner to the DTM that previously partnered with Audi on its Formula E drivetrain, with the objective of scaling up Space Drive's usage by OEMs. ▶

Space Drive allows people with disabilities to drive safely on the road

GRUPPE C GMBH

PARAVAN

Paravan founder Arnold introduced steer-by-wire to racing

Arnold wants its latest iteration using lessons from motorsport, Space Drive 3 AddOn, to reach "the next level in series production" and describes its Schaeffler partnership as "the next logical step" in doing so.

"Our goal is to be a part of the market in 2025-26," Huegle explains. "We want to show that our system can be added onto whatever vehicle, not only for road cars."

Arnold adds: "Space Drive 3 will provide the technological basis for the development of an integrated system. This is the prerequisite for every OEM when they install the system in series production of future vehicle generations."

The joint venture was, however, unrelated to the decision to put steer-by-wire through the rigours of competition on the track. That was pushed by Arnold, who deemed it "the most suitable development platform and essential".

After a first demonstration lap on the Nurburgring Nordschleife was completed in 2019 by Rahel Frey aboard an Audi R8 LMS GT3, the system was fully operational in race trim the following year and, alongside outings in GTC, it completed the Nurburgring 24 Hours with a Space Drive Racing Porsche Cayman GT4. Last year, it again finished the legendary enduro with a GT3 Mercedes also prepared by circuit expert W&S Motorsport.

The same year it was introduced to the DTM in three different cars: Maxi Buhk's Muecke Mercedes, Timo Glock's Rowe Racing BMW M6 GT3 and the Abt Audi of Sophia Floersch. Huegle says this was "to show that our system with more or less the same hardware can work in different cars, even in different concepts", but it has consolidated its DTM activities on working with Muecke this year rather than splitting its capacity and budget.

"I know [the Mercedes] pretty well because I designed it completely," explains Huegle.

Schaeffler-Paravan engineers are embedded within Muecke's operation to the extent that the veteran boss says "we are one team, literally" and their work in collating the data logged through racing has allowed for constant development of the steer-by-wire system.

Huegle says: "To optimise the product from a lightness [perspective], this is a base development step, so we did this for sure. One of the bigger steps is to transfer the feeling, what the driver feels normally via their steering column, via an ECU in data to the driver. This is the technology we develop and there is a big step between last year's software and this year's software. The development out of these datas, it's the biggest benefit.

"The next thing for example is the steering velocity, nobody steers faster than a racing driver, therefore we had to introduce some new components, but it's normal. There is always room for improvement."

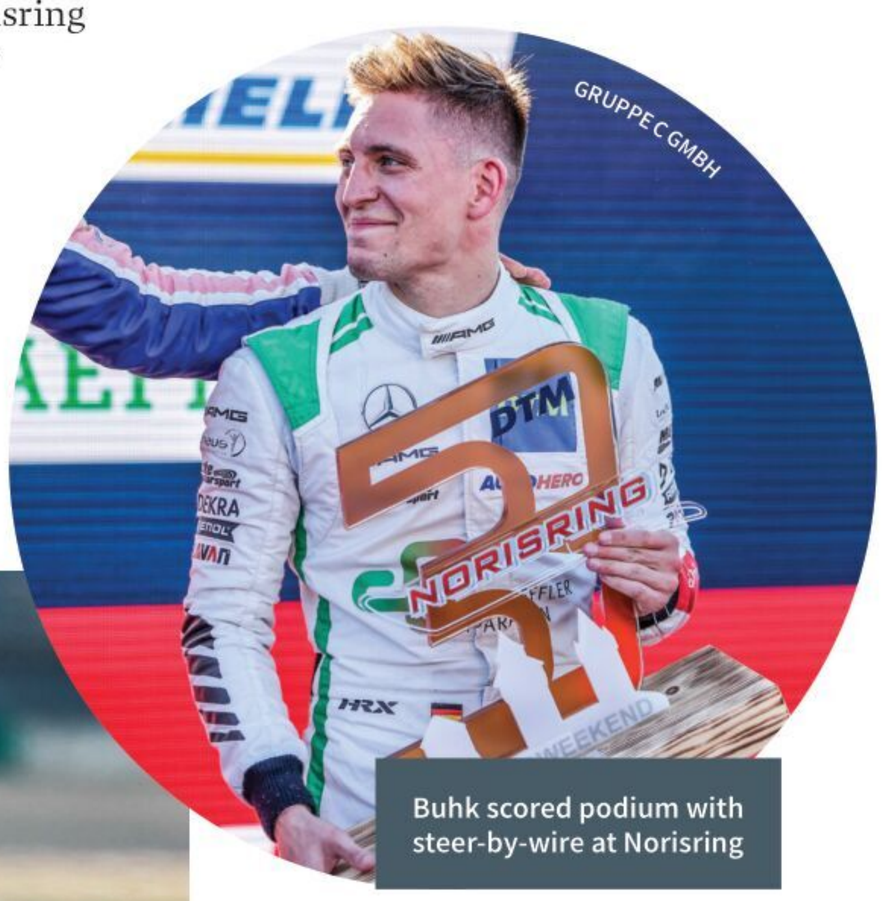
THE USER EXPERIENCE

Now aged 75, Muecke admits that he's "been involved in motorsport for such a long time that it becomes a little bit of a routine", so jumped at the chance to be involved in developing the technology – both to exercise his curiosity and to explore its potential to yield a performance advantage in a GT3 formula where cars are tightly homologated. His team's involvement in steer-by-wire's development, he says, "is really a massive joy".

"You are always looking out for new opportunities to improve your car, your set-up and all the technical possibilities," he says. "It was clear to me that we just had to do this. Normal things, I have had enough in my life, believe me. But this really is next level. A highlight? Yes, most certainly."

Having sampled the system for himself before signing up to run steer-by-wire in 2021, Muecke believes it brings "a clear advantage for the driver" on certain tracks. "You aren't exposed to so many impacts as a driver and therefore the handling of the car is more neutral because it doesn't respond to every bump," he says.

Buhk took the system's first podium at the Norisring last year, ironically at the track where his team "had the biggest question mark".


GRUPPE C GMBH

Buhk scored podium with steer-by-wire at Norisring

"We didn't know how good the steering would be in the hairpins and with low grip on the track," he says, "but in the end it felt really good. It's actually quite nice to drive over kerbs for me as an old guy *[not that old at 29! – ed]* because you don't have the knock-back in the steering."

The 2013 Spa 24 Hours winner says development on the force feedback is "improving all the time"

GRUPPE C GMBH

Muecke runs steer-by-wire on DTM Mercedes

SASCHA DOERRENBAECHER

Steer-by-wire has huge potential in rallying

and that the project's primary focus now is on fine-tuning small details. "For me we are there, it's not like we're a few seconds off because of the steering," explains Buhk, who on a regular DTM weekend doesn't "spend too much thought about the steering which is working".

"We are really working like all the other teams on the set-up side getting the tyres to work, working on the race set-up. We are really here like every other race team. It's not a big difference, you jump into the car and you just drive."

Both Buhk and Muecke praise the level of customisation in the system, with differing levels of force feedback available depending on the driver.

"One of the advantages of our system is that even by mapping switches I can change the ratio," Huegle explains, "so the flexibility of the system is incredible."

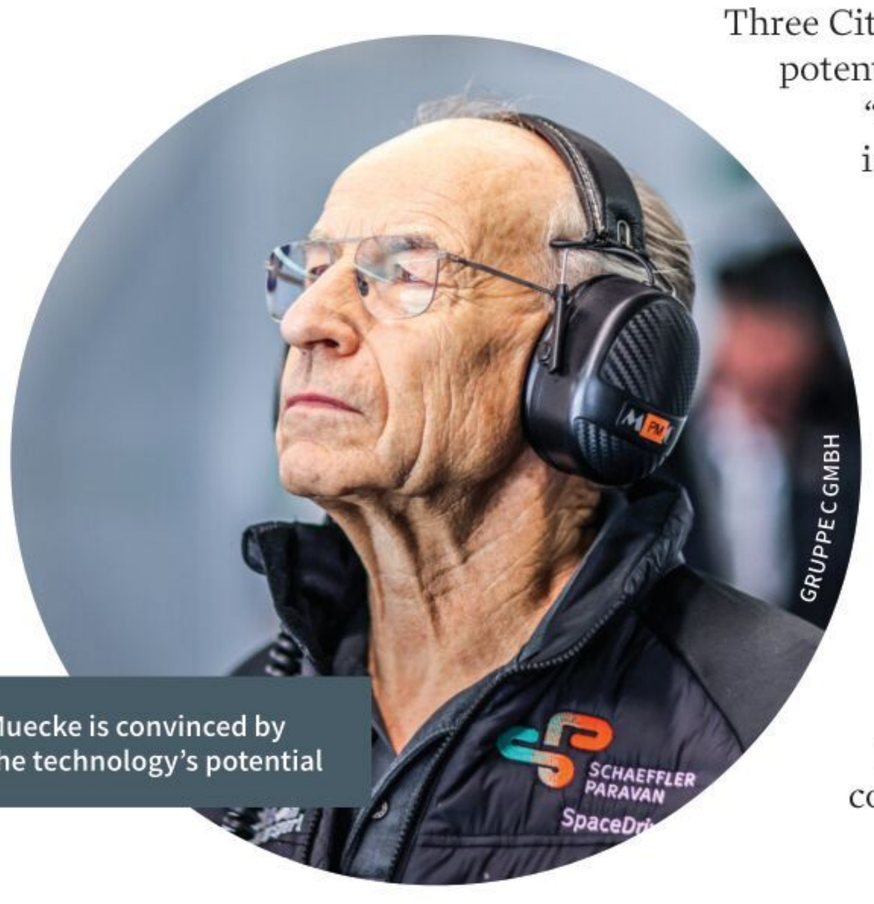
"It is astonishing what they are actually able to do," adds Muecke. "When we say, we would like to have this or that a little bit different, you get it. They plug their laptop in and they programme it and all of a sudden, it really is different! Everything has been implemented, the response is there."

THE FUTURE

Huegle is clear that Schaeffler-Paravan's involvement in the DTM has achieved its aims in improving awareness around the steer-by-wire technology and convincing potential users of its integrity.

"At the end, this technology will help to get the autonomous drive in a way that everybody trusts these cars," he says. "There will be a time when nobody is thinking about [the safety of] an autonomous driving car."

Arnold agrees: "The racing programme has absolutely achieved its goals, without which we would never have achieved credibility. The findings are very important for our development process.



Muecke is convinced by the technology's potential

> "We have to say that we are working on a part of history. This is the automotive future"

The advantages are already obvious."

Muecke is chief among those who have been totally convinced of this and is excited by the project's "enormous" potential for road use. "There will be so many possibilities for the automation of driving in the future that we really have to say we are working on a part of history," he says. "This is the automotive future. In the long term, I believe that from this development things will emerge that will mean safety for normal drivers out there on the road. What better place could there be to develop and to test such a system than in racing? What is working here, will work on any normal road."

Steer-by-wire is set to be in all DTM Electric cars when that concept, led by Schaeffler, becomes reality in 2024. But it's in rallying – where the technology is being developed by Armin Schwarz, with its next outing planned for October's Three Cities Rally in lower Bavaria – that its latent potential for motorsport most excites Huegle.

"From my point of view the rally business is even more interesting," he says. "The potential of a steer-by-wire in rally is even bigger because I can filter out all of these big bumps where nobody needs all the pain on their arms or their joints. It's not necessary because our system can take all these big loads and give him just the feedback he needs."

It's clear that we will be hearing much more about Schaeffler-Paravan's steer-by-wire system in the coming years. And, in the not too distant future, it might perhaps come as standard in your daily driver... ■

QUICK FIXES TO AVERT A COCKPIT CRISIS

When in-car temperatures spiked at potentially dangerous levels in Portugal, a fast-track process was triggered for teams and the governing body to deal with the issue

BY TOM HOWARD

Engineering solutions to problems is in motorsport's DNA, such is the never-ending quest to design, build and develop the best package to succeed. For the most part, teams are constantly evolving their machines in pursuit of performance. But sometimes an issue presents itself that requires clever thinking and swift action to avert a potential crisis. The World Rally Championship recently found itself in such a situation, when increased cockpit temperatures in the new Rally1 hybrid cars necessitated a quick response from the FIA and the teams.

In the first year of shaken-up regulations, resulting in all-new car designs, teething issues are not unusual. And one of the unfortunate byproducts of incorporating the 100kW hybrid unit into WRC cars is that the exhaust now runs down the right-hand side, where the co-driver sits, instead of through tunnelling down the centre of the car as before.

Dehydration can cause a loss in concentration

Cockpit temperatures have increased significantly as a result, with the mercury levels rising towards 70C at Rally Portugal in May and leading some to label the conditions "unsafe". In one case a co-driver's boots began to melt...

Fears over competitor safety were raised by the teams with even hotter rallies in Sardinia and Kenya on the horizon, the former just two weeks after Portugal. The effects of the heat could potentially lead to crew dehydration and, in a worst-case scenario, a loss of concentration while driving.

With competitor safety paramount and time between events restricted, the FIA leapt into action to assess the quick fixes that could be implemented prior to Sardinia. An added challenge was that some alterations could require changes to the vehicle homologations, ensuring a fast-track process would need to be triggered for teams to modify their cars.

"This is a really good example of what motorsport does best in trying to work through a problem," says FIA rally director Andrew Wheatley. "Immediately after Portugal, the FIA technical team sat down and worked out two lists. The first list was what we can do without any homologation changes and that list was five items. Then, there were three more issues that required a fast-track through the homologation process. That had to go to the WRC Commission to get the quick response [the teams] need to get the changes for Sardinia."

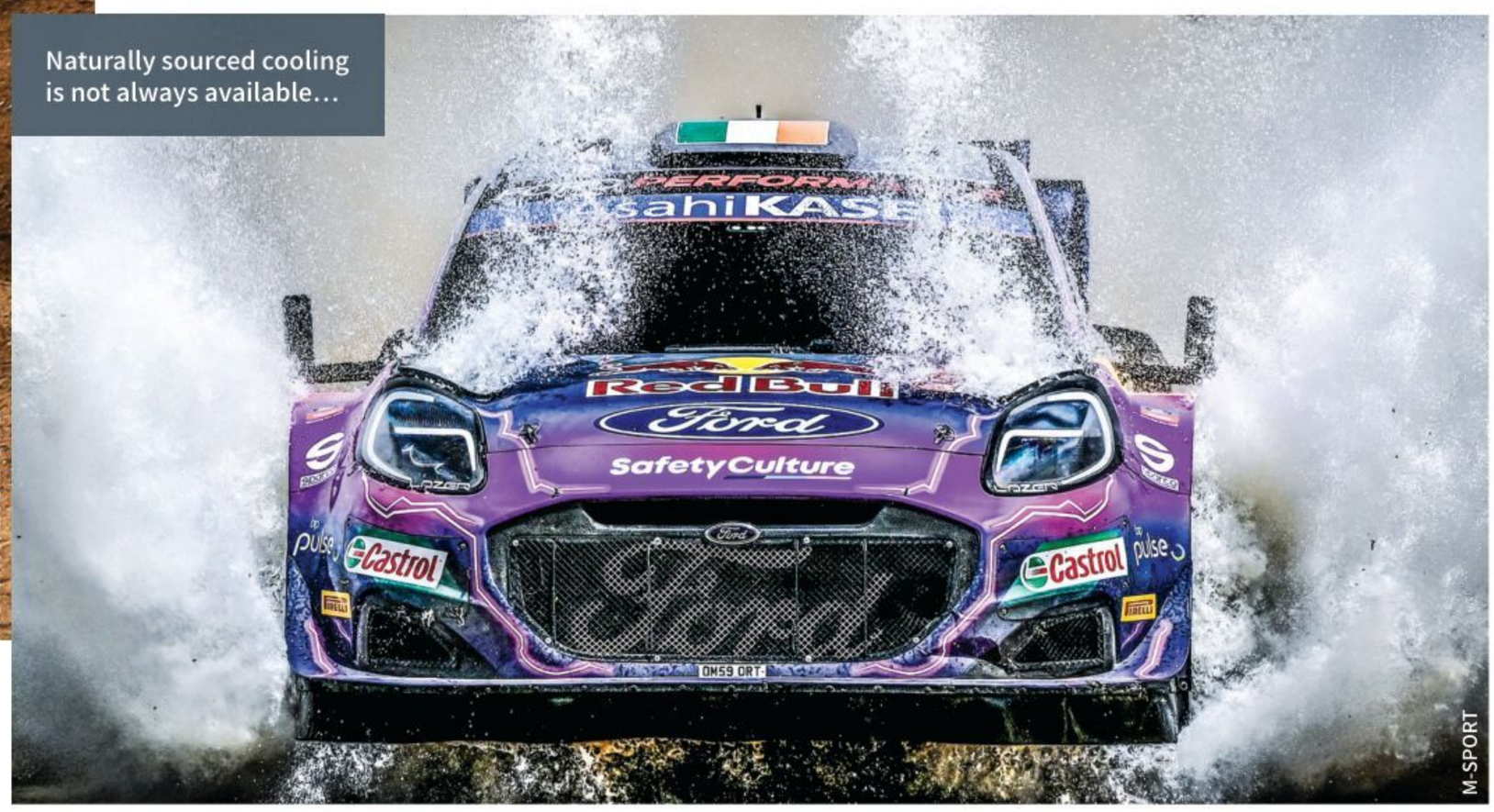
Hyundai's Moncet (left) with M-Sport's Millener

M-SPORT

HYUNDAI MOTORSPORT

New parts rushed out to Sardinia in suitcases

"This is a good example of what motorsport does best working through a problem"



Naturally sourced cooling is not always available...

TOYOTA GAZOO RACING

M-SPORT

The results of the discussions permitted teams to modify roof vents, add ventilation holes to the windows, and fit mirrored film on windows and roofs to reflect heat away from the cabin. Changes could also be made to the insulation of engine bays and exhaust underneath the cars to lower temperatures using ceramic coatings.

Toyota elected to redesign its roof vent entirely. A brand-new version was transported in suitcases by team personnel to Sardinia, where it was swiftly fitted before the rally. "It was very clear to us after Portugal that we had to put this to the top of the priority list," says Toyota technical director Tom Fowler. "We were already doing quite a lot of things that were in the regulations and almost all of the things the FIA were suggesting. But the one change we have done was we designed, manufactured and installed the new ventilation system in the roof. It was a tricky time schedule on the project.

"Someone spent a couple of days designing the parts, which is a couple of 15-hour days probably, and getting those parts manufactured in the workshop. Our guys have been bringing them to the rally in suitcases and last-minute deliveries.

"All the things underneath the car we were already doing. The reason ceramics is used is because it's very good for heat insulation — we just improved it a bit."

Hyundai and M-Sport elected to fit reflective golden and chrome roofs to their respective i20 Ns and Pumas, alongside additional air vents and tweaked roof vents.

Hyundai deputy team director Julien Moncet felt at the time that the changes wouldn't be sufficient, considering the ambient temperatures in Sardinia would touch 40C. "We have agreed to some measures — whether it will be enough, I think not but at least it will improve the situation," he said.

While drivers were forced to dig deep to contend with the scorching temperatures inside cars described as like ovens, the swift cooperation of teams and the FIA did manage to reduce cabin temperature by around 5C. "It is always difficult to quantify, but honestly from the feedback from the crews, it looks like it has helped, even if it was, let's say, not optimal," reflects Moncet. "It was hot, but at least it was manageable. It was a good step forward."

Fowler concurs: "The verdict was really positive. The crews were really surprised considering how hot it was, that inside the car it wasn't so bad."

Teams are less concerned by the cockpit heat issue for this weekend's Safari Rally in Kenya, but will continue to monitor the situation while a permanent fix is sought. One option is the addition of an air conditioning system to the cars, alongside a redesign of the Rally1 car at the end of the year to resolve the issue.

But as M-Sport team principal Richard Millener explains, any decision must be carefully assessed from competition and cost perspectives: "You could add in air con, but unless everyone has to do it there will always be one team that will say no way because of the extra weight and power needed to run the system. I would think Sardinia was going to be our worst event of the season; Kenya is still going to be warm, but we've all got tweaks that we did for the last rally and are carrying those forward.

"We need to see how much it is actually causing us trouble. One of the suggestions at the very start was to have side exhausts and get rid of the entire exhaust system, but the FIA didn't want that, I believe.

"There are other things we can look at and maybe at the end of the year we could redesign something. But you also have to be sensible and understand there is a lot of cost involved in that. If you jump into something that costs a lot of money, for an issue once a year, it's not well-spent budget for anyone. We've just got to keep an eye on it and see what we can do." ■

SCRUTINEERING UNDER THE SPOTLIGHT

Following the enforced changes due to the pandemic, a trial is under way to determine how cars should be inspected in future

BY STEPHEN LICKORISH

PHOTOGRAPHY **MICK WALKER**

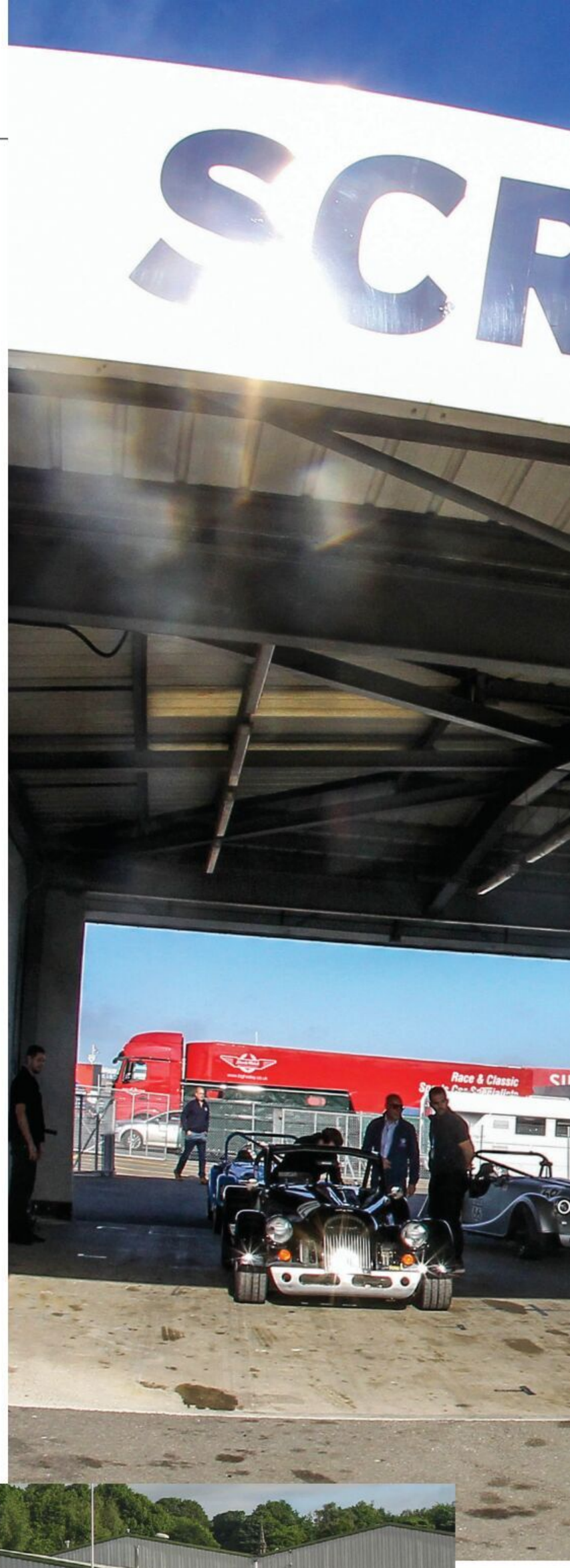
There were few positives to emerge from the turmoil brought by the coronavirus pandemic. But one benefit from the misery was that it provided the opportunity to look at long-established practices with a fresh pair of eyes – perhaps the most obvious example in wider society being the flexibility offered to many by being able to work from home.

And COVID-19 certainly offered the chance to press the reset button on some of the antiquated procedures in club racing. Gone were the forests of paper used in race control buildings up and down the country, as the handling of results and judicial decisions went digital. Gone was the need for competitors to physically sign-on at events – this could instead be completed online in advance. And gone were the long queues at the scrutineering bay early in the morning at race meetings for pre-event inspections, replaced by drivers completing a self-declaration and spot-checks being carried out.

It was an era of change – and change out of necessity. Quite simply, to allow motorsport to restart in a world where social distancing and minimised face-to-face contact in enclosed spaces were supposedly the law, protocols had to be tweaked – some of which was long overdue. But, as the advent of vaccines meant coronavirus restrictions could be relaxed later last year, it raised some interesting questions about what should be done moving forward, particularly when it came to scrutineering. After all, there were inevitably positives and negatives to the system of self-declaration.

"The opportunity for competitors to interact with the scrutineer was missed and something that there's a strong push to maintain," Ian Smith, technical director of British governing body Motorsport UK, notes as one example. "There was also the perception that the standard of preparation of vehicles had dropped during the period where scrutineering was self-declared. So, there was a survey put to the scrutineering community at the end of last year to tell us about their experience of working on the restart of motorsport under COVID restrictions and asking, 'Do you believe we should go back to scrutineering as it was before or do you believe there was enough learning through this process that warrants further investigation to continue the development of the scrutineering process?'"

The consensus was that a permanent change should be considered and therefore a trial looking at the future of scrutineering has been put in place for this year. While the standard approach is that clubs go back to the pre-pandemic system of scrutineering every single car before it heads out on track, organisers were able



New pilot scheme aims to reduce long scrutineering bay queues

"The objective mustn't be an exercise in finding 'What can I fail someone on?'"

Whether all cars need to be scrutineered pre-event is being assessed

to sign up to be part of a Motorsport UK pilot scheme. Under this, 25% of entrants at a meeting would be subjected to a longer, more extensive check before an event – with the intention of therefore being seen once every four fixtures – while the rest just complete the self-declaration.

"The team set up a working group, which has got an interesting cross-section of stakeholders in it," explains Smith, who joined Motorsport UK just as the trial was beginning. "There's obviously some experienced scrutineers, there's also some scrutineers who in their responses to the survey said, 'Do you know what, no, I think we should go back to how we did it before', and it was felt important that people who represented that view were part of this as well. So we've got a handful of scrutineers with a blend of views, we've got representatives from each of the clubs that volunteered to take part in the trial, then also we have a handful of clerks of the course so we get a balanced view as to how things are working."

Seven clubs opted to participate in the trial and, prior to last weekend, a total of 26 circuit racing events have been conducted under this system of more intensively scrutineering 25% of participants.

Among those involved is the Classic Sports Car Club, and director David Smitheram believes there are some clear benefits of the revised format. "The biggest upside is it's so much better for everyone – both scrutineers and competitors – as they don't have to start their morning with a push to the scrutineering bay, so in that respect it's great and we really hope it continues," he says.

"In terms of the way we're running it, some clubs are doing a random 25% of all grids but we're doing two series per day. We're doing two later on the timetable and they don't have to get there at the crack of dawn. Then, every car, when it goes into the assembly area, has basic checks – brake lights, visual checks of tyres.

"We're trying to get that balance between safety and recognising it's a customer-based sport. Safety is important but we have to recognise time is precious. Without those 7am starts for many, it means people are able to spend Friday night at home with their families – we've really noticed the difference in the paddock on Fridays, it's not as busy as it once was."

But, despite the advantages of the new system, Smitheram says there are still elements that need a little refining. Chiefly, he wants to ensure that the more detailed checks – lasting 15 minutes, compared to the standard six – address the right areas. "What we don't want to do is tell scrutineers, 'You've got 15 minutes, go to town'," he says. "The objective mustn't be an exercise in finding 'What can I fail someone on?'. What we don't want is it being a formulaic checklist and ▶

competitors know they only need to check these eight things."

Smitheram highlights the fire extinguisher as a good example of this. While much of the focus is on making sure it's in date and to the correct specification, he believes it is vital that inspections ensure it is also fixed securely. New rules stipulate heavier extinguishers are used and therefore the damage they could cause, if dislodged in impact, is greater.

A broad range of clubs are part of the trial – it also includes the 750 Motor Club, MotorSport Vision Racing, Castle Combe Racing Club and Scottish Motor

When pandemic struck, traditional scrutineering had to be altered

> "We're not looking to mandate a very rigid, non-negotiable set of policies"

Racing Club – but other organisers have declined for a variety of reasons. For example, the British Racing and Sports Car Club has practical concerns. "You need to keep a record of which cars are being scrutineered," explains chairman Peter Daly. "We looked at the practicalities of the trial and stepped back from taking part because our race meetings have many different [guest] championships that come and go." Given the volume of drivers involved, closely monitoring which had been scrutineered and which had not was not deemed workable at this stage.

Elsewhere, the Historic Sports Car Club's concerns are more fundamental. "My argument has always been that there can be no compromise on safety," says CEO Andy Dee-Crowne. "I would argue the historic cars are, by their nature, more dangerous than some of their modern counterparts. There's inherently more chance of a component failure and we have a duty of care to our drivers before they go and race a car around the circuit. We find discharged fire extinguishers, the wrong or out of date helmets and seatbelts not properly fitted. We will come across clear cracks in chassis that maybe haven't been seen by the owner. It's a fresh pair of eyes that gives a view on the safety of the car.

"Nobody wants to be in the queue of drivers in the rain at Silverstone waiting their turn to get into scrutineering. I appreciate that, but where is the halfway house? We felt it's [the trial] not something we wanted to run with at the moment and will see what the outcome of it is."

Dee-Crowne also highlights the eligibility side of scrutineering as being important, particularly when "hundredths of a second make all the difference" in some of the close HSCC championships. Without the checks, he fears series could face "all sorts of appeals and protests".

As you would expect, it is clear there is a range of views surrounding the future direction of scrutineering. Despite that, Smith notes some of the positives to have already emerged from the trial, including increased collaboration between clubs. Another is that the most common problems spotted by scrutineers are now being recorded, therefore informing advice to competitors. "It's about saying, if people are genuinely struggling with extinguisher installation or very specific issues, let's actually come up with some information we can distribute via the communication channels," explains Smith.

The work evaluating the future of scrutineering is not being carried out in isolation. Sitting alongside it are plans

HSCC is a strong advocate of scrutineering all cars pre-event

Motorsport UK says it's important to involve scrutineers in discussions about future changes to the process

Pilot scheme will feature more detailed checks

Digitalised central record system is being developed

to develop a centralised system to keep records of a car's scrutineering history – particularly important for a driver not aligned to a specific series, who could, inadvertently, consistently fall outside of the 25% being examined. "A project that's running in parallel is to establish a simple as possible centralised system for record-keeping for race cars," says Smith. "This may previously have been considered to be vehicle passports for race cars, which – as the first stage – is possibly too much of an initial step. Some of the really cool things that have happened as a result of doing the pilot is some of our scrutineers have been working on ideas to solve this problem.

"I was at Silverstone earlier this year for an MSVR event. Nigel Thorne was the chief scrutineer for that and he had built on his network-attached hard drive at home, using some freeware, a hosted database that he and his scrutineering team could refer to to establish a really simple record by championship, by race number. It might say we saw this car at Silverstone and the seatbelts were about to go out of date so, at the next event, that's the targeted thing to say, have you changed the belts? Previously, that kind of thing would've been a conversation lost in the ether as soon as everyone parted ways."

The idea of introducing vehicle passports is nothing new, but it has proven controversial in some quarters. "There are many people who don't want to burden our competitors with more bureaucracy or costs," says Daly. And that is something Motorsport UK is aware of and therefore believes a digitalised system to monitor scrutineering is a better first step.

While record-keeping is one element to consider, the future of scrutineering involves other topics, too – not least the inclusion of electric vehicles. EVs and hybrids are expected to creep further onto the national scene – and, while this impacts on venues, marshals, recovery teams and organisers, it also affects scrutineers. "We're working very closely with a number of our technical commissioners who are involved in the industry and those guys are helping us to make sure the EV regulations and guidance to stakeholders, particularly scrutineers, is up to date," says Smith.

But, while the successful integration of EVs into national motorsport is an ongoing challenge, in the meantime the scrutineering pilot continues. It is due to run throughout 2022, with some initial conclusions beginning to take shape from August. That allows time for further tweaks to be tested, before new regulations could potentially be introduced next season.

"What we're not looking to do is mandate a very rigid, non-negotiable set of policies that you have no choice but to implement," explains Smith. "But, also, we're not looking to sanction a free-for-all either. Some of the things we would happily consider giving the clubs licence to decide how they want to do it would be – for example, whether you scrutineer in the paddock or in the scrutineering bay.

"I think the general perception is for the competitor, their experience is improved if they don't have to queue up at the scrutineering bay at 6am. On the flip side, if they're not in their awning or by their car in the paddock when the scrutineers arrive, then that's a problem, too."

That is a perfect demonstration of just how much there is to consider when determining the future of scrutineering. And Smith insists it is not just the experience of drivers but also the volunteer scrutineers that must be considered when implementing ideas. What started as an enforced change to adapt to the challenging circumstances of the pandemic could now develop into new rules that potentially have a lasting benefit for many. ■

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HOW TO BE AN ACE ENGINEER

Gary Davies shares his tips from a career excelling in single-seaters and GTs

BY JAMES NEWBOLD

Davies is currently working as the chief engineer at Greystone GT across multiple series running McLarens

JEP

When Autosport speaks to the chief engineer of fast-growing sportscar outfit Greystone GT, Gary Davies, he's just finished painting his new office. Running cars himself in two series and overseeing a third in British GT, plus building up the technical structure of an outfit that started as a trackday organiser before introducing a race team in 2021, he's not wrong when he jokes: "I'm doing it all at the moment!"

Davies has built up successful teams before – both at Arden in Formula 3000 and CORE Autosport in the IMSA SportsCar Championship, his role was instrumental early on – and he has every belief that Greystone can compete at the front of top international series when boss Mark McLoughlin elects to take the plunge.

"Already the growth in the team since I've been here is massive," he says. "We struggle to keep up with the demand."

His motorsport craze began when his father Richard, who ran fabrication shops at every RAF base he was posted to, one day brought home a go-kart. Following in his footsteps, Davies studied systems engineering at Leeds Metropolitan and worked for several damper manufacturers after graduation. "The mindset was always to use that knowledge to get into a race engineering position," he says, "not to become the next best damper guy."

His strategy worked, and he was hired by British Formula 3 team Portman Racing for 1998. The ambitious squad stepped up to F3000 for 1999, but pulled out mid-year, whereupon Davies had his sole Formula 1 dalliance at BAR. Initially factory-based before joining its test team, he says F1 "wasn't my thing" and turned down a job as a trackside performance engineer to join Christian Horner's rebuilding project at Arden. He stayed for three years, and won at Monza in 2002 with Bjorn Wirdheim.

Davies admits he does "think on what could have been" had he given F1 a proper chance. "It's a little regret," he says, "but I've had quite a lot of success in my career and worked with some really good people."

Among those, Davies praises Horner as a boss who didn't interfere, and cites CORE Autosport's Morgan Brady as "the best team manager that I've ever worked with". They first crossed paths during Davies' decade-long stint as a freelancer working across several single-seater categories, which gave him a broader perspective gleaned from different team philosophies. "It's definitely an advantage," he explains. "It all goes in the experience book."

Three years after then-Cranfield student Brady had worked for Davies as an intern at Ultimate Motorsport, he contacted the Briton about running CORE team owner Jon Bennett in the 2012 American Le Mans Series. New to sportscars, Davies learned quickly and a 1-2 in the LMPC class opened the door to becoming Porsche's works team for 2014 in IMSA. He picks the GTLM class victory for the 911 RSR on debut at Daytona as the favourite of his career, above even winning Petit Le Mans outright in 2015.

The GTLM title also arrived in 2015 with Patrick Pilet, and Davies had no plans of moving on, but COVID had other ideas as Porsche canned its works IMSA effort in 2020. After a stint as chief engineer at Dragon Penske in Formula E, where he believes investment in energy management plays too big a role, he joined Greystone.

Stepping back from running cars himself is, Davies says, a "natural" step. Implanting a Weissach-style engineering process isn't the work of a day, but for Greystone to be successful "from an organisational point of view" – Davies's stated aim – it could have few engineers better suited to the task. ■

CORE's Daytona 2014 win on 911 RSR's debut is Davies's favourite

GILBERT/MOTORSPORT IMAGES

TOP TIPS

FOR ENGINEERS FROM GARY DAVIES

- Developing a specialism can help you be attractive. Working with damper companies, I got introduced to the teams and how they work, and talked to drivers, which was all beneficial for working as a race engineer. It was quite an easy transition from designing dampers and tuning them to being responsible for the whole car.
- When conditions are mixed, just get the tyres on that are suitable for the conditions now, otherwise you're just gambling.

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