

# Las Vegas GP Can it match the hype?

BRITAIN'S BEST MOTORSPORT WEEKLY

16 NOVEMBER 2023

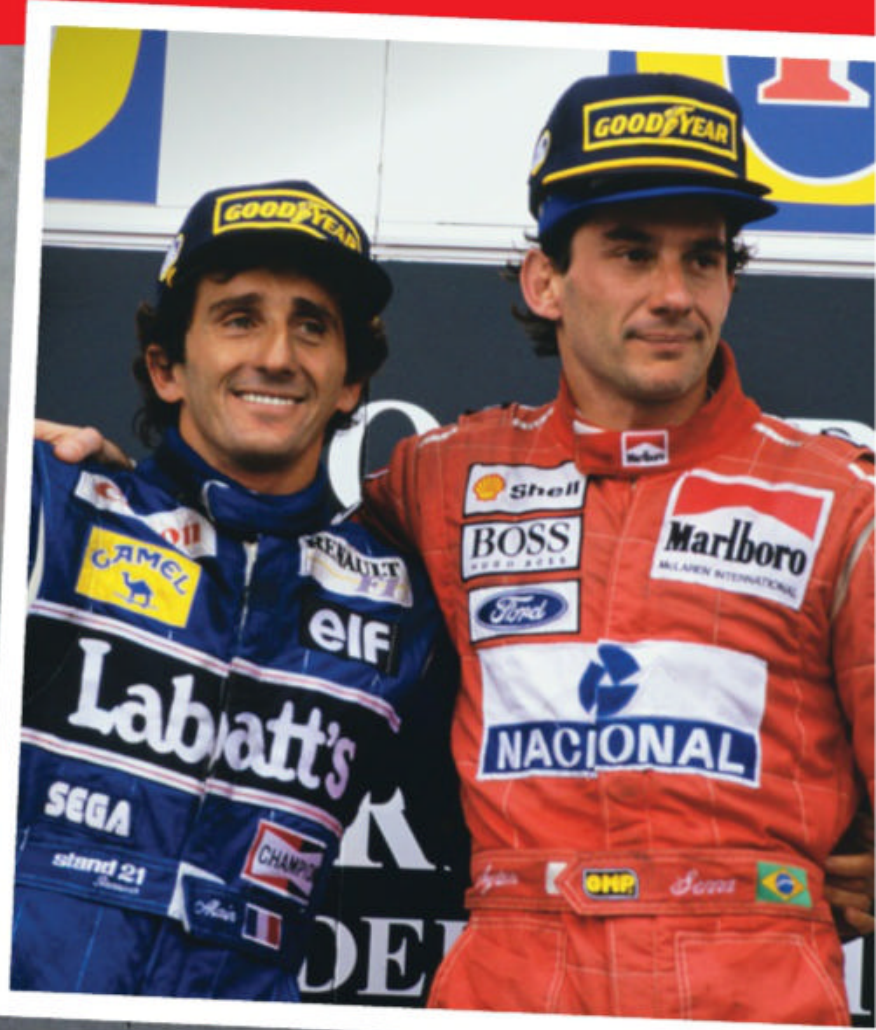
# AUTOSPORT

1993 SPECIAL

## Senna vs Prost

## The final battle

When two legends fought  
in F1's ultimate cars



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FUTURE POWER  
SUPPLEMENT

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The rise of a new F1 force

Ferrari's important failure

The image shows three male endurance drivers from the Porsche factory team standing in front of their blue and white racing cars. They are wearing matching racing suits with various sponsor logos including Sparco, Michelin, Mountain Motorsports, WEC, and Porsche. The driver on the left is holding a blue and white helmet with 'PORSCHE' and 'Sparco' branding. The driver in the middle is also holding a similar helmet. The driver on the right is wearing sunglasses. The background is a blurred crowd of spectators at a race track.

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# When Formula 1 technology reached its incredible peak

While many look ahead to this weekend's Las Vegas Grand Prix, we thought we'd take advantage of a relative lull in motorsport to turn the spotlight on the peak of Formula 1's 'gizmo' era.

The cars – or, at least, the front ones – of the 1993 season bristled with innovative technology and this week's special covers some of the main stories. Williams led the way with the FW15C (page 18), McLaren and Ayrton Senna provided the main opposition with a car better than many remember (p24), Benetton showed hints of its latent potential with Michael Schumacher (p30) and Ferrari... well, Ferrari struggled so much that it made changes that eventually led to one of the most dominant periods in the championship's history.

As well as hearing from some of the key F1 players of the time, we also cover the other main motorsport tales from the era (p42), covering Indycar, GT racing, British Touring Cars and the World Rally Championship, where Colin McRae started to make his presence felt.

We haven't forgotten about the two big events coming up this weekend. Matt Kew takes a look at whether the Las Vegas GP can really live up to all the hype (p4), while Jamie Klein finds out why so many single-seater and GT stars are heading to the Macau GP (p46).

There's plenty of National news at this time of year, led this week by the announcement of the winner of the prestigious Porsche GB Junior shootout (p59). Stefan Mackley also explains how the highly competitive GT3 and GT4 championships were won in British GT (p68) and picks out the top five drivers in each class.



*Kevin Turner*

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## PIT & PADDOCK

- 4 What to expect from the Las Vegas GP
- 6 Fittipaldi brothers on track in IndyCar
- 8 Balance of Performance changes for WEC?
- 11 Dunne joins Macau GP star entry
- 13 Las Vegas Grand Prix preview
- 15 Opinion: Alex Kalinauckas
- 16 Opinion: Kevin Turner
- 17 Feedback: your letters

## 1993 SPECIAL

- 18 Williams and the sophisticated FW15C
- 24 The last hurrah for Senna at McLaren
- 30 Rise of the next F1 superpower
- 36 Ferrari starts another new chapter
- 41 Key stats from F1 1993
- 42 How Mansell conquered Indycar
- 43 The low-key start to a golden GT era
- 44 BMW kicks off Super Touring in the BTCC
- 45 McRae rises as Kankkunen goes fourth

## FEATURES

- 46 Macau Grand Prix preview

## RACE CENTRE

- 48 World of Sport: TCR World Tour;  
World Rallycross; MotoGP

## CLUB AUTOSPORT

- 59 Wallis named as new Porsche GB Junior
- 60 Father-and-son Mazda racers banned
- 62 Racing Hondas series offers free entries
- 65 Star turnout at Velocity International
- 66 National report: Anglesey
- 68 British GT season review

## FINISHING STRAIGHT

- 72 What's on this week
- 74 My favourite track: Jamie Green

**FREE WITH THIS ISSUE**



## ENGINEERING SUPPLEMENT

Alexander Sims tries an all-electric tin-top, we look at the 2026 F1 engine regulations, and a Lotus racer breaks cover after more than 50 years in the latest edition of our free supplement.

# PIT + PADDOCK



## Las Vegas GP: what to expect from F1's most

### FORMULA 1

Formula 1 has already gambled over £355million to launch the inaugural Las Vegas Grand Prix. This weekend's race along the Strip is the culmination of the popularity and riches brought by Netflix hit *Drive to Survive* as championship owner Liberty Media works to grow its blip on the American radar.

For such an occasion, the typical business model has been parked. Instead of promoters spending vast sums for the privilege of hosting the series, F1 has funded this race itself and will do so until at least 2032. Some \$195m was spent on a 39-acre site to construct a pit building and

paddock. Given the unprecedented expense, little wonder that everyone on the payroll is at pains to stress just how brilliant this event will be. To complement that optimism, however, cynicism is in no short supply.

Vegas residents have had their noses put out of joint by the scale of the set-up. Landmarks and cut-throughs have been blocked for weeks so grandstands and hospitality units can be built. Mature trees have been felled and plastic film applied to bridges and walkways to obscure the view. The cheapest general admission tickets for the three days set fans back £400 and a seat on Sunday between £940 and £1430. The average three-day ticket price is £450 more than Miami, which is already

twice that of Silverstone. Hotel rates were initially exorbitant, although the dip in prices over recent weeks might suggest supply has outstripped demand. At least strikes have been avoided, with 30,000 hotel and casino workers agreeing a resolution with Wynn Resorts only hours before last Friday's deadline.

For the first time since the 1985 South African GP, the race will take place on a Saturday. And the decision to run the event at night, presumably so that all the neon lights and the \$2.3billion Sphere penetrate the background of every TV shot, dictate a local start time of 2200. Meanwhile, UK viewers must tune in by 0600.

The 3.85-mile circuit, while only 100 metres from the old car park, is figuratively worlds away from the Caesars Palace venue maligned by all when F1 visited in 1981 and 1982. Whether residents have been irked or not, at least they know there's a race on their doorstep this time. The new layout boils down to three long straights broken up by fiddly corners. There's a distinct lack of open, high-speed changes of direction. That will likely leave DRS and braking zones to do the heavy lifting when it comes to overtaking opportunities.

In its quest to make the Vegas GP a blockbuster, F1 may well face the same limitation as most other races this season in so far as the on-track action will be





## F1 STEWARDS: TRACK LIMITS CHANGE NEEDED

### FORMULA 1

Formula 1 stewards have slammed the FIA for an “inability” to properly enforce track limits and are urging for a fix to be implemented in time for the 2024 season to end the current “completely unsatisfactory” situation.

The governing body damningly calling itself out follows Haas protesting the result of the recent United States Grand Prix. The team found multiple examples of rival cars straying with all four wheels over the painted white lines denoting the edge of the track, but these incidents escaped the attention



of race control.

The FIA threw out this protest since the case was built around onboard footage that was available during the race so did not satisfy the criteria for “significant” new evidence. However, at least one CCTV camera at Austin was determined to be poorly located so could not fully cover a corner apex.

Amid the failings, the stewards are demanding

change. In the FIA verdict, it was noted: “[The stewards] find their inability to properly enforce the current standard for track limits for all competitors completely unsatisfactory and therefore strongly recommend to all concerned that a solution to prevent further reoccurrences of this widespread problem be rapidly deployed.”

**MATT KEW**

## hyped race

hampered by Max Verstappen’s monopoly. Although, cool temperatures could inspire plenty of headlines and unpredictability (see page 15). Sessions starting late at night in November means the mercury will drop below 10C. Combined with those long straights and a lack of lateral forces, Pirelli is expecting the winter air to chill the tyres’ surface by over 30C before drivers slam on the anchors. That could lead to a spate of incidents and graining as the cold rubber is dragged over a road car-biased asphalt. A first visit and a new Tarmac also means F1 teams have far less data than normal.

Pirelli motorsport boss Mario Isola said: “It’s a jump into the unknown. We had in Barcelona some pre-season tests with similar temperatures, but Barcelona is a different circuit where you put more energy into the tyre. In Las Vegas, I believe we are going to find it quite a unique situation. We need to protect the tyre from this high speed and the standing wave [deformation]. Everything is new, so it’s difficult.”

In-race chaos might be a fitting outcome for the inaugural Las Vegas GP: plenty of drama, not a lot for the purist. But, as far as F1 bosses are concerned, there can be no such thing as bad publicity when it comes to its Sin City flagship.

**MATT KEW**



## GM signs up to make F1 engine

### FORMULA 1

General Motors has formally registered with the FIA to join Formula 1 as an engine manufacturer from 2028. Development and testing of “prototype technology” has already begun.

An F1 presence could come as soon as 2025 for GM, which has partnered Andretti’s bid to form an 11th team via its Cadillac marque. While that prospective entry has gained FIA approval, FOM must give it the greenlight also. But there is great resistance from incumbent competitors who don’t want their

commercial income to suffer. The argument is that any newcomers must add “value”. GM signing on as a power unit manufacturer goes some way to satisfying that.

GM president Mark Reuss said: “We’re thrilled that our new Andretti Cadillac F1 entry will be powered by a GM power unit. We’re confident we’ll develop a successful power unit for the series, and position Andretti Cadillac as a true works team. We will run with the very best, at the highest levels, with passion and integrity that will help elevate the sport for race fans around the world.”

**MATT KEW**



PIETRO FITTIPALDI

## Fittipaldi on track in special Sebring IndyCar test

### INDYCAR

Formula 2 race winner Enzo Fittipaldi had his maiden IndyCar test for Dale Coyne Racing at Sebring last week, joining brother Pietro as he familiarised himself with his Rahal Letterman Lanigan Racing team.

The Brazilian grandsons of two-time Formula 1 champion, double Indianapolis 500 winner and 1989 Indycar champion Emerson Fittipaldi shared the track on the 1.7-mile short course at Sebring International Raceway on Wednesday.

Enzo, 22, teamed up with DCR as Pietro, 27, had his first outing in an IndyCar since the 2021 Indy 500 after signing a deal with RLLR last month.

Enzo Fittipaldi currently sits seventh

in the standings with one round to go of his second full season in F2, having broken his duck at Spa with Rodin Carlin.

“It was a success and I had a really good time,” said the Red Bull junior. “The speed was there right away.

“The way you build the tyre energy, the warm-up procedures are completely different [to F2]. With IndyCar, it’s just flat-out right out of the box really.”

While Enzo felt the power was “quite similar” to the long-serving F2 car that will be replaced by a new machine for 2024, he believes that “the style is very different”. “Within the car you can slide a lot and extract the lap time, really extract it out of the tyres, even though sliding around looks like a very messy lap, but still, it’s good,” he

said. “In F2, you can’t slide too much.”

The brothers enjoyed sharing the track and at one point after lunch found themselves on track, trading quick laps. “It was very, very competitive,” said Enzo. “We were super close. We’re very competitive with each other.

“There was no other team there, it was just me and my brother. It’s going to be a day I’m going to remember for the rest of my life.”

Jacob Abel, who finished fifth in the Indy NXT standings this year, also had his first taste of IndyCar machinery at Sebring. He drove the #18 DCR Dallara-Honda on Monday, though the 22-year-old is expected to contest Indy NXT again in 2024.

**JOEY BARNES**

## Nielsen stays as Ferrari WEC line-ups set to continue



JEP/MOTORSPORT IMAGES

### WEC

Nicklas Nielsen will remain with Ferrari’s World Endurance Championship Hypercar squad next year as part of what is set to be an unchanged line-up. The Dane, who partnered Antonio Fuoco and Miguel Molina in the #50 499P Le Mans Hypercar, has extended a stay at the Italian manufacturer that began in 2020.

Ferrari sportscar racing boss Antonello Coletta said that Ferrari is “proud to renew his contract”. Of the rest of the line-up in the AF Corse-run factory squad, which helped Ferrari secure second in the points table, he explained that he is expecting to return to the WEC with the same six drivers who raced the 499P in its maiden season this year.

“At the moment my

idea and the idea of the management is to confirm our line-up,” he said. “We are very happy with our line-up. We have demonstrated that we have six good drivers.”

The driver combinations, with Le Mans 24 Hours winners James Calado, Alessandro Pier Guidi and Antonio Giovinazzi in #51, also look certain to remain the same.

**GARY WATKINS**

Corvette took 2023  
WEC GTE Am title with  
Varrone in the line-up

JEP  
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## Eastwood joins Corvette attack

WEC/IMSA

Charlie Eastwood has become a Corvette Racing driver after five seasons on Aston Martin's books. The 28-year-old has joined the General Motors brand's GT squad for 2024 along with Daniel Juncadella, Nicolas Varrone and Earl Bamber.

Eastwood (below) is moving over to GM along with the TF Sport squad, with which he will represent Chevrolet in the World Endurance Championship's new LMGT3 class aboard a Corvette Z06 GT3.R. He and Juncadella will spearhead its assault as the professionals in the two Pro-Am line-ups.

"There's something special about Corvette Racing; when you understand

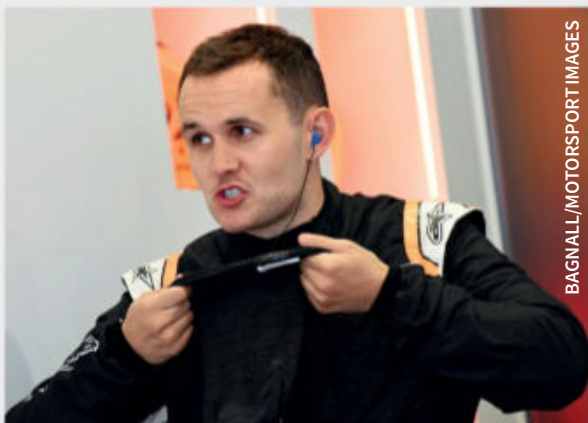
the legacy it has and that you are under the umbrella of GM with all its programmes, you realise that it is a special place to be," said Eastwood, who has raced for TF since 2018. "Like most endurance drivers I have aspirations to race in the top class. We know the links between Chevrolet and Cadillac are strong."

Juncadella, who is moving over from Mercedes' GT roster, will also contest three of the IMSA SportsCar Championship enduros – Daytona, Sebring and Petit Le Mans – alongside Antonio Garcia and Alexander Sims in the GT Daytona class. Bamber, meanwhile, will dovetail his WEC programme with the Ganassi-run Cadillac Racing squad, at the same races alongside Tommy Milner and Nicky Catsburg.

Varrone has become a factory driver after a year in GTE Am with Chevy and will drive one of the Canadian AWA team's entries as the pro driver. Eastwood will be among his team-mates at the Daytona 24.

Bamber became available for an endurance programme with Corvette Racing because Cadillac will run two rather than three cars at Daytona.

GARY WATKINS



BAGNALL/MOTORSPORT IMAGES

## QUINN LOSES SEAT AMID CHANGE TO DRIVER GRADING

IMSA

Briton Alex Quinn has lost his drive with the United Autosports LMP2 squad in next year's IMSA SportsCar Championship. The vagaries of FIA driver categorisation have put a hold on a sportscar career that began in the North American series this year.

The 22-year-old was signed to continue alongside Ben Keating, with whom he raced at the PR1/Mathiasen LMP2 team (below, right). Quinn, as a Silver-rated driver, would have raced in the five rounds that make up the IMSA Endurance Cup alongside full-season drivers Keating and Ben Hanley. A late upgrade to Gold ranking means he's no longer eligible for the spot.

United has now signed Chilean Nico Pino, a race winner in this year's European Le Mans Series, to fill the seat in its #2 ORECA-Gibson 07.

Daytona 24 Hours winner Colin Braun will step back to LMP2 after Meyer Shank Racing's departure from the IMSA GTP class for 2024. The outright winner of two IMSA races aboard an ORECA in 2018 with CORE Autosport will share one of the French cars run by Algarve Pro alongside George Kurtz.

GARY WATKINS



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BoP should not be a shortcut to success in Hypercar class

## World Enduro organisers push for simpler Hypercar BoP

### WEC

The Balance of Performance in the World Endurance Championship's Hypercar class should not be "a pillow of laziness". The term was invoked by FIA Endurance Commission president Richard Mille when the governing body and co-organiser of the WEC, the Automobile Club de l'Ouest, outlined their vision for the BoP.

The two organisations explained that they want a simpler BoP and one that puts more onus on the manufacturers to perform.

"If a competitor is expecting the BoP, because they made a bad choice or they don't perform, will bring everyone back, it is not possible," said Mille. "The BoP cannot solve all the problems; that is just a dream."

ACO president Pierre Fillon added that the intent is that the BoP "should not be an excuse when you don't win".

The statements by the FIA and the ACO follow discussions by the rulemakers and the manufacturers at a working group meeting in Paris in

September at which the majority of participants in Hypercar are believed to have voted in favour of the status quo. But the FIA and the ACO insisted that the plan to reduce the scope of the BoP for next year remains what both Mille and Fillon described as "a work in progress". "We want to change to improve it and make it more simple," explained Fillon.

WEC boss Frederic Lequien (below left) offered more insight into what is being planned: "Our responsibility is to put all the manufacturers in the performance window, in the frame, and then they do their job. This is very important because this is the notion of meritocracy in sport."

Lequien stressed that it is important that "the best remain the best".

Mille pointed that one *raison d'être* of the BoP is to prevent an arms race in Hypercar and that the rulebooks for both Le Mans Hypercar and LMDh machinery that lay down performance windows into which each car must fit are designed to achieve the same target. "Already we have the ingredients to avoid a stupid explosion of costs," he explained. "We have a format in which people can express themselves."

The FIA and the ACO did not reveal any of the nuts and bolts of what they are planning for 2024. But their comments suggest they want to leave the building blocks of the current system in place, including the mitigation of the advantages of the four-wheel drive of the front-axle LMH hybrids, while abandoning attempts to totally balance all cars.

GARY WATKINS

## Bernhard's team leaves the DTM

### DTM

Team 75 Bernhard has left the DTM after two seasons to focus on one-make Porsche championships.

Team owner and two-time Le Mans 24 Hours winner Timo Bernhard explained that a mixture of personal commitments and budget constraints mean it will not be possible for his squad to continue fielding the Porsche 911 GT3-R in the German category next year.

"Finding the right balance between managing the team and my duties as a Porsche brand ambassador has been a great challenge – both tasks require my full concentration," said Bernhard (below, with 2023 DTM driver Laurin Heinrich).

"In addition, the budget required to meet my high standards for the DTM project is currently not available. That is why we have decided to take this step, which is difficult for us."

Team 75 will field amateur drivers in championships running the Porsche 911 GT3 Cup car, while also promoting young drivers in karting and junior categories.

"We will make our know-how and our experience with the Porsche 911 GT3-R available to the newly formed Porsche Team Phantom Global Racing in the GT World Challenge Asia," said Bernhard. "We are reorienting ourselves, but Team 75 will remain active in motorsport. We will continue to follow the DTM closely."

Team 75 joined the DTM in the second year of its GT3 transition in 2022 with a single entry for factory Porsche driver Thomas Preining. He won twice and mounted a title challenge before eventually finishing fifth in the table.

Bernhard's eponymous outfit expanded to two Porsches in 2023, but lost Preining to newcomer Manthey EMA. There were no victories, but Heinrich and Ayhan Guven helped the squad to sixth in the teams' standings.

RACHIT THUKRAL





**RALLY RAID** Nasser Al-Attiyah and Mathieu Baumel won the Dubai International Baja, a round of the FIA World Cup for Cross-Country Bajas, last weekend. It was only their second event in a Prodrive T1 Hunter since their switch from Toyota. The series champions will be part of Prodrive's attack on January's Dakar Rally, which Al-Attiyah has won five times – three times with Toyota and once each with Mini and Volkswagen. **Photograph by Prodrive**

## Cars to stay but events change?

### WRC

As much as 80% of the current Rally1 car will remain unchanged when the World Rally Championship introduces new technical regulations for 2027, according to the FIA.

The governing body has been developing the next set of WRC regulations over the past two years since the launch of the Rally1 hybrid. Rally1 regulations have spawned all-new cars, built around a tougher spaceframe chassis, and produce 500bhp in short bursts from a 1.6-litre turbocharged engine, married to a control 100kW hybrid kit. The cars are powered by 100% sustainable fuel, but are regarded as expensive.

FIA road sport director Andrew Wheatley said: "We have an outline agreement as to what the future will look like, but as is always the case



the devil is in the detail – 80% of the current Rally1 car will stay."

Meanwhile, the amount of remote and more flexible tyre fitting zones could increase in 2024. A package of proposed changes, also including a move to reduce the minimum event stage mileage to 250km to increase schedule flexibility and the possibility of introducing a new points structure, will be discussed at the next FIA World Motor Sport Council on 6 December.

**TOM HOWARD**

## NEW F1 COMMISSIONER

The FIA has appointed ex-motorsport journalist Dieter Rencken to its new post of Formula 1 Commissioner to assist with strategy. Already an advisor to governing body president Mohammed Ben Sulayem, he will be involved in discussions with stakeholders to form the new Concorde Agreement, which will take effect in 2026.

## HARTLEY/HERTA TO IMSA

Four-time World Endurance champion Brendon Hartley and IndyCar star Colton Herta have been named as the additional drivers for the WTRAndretti Acura squad in the long-distance IMSA rounds. Hartley will share one ARX-06 with Ricky Taylor and Filipe Albuquerque, Herta the other with Jordan Taylor and Louis Deletraz.

## TURBO POWER FOR VANWALL

The Vanwall Racing squad is reworking its Vandervell 680 Le Mans Hypercar for a new engine for its projected 2024 WEC campaign. The German-based team has confirmed it will no longer use the 4.5-litre normally aspirated Gibson V8 and that it is swapping to a turbo unit. It is only saying for the moment that it is a proven powerplant.

## RAHAL CONFIRMS DRIVE

Graham Rahal has signed a new multi-year deal to stay at Rahal Letterman Lanigan Racing in IndyCar. The 34-year-old, who finished 15th in the 2023 standings, joins Christian Lundgaard and Pietro Fittipaldi as RLL's confirmed driver line-up for the 2024 campaign.

## PARAGUAYAN RACER TO F2

Formula Regional racer Joshua Duerksen is graduating to Formula 2 for next season with PHM Racing. Duerksen, who will become the first Paraguayan ever to line up on an F2 grid, took part in last month's official F3 test at Imola with the German squad. He has taken a best finish of third in two seasons of FRegional European, plus two poles in the Middle East series.

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DRIVEN BY RACING

## GB3 star Dunne joins stellar Macau GP cast

### MACAU GP

GB3 runner-up Alex Dunne is the final addition to the entry list for this week's Macau Grand Prix on what will be his race debut in FIA Formula 3 machinery.

The Irishman, who turned 18 last weekend, has made the trip East with Hitech GP, the team with which he won the 2022 British F4 title and only just lost out on the GB3 crown in last month's finale at Donington Park despite taking more wins (five) than any other driver.

Dunne travelled straight from Donington to Imola for his first taste of F3 in the third of the series' official post-season tests. After the first morning, he took over one of the Hitech cars from regular Luke Browning, who had to be at Silverstone the

following day for his F1 prize test for winning the 2022 Aston Martin Autosport BRDC Young Driver of the Year Award.

Dunne went 10th quickest on the second morning of the test, and topped the wet afternoon session by a second. He now lines up in Macau alongside Browning and Red Bull Junior Isack Hadjar, who is stepping down from F2 for the event.

There has been one change to the entry from MP Motorsport, with 2021 F3 champion Dennis Hauger stepping down from F2 to replace Franco Colapinto, who is preparing for his F2 debut and maiden F1 test with Williams in Abu Dhabi. Norwegian Hauger is one of many drivers from his era of F3 who missed out on the chance to race in Macau



while it was under heavy COVID-19 restrictions.

The addition of Dunne left just one 'TBA' remaining on the 27-car Macau entry list at Rodin Carlin, which

confirmed to Autosport that it would run just two cars for Dan Ticktum and Zane Maloney.

[P46 MACAU GP PREVIEW](#)

## Lindblad tops F4 contests around tricky Guia streets

### MACAU F4

Red Bull Junior Arvid Lindblad took victory in the Formula 4 event that headlined the first weekend of the Macau Grand Prix's celebrations for its 70th running.

The Aston Martin Autosport BRDC Award finalist bounced back from blotting his copybook in free practice, when he crashed at Lisboa on an out-lap following a red flag. He put that behind him to snatch pole

position for this non-points F4 South East Asia invitational round from Prema team-mate and fellow Brit Freddie Slater, and R-ace GP's Hadrien David.

Lindblad led home Slater in a wet qualifying race, which started behind the safety car and featured barely any green-flag racing. The last caution, which took the race to the chequered flag, was caused when 2021 Formula Regional European runner-up David crashed out of third at

Dona Maria. That promoted Prema's two-time Macau GP F4 winner Charles Leong to the podium.

The safety car also saw much action in the final, in which Slater was crawling all over Lindblad before slowing with a suspected electrical problem and falling almost to the back of the field. Lindblad proved supreme from here on whenever there was any green-flag running, while Leong and Rashid Al Dhaheri completed a Prema 1-2-3 just ahead of Australian Jack Beeton (AGI Sport), this trio battling for second throughout. Slater recovered to ninth once he'd got his car running cleanly again.

Another Briton, Adam Christodoulou, was in action in the GT4 race. He claimed pole on his Macau debut at the wheel of a Lotus Emira, but got slipstreamed off the start by team-mate Luo Kailuo and narrowly avoided being harpooned into a shunt at Lisboa by an errant car behind. Christodoulou gave chase to Luo for the first half of the race, before it was terminally red-flagged owing to a blocked track on the run to the Melco hairpin, securing a Lotus 1-2.



Lindblad and Slater impressed in Macau

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## F1 LAS VEGAS GRAND PRIX PREVIEW



## Las Vegas Circuit

Length 3.853 miles

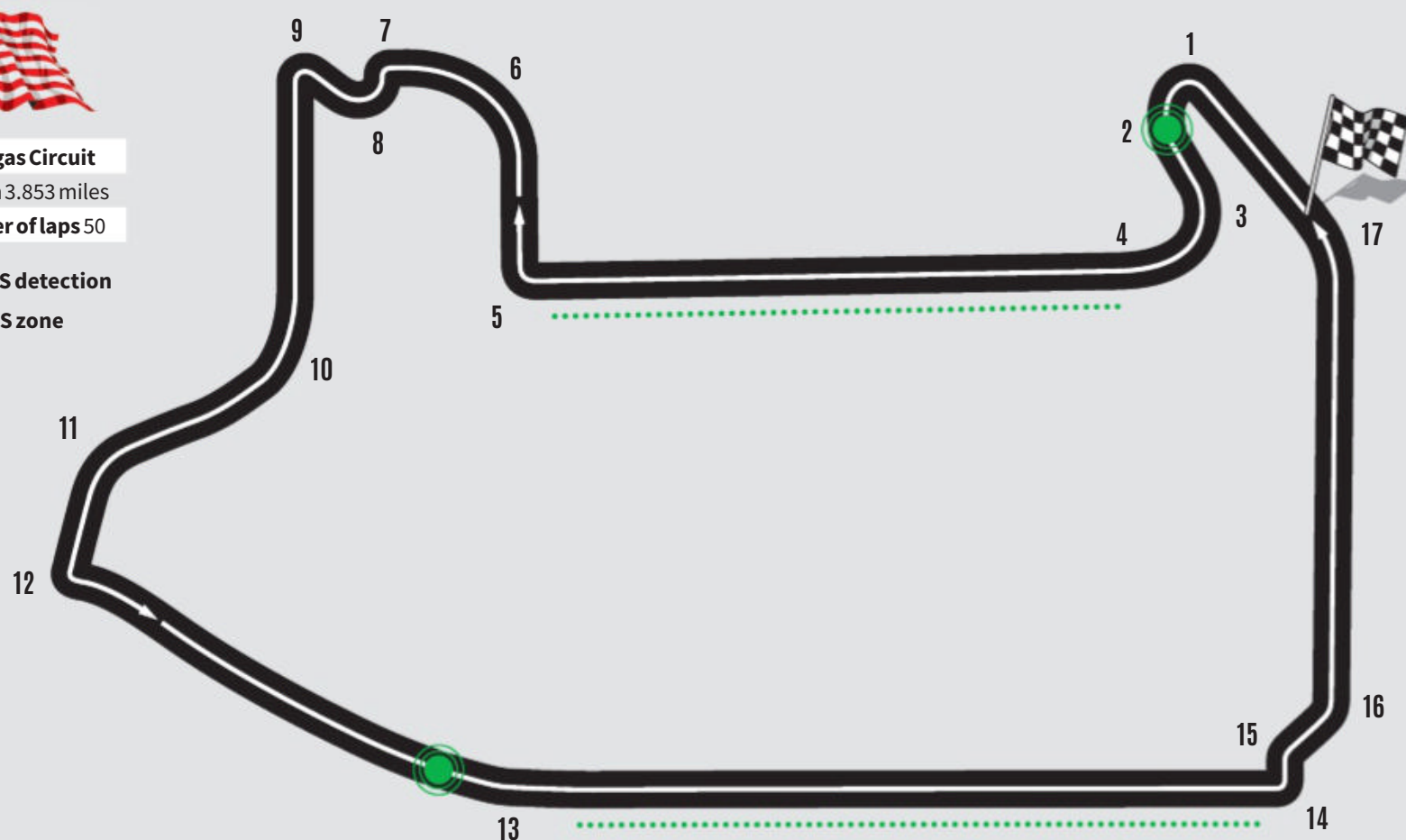
Number of laps 50



DRS detection



DRS zone



## UK START TIMES

Friday 17 November

FP1 0430 FP2 0800

Saturday 18 November

FP3 0430

QUALIFYING 0800

Sunday 19 November

RACE 0600

CATCH THE RACE LIVE

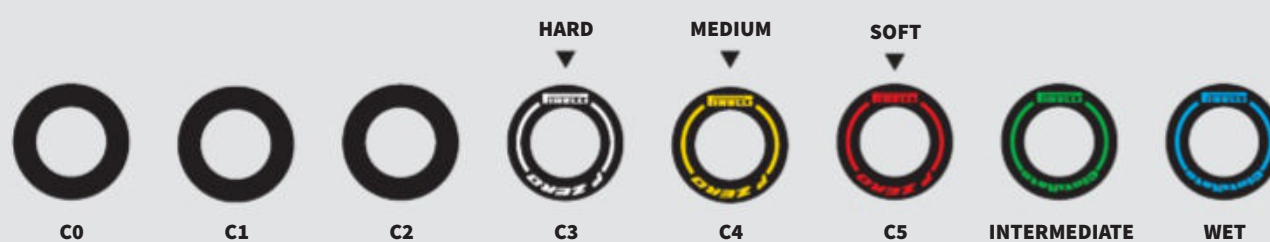
SKY SPORTS F1

BBC RADIO 5 LIVE

TV Highlights

CHANNEL 4 1230

## TYRE ALLOCATION



## CHAMPIONSHIP POSITIONS

## Drivers

1	Verstappen	524
2	Perez	258
3	Hamilton	226
4	Alonso	198
5	Norris	195

## Constructors

1	Red Bull	782
2	Mercedes	382
3	Ferrari	362
4	McLaren	282
5	Aston Martin	261



Norris up to fifth in points

SUTTON

## LAS VEGAS STATS



Alboreto was master of  
Caesars Palace car  
park in 1982 race

## Previous winners

1982	Michele Alboreto	Tyrrell
1981	Alan Jones	Williams

## Laps led (old track)

Alan Jones	75
Alain Prost	38
Michele Alboreto	24
Rene Arnoux	13



Piquet clinched  
title here in 1981

PHIPPS



# CONGRATULATIONS ON A HYPERHYPER FANTASTIC 2023 SEASON



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# F1's Las Vegas gamble

*Long straights and cold temperatures could provide a surprising result as the teams head to 2023's most-hyped race*

ALEX KALINAUCKAS

**A**mid all the talk and speculation swirling around Formula 1's return to Las Vegas this weekend, there's still a not-so-humble sporting event at the centre of all the much-vaunted glitz and glamour. Though that famous pizzazz might just be dimmed if the suggested traffic gridlock and mass walkouts by 35,000 protesting waiting staff turn out to be accurate...

So, then, who is the favourite to become the first F1 winner in Sin City since Michele Alboreto in 1982's Caesars Palace car park grand prix? Well, rather obviously given his current record-setting streak of 17 wins from a possible 20 so far, triple world champion Max Verstappen arrives with his Red Bull team as the driver to beat. That combination is clearly no outside bet – Verstappen unlikely to lose focus even in a city so renowned for distractions. But there remains the possibility another team and driver combination could slot in ahead of Verstappen.

Street track bumps have caught Red Bull out this year, even if the team now has a much better understanding on the set-up changes required to traverse such track imperfections that it got so wrong in Singapore.

McLaren may well insist it has absolutely no chance at this venue. But it has done that everywhere of late and then been right in the hunt for pole and bothering Verstappen in races. But the two hairpins adorned with playing card symbols on

## “Again, F1's thrilling billing will meet the cold, hard processes of the engineering teams”

their kerbs in Vegas *should*, theoretically, highlight the remaining low-speed turn weakness of the MCL60.

Mercedes challenged Red Bull in F1's last US visit, at Austin, but still seems flummoxed by the W14, based on its Brazil showing. It was also nowhere, really, at Monza thanks to that car's remaining drag issues – and that could be relevant this weekend.

Looking at the new 3.85-mile layout in Vegas – second only to Spa in terms of track length on the 2023 schedule – it could well favour another team in the closely fought battle behind Red Bull. One that has already managed to snaffle the only victory Verstappen and co have let fall from their collective grasp this year: Ferrari.

Given the Vegas track is essentially a cluster of very long straights sewn together with a series of staccato hairpins and

90-degree turns, Ferrari is expected to bolt on its ‘Monza special’ downforce arrangement. The slimmed-down rear-wing package turned Ferrari into a genuine victory contender on home turf. There, soon-to-be Singapore victor Carlos Sainz took pole, led the early stages and was only undone by Ferrari's lack of downforce in the few fast Monza corners, which meant Verstappen's rears wore less and the RB19's extra speed running onto the straights kept him in DRS range. The SF-23 also rides kerbs well and copes with track bumps better than Red Bull, with Charles Leclerc also somewhat of a regular street-track sensation.

And, while the straights dominate the new Vegas layout, it has been suggested that Monza-like slipstream battles won't be the norm here, which possibly boosts Ferrari if it can qualify the slippery SF-23 ahead of Red Bull, given how Monza turned out.

The weekend's major sporting talking point will be how the cars behave in desert night temperatures that can drop as low as 4C at this time of year. This has long been a focus for the teams and tyre supplier Pirelli, but fears over this might end up being rather misplaced given the temperatures at the time of writing are forecast to be closer to double what was much discussed. This leaves them more in line with what the field experienced at the 2020 Eifel GP at the Nurburgring, rather than F1's coldest ever race (which is believed to be the 5C experienced at the 1978 Canadian GP). But that forecast is still on the nippy side for precocious single-seater racing machinery and the rubber that gets bolted onto it. It's why drivers might end up “doing three or four prep laps for qualifying” – per Williams racer Alex Albon.

Exacerbating the cool temperature problems are, again, the long straights, as here the tyres are predicted to fall out of their ideal operating windows fast – especially under safety car conditions. And with low-downforce packages required across the grid – not something needed at the Nurburgring – this combination is where the chaos could start. Again, cooling tyre temperatures theoretically boosts Ferrari too in that the SF-23 warms its boots well. That trait may well help its drivers retain better tyre temperature levels over a race stint, which would help in maintaining tyre life – so long a Ferrari weakness.

There's plenty then pointing to a recipe for a shock result this weekend. Even though, of course, Verstappen and Red Bull will try their combined best to avoid it.

Once again, F1's thrilling, entertaining billing will meet the cold, hard processes of the engineering teams – all trying to ensure the most boring way to score the best result. As is their *raison d'être*. All at arguably the most anticipated new race of F1's recent calendar explosion, with \$500million alone invested by the commercial rights holder for the paddock building at a race F1 is promoting itself. A gamble to watch and check the payout. 🍀



# Very different dominators

*The statistics recorded by the 1993 Williams FW15C and the current Red Bull RB19 highlight a fascinating contrast between Formula 1 eras*

KEVIN TURNER

**T**wo great Formula 1 cars, both including the work of Adrian Newey. One has an average edge in qualifying of 0.207 seconds and has so far managed 19 victories from 20 grands prix (95%), while the other enjoyed a massive advantage of 0.996s and yet ‘only’ won 10 of its 16 races (63%).

The differing records of the 2023 Red Bull RB19 and the 1993 Williams FW15C, in many ways the most sophisticated F1 car of all time, reveal a lot about how things have changed in 30 years. While witnessing Red Bull’s domination despite only starting 1-2 once, it’s hard to imagine how Williams didn’t put up similar numbers with its 12 front-row lockouts. Reliability is an obvious factor. F1 cars have become incredibly reliable over the past couple of decades. Max Verstappen has yet to retire from a single GP this season, while Alain Prost suffered an engine failure while leading the 1993 Italian GP for Williams. Team-mate Damon Hill suffered even more and the overall finishing rate was much lower than today. Quality control has moved on.

Former McLaren designer and engineer Mark Williams underlines the improvements: “Because you’ve got so many more people now, you can have a focus on reliability. Process has improved. F1 teams now are manufacturing companies, many of them tied to OEMs. You get good business practices filtering in and there’s a lot more crossover of techniques going in from big industry rather than it being a cottage industry.”

That sort of development also helps to explain why teams are usually better – or at least more consistent – at executing races than they used to be. Simulation tools, massive amounts of data and teams of strategists mean that cars usually go to the grid close to their optimum, so swings in the competitive order are smaller and rarer. As Patrick Head relates elsewhere in our 1993 special, a simple set-up change could have made the FW15Cs far more driveable at a wet Donington Park in 1993, though whether that would have been enough to defeat McLaren’s inspired Ayrton Senna is very much open to question. The miscommunication at Interlagos that led to Prost staying out on slicks and ultimately crashing is also less likely now.

Similarly, Red Bull is usually among the quickest teams when it comes to pitstops. The same could not be said for Williams in the early 1990s, creating more opportunities for others.

The drivers have to be considered when it comes to 1993 Williams vs 2023 Red Bull. Sergio Perez is further away from Verstappen than Damon Hill was from Prost. Hill could have won more races, though his biggest lost chances (engine failure at Silverstone, puncture at Hockenheim) fell to Prost, so didn’t affect the Williams tally. But, despite the fact that Prost is an all-time legend and Hill went on to take the 1996 title, it’s probably fair to

suggest that the Frenchman in his final campaign and the Brit in his rookie season were not as consistently strong as Verstappen, who is probably at the peak of his powers. Senna and Michael Schumacher – the two non-Williams winners of 1993 – had more chances to snatch success than Verstappen has allowed Lewis Hamilton, Charles Leclerc and co, particularly in wet conditions.

Schumacher’s victory came in Portugal when, on a different tyre strategy, his Benetton was able to fend off Prost to win by just

**“Red Bull’s ability to make the most of its advantage is what stands out: all bases are covered”**

under a second. But Prost, a man who had lived (and lost races) through a less-reliable era, knew that second place would be enough to take his fourth crown. It’s hard to imagine Verstappen, armed with DRS and a faster car, not launching more of an attack.

Of course, there are other factors at play. For example, one of the RB19’s great strengths is how it uses the Pirelli tyres across a stint, thereby increasing its advantage in races. Like the Ferrari F2004, its real-world advantage is actually bigger than the qualifying stats suggest. There’s also the aforementioned DRS, which at most circuits makes it much easier for a delayed fast car to recover. Just look at how easily Verstappen cruised past Lando Norris at Silverstone this year compared to Prost’s strenuous (though successful) efforts to pass Senna at the same venue in 1993.

All that said, the Williams was only genuinely beaten for pace in the dry at the Adelaide finale by a fired-up Senna in a much-improved MP4/8. Singapore is currently the only race in which Red Bull has not set the pace in 2023. Red Bull’s ability to make the most of its advantage is what stands out: it has all the bases covered.

The cars of the early 1990s were pushing the boundaries of electronic technology in a way their modern counterparts do not, with active suspension and traction control just the best-known of the wizardry attempted. Such pioneering work is always likely to mean things are not always optimised, or go wrong completely. Everyone knows so much more now and has the resources to find out more. The scope for ‘random’ results is much lower now. Perhaps this all helps to explain why many look back on previous eras of supremacy more fondly than the current status quo. Domination now really does mean *domination*. ❄

➔ P18 1993 SPECIAL

# YOUR SAY

*Why should age exclude ability as so often seems the case these days? Now it seems if you haven't made it to F2 before you are out of your teens you are past it!*

**DOMINIC MALVERN**

## Age should be no bar to talent

Brilliant to see Jake Dennis given an FP1 opportunity by Red Bull at the ripe old age of 28! Why should age exclude ability as so often seems the case these days? I know from personal experience. A few years ago my own son was told he was too old to make the grade at 22 and yet he only started at 20 and won prolifically in everything he sat in right from the beginning. Now it seems if you haven't made it to F2 before you are out of your teens you are past it!

People forget that Ayrton Senna was 21 when he came to the UK to drive a Formula Ford. Damon Hill didn't get in one until he was 23 and his big F1 break with Williams came at 32 and he was world champion at 36! His dad Graham, a double F1 world champion, didn't even possess a road licence until he was 24 and had his first laps in a racing school car at Brands Hatch sometime after.

Good luck to Jake (below), who proved his immense talent admirably. Hope the test goes well. I'd like to think that, if it does, it could lead to bigger things!

**Dominic Malvern**

**Conwy, North Wales**



## Sprint race suggestions...

Firstly, I have to say I am no fan of the sprints in F1, but if we have to have them there needs to be changes to the weekend format. I also think there should be a separate sprint championship so it doesn't affect the real championship.

One solution could be to have practice on the Friday for an hour, which can double as qualifying for the sprint. The fastest times in this first session set the sprint grid; it would be up to the teams how much time they spend on 'qualifying' or on set-up. The sprint race is then run later on the same day, probably leading to higher attendance on the Friday.

On the Saturday, there is another session of free practice, cars would not go into parc ferme until after this, the qualifying session for the grand prix would follow this in the usual manner.

This format would not adversely affect the grand prix as the current format obviously does.

**Peter Allen**

**By email**

## ...followed by more sprint race suggestions

Nearly everyone agrees that sprint races are not working too well at the moment. I suggest keeping the qualifying for the grand prix as now on Friday, then the morning after there is a reversed-grid race using the reverse of the main qualifying but only awarding half points, but for a longer half-GP length. There is then one last practice for half an hour after parc ferme reopens.

I think everyone could get something out of that!

**Rob Cliff**

**Skipton, North Yorkshire**

## Just make the F1 pie bigger

If F1 teams are scared of losing some of their pie, can't the FIA make a bigger pie? Andretti are paying enough to cover this, the FIA should sort this out.

**Chris Wood**

**By email**

## HAVE YOUR SAY GET IN TOUCH

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# THE MOST SOPHISTICATED F1 CAR OF ALL?

*Williams's FW15C represented the pinnacle of the grand prix gizmo era, but although it was super-quick, it was by no means all-conquering*

ADAM COOPER

PHOTOGRAPHY  motorsport  
IMAGES



## WILLIAMS FW15C

Engine	Renault RS5 67-degree naturally aspirated V10
Power	760-780bhp @ 13,800rpm
Fuel	Elf
Weight	505kg
Wins	10
Points	168 (1st)



FW15C had active ride, traction control, auto shifting, ABS, power brakes and steering...



**T**he Williams FW15C of 1993 was one of the most dominant Formula 1 cars of all time, at least in terms of pure one-lap pace. Between them, Alain Prost and Damon Hill secured pole position for 15 of the 16 races, losing out only at the finale in Australia. And yet somehow 'only' 10 were converted into race wins.

The man who made life so difficult on Sundays and who also took that stray pole in Adelaide was Ayrton Senna. The Brazilian conjured up five race victories for McLaren on days when either something went awry for Williams or his sheer brilliance allowed him to outperform a rival car that should have been quicker. In addition Michael Schumacher, building up the momentum with Benetton that would see him win the title in 1994, also managed to steal a victory from the clutches of Williams.

The FW15C remains perhaps the most sophisticated F1 car ever seen in terms of the tools available to its drivers. They included active ride, traction control, automatic shifting, ABS, power-assisted brakes and power steering, and a drag-based push-to-pass option. Meanwhile CVT – constantly variable transmission – was being tested for 1994.

The car was supposed to have raced in 1992, but that year Nigel Mansell proved to be so fast with the interim FW14B that the new model was held back. "We weren't expecting the performance dominance that 14B showed," recalls former Williams chief designer Adrian Newey. "The original intention was to introduce the 15 for the start of the 1992 European season, and then go from there. But through winter testing our performance looked pretty strong. And we started to feel that actually 14B had the speed to win the championship. So our most likely weakness was going to be reliability. And on that basis I think in January we stopped all design and manufacture of 15A, and instead just concentrated on making 14B as reliable as we could."

At the time Williams led the way with its pursuit of high-tech gizmos under technical director Patrick Head. "You could wake up at 3am and think of doing ABS, come in in the morning and start work on it, and deliver it in a few weeks," says then control engineer Paddy Lowe. "Traction control was one line of software actually, the core part of it. It just took a few weeks to put together.

"It was an amazing time, we did so much with very little resource. We didn't do it all that well, all the time, but we did it well enough to make quick cars and win races. So it was exciting. The FW15 was essentially a properly packaged version of the suspension with the same concept as 14B. The 15 was the first car that was »



designed from the outset to be active, and only be active.”

“It was a faster car than 14B,” says Newey. “It had more downforce and better integration of the active, and we developed the active in terms of both hardware and software.” That helps to explain why some of 1992’s lap records fell despite rule changes to reduce the cars’ track and tyre width.

It may have all been done with the minimal computing power, but FW15C was a very impressive machine for its time. “The components were manufactured to our specifications,” says Williams race engineer David Brown. “Nothing was turn-key, it was all specifically for the job. And the 15C was a really, really good car. It was fun. There were times when it was a proper headache because of the complexity. If something did go wrong, then it would tend to be a big problem.

“As an organisation, the people in R&D and the people who did the electronics created systems to enable them to better problem-solve, and to diagnose issues with the car so much better in 1993 than we did in 1992. So we had fewer of them. But if you let the technology get out of your grasp, it was

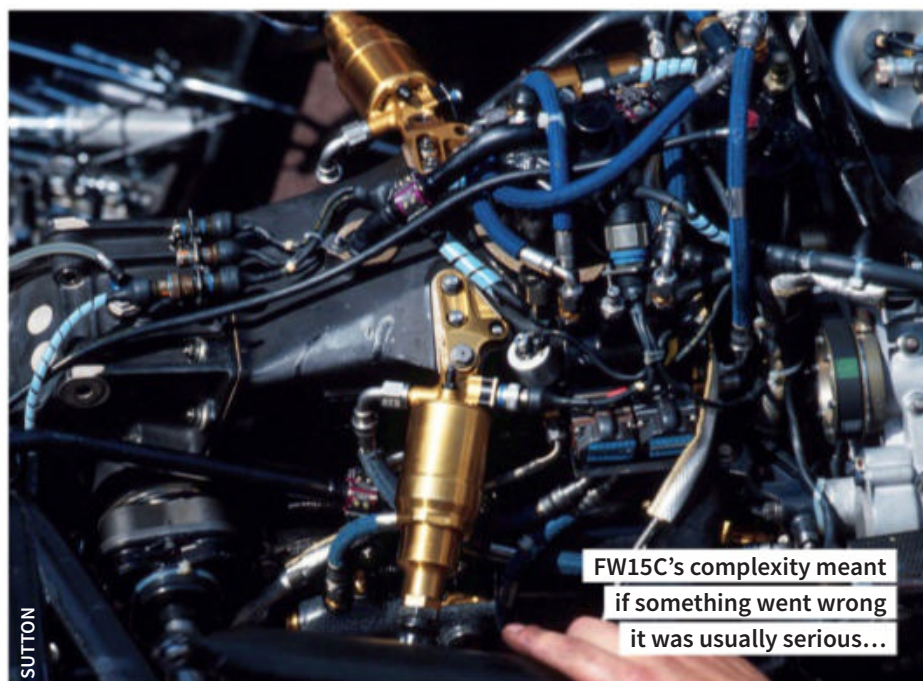
really bad news. And I think a lot of teams found that out!”

Mansell had won the 1992 title at the Hungarian GP in August, but he didn’t stay around to defend it as team-mate to the incoming Prost, who had spent a season on the sidelines. With the champion departing for a new challenge in the USA, and Riccardo Patrese committed to a move to Benetton, Frank Williams had to find a new driver.

After some procrastination he finally settled on Hill, the team’s established test driver, who had logged some extra F1 mileage with Brabham. “He was our main test and development driver through 1992,” says Newey. “And he seemed to do a very good and very competent job, and looked pretty quick. The engineers, including myself, lobbied Frank – ‘Why don’t you just put Damon in the car?’”

“There was this big debate, was he ready for it and so on,” says Lowe. “I think to me, it was a no-brainer, because he was clearly really quick in testing and very disciplined and professional, and calm as well.”

Williams finally gave Hill a call one Friday evening and asked him to come to the Didcot factory. “When I got there it wasn’t,





Head blames team's own  
"stupidity" for letting Senna  
run away with Donington win



Prost bowed out of F1  
with fourth title



Hill feels offer of a race  
seat was a tad grudging

'Oh, I really would love to have you in the car,'" Hill recalls. "It was, 'There's one or two people here who think you'd do a good job. And I have a lot of faith in my engineers'. He never said, 'I think you can do it!'"

After a year out of the cockpit, and with no prior experience of active suspension and many of the other systems on the car, it took Prost time to find his feet. He also brought a calculated approach that was unfamiliar to the team.

"If Nigel did a lap time you knew that was the speed of the car," says Lowe. "Whether it was qualifying or wet winter testing in Ricard, he just always went 110%. Whereas in testing with Alain you didn't know where the car was, because he never really delivered it until he needed to. But his feedback was good."

Come the first race in South Africa Prost was on it, winning from pole, while Hill had a frustrating first-lap spin. However second time out at a rain-hit Interlagos Prost went off on slicks.

"Alain came on the radio and said, 'I'm going to pit,'" recalls Brown. "I said, 'Yes, but be careful as you come over the brow into the pitlane because it's very slippery'. And he misunderstood me, or misheard me, and stayed out. And afterwards he said, 'I thought you were telling me to stay out!' 'Why would I tell you to stay out?' Somehow those extra few words were enough to make him think he had to stay out, which of course was the wrong thing to do."

"It was a shame really, because he was having a good race and it would have been nice for us to win that one as well. As it was, we broke the car..."

Prost's mistake left the door open for Senna to win his home grand prix and demonstrate to the world that he was there to take advantage of any slips by his old rival. Senna was to get another chance, again in the wet, at Donington Park.

Both Williams drivers endured a nightmare afternoon of swapping back and forth from wets to slicks. "I'm always reading about the brilliance of Ayrton Senna at Donington," says Head. "It was actually the stupidity of us! The problem was that the active car ran 3-4mm above the deck to get optimum downforce. And the rain was so heavy at Donington that it was more than 3-4mm deep. So our drivers were suddenly finding that they were flying off the track like on a surfboard. And we had the knobs in the cockpit

*"It was a shame, because it would have been nice for us to win that one as well. As it was, we broke the car..."*

where we could have got the drivers to raise the car, but we were too stupid to understand quite what was happening. I'm amazed that we finished second and third with our 13 pitstops!"

"We should have won that race," Hill insists. "I was too inexperienced. Alain was slightly unsure of the car, so he didn't have the confidence to stick with slicks when he should have stuck with slicks. Neither of us did. And we had no communication to the pits at all, it seemed to me, there was no kind of 'we need to have a conversation about what's going on'."

"It was just simply, 'I'm coming in', or 'don't come in', or 'stay out'. It was an absolute nightmare. You'd come down the pitlane and nobody would be ready with tyres. It was chaos. And I will forever kick myself for letting Ayrton through quite so easily. But after my shaky start to the year I thought it was probably best to just stay out of trouble!"

After that disastrous Donington race Prost knuckled down, winning six of the next seven races. The only loss came in Monaco, where a silly jumped start and subsequent penalty again opened the door for Senna.

Starts were a regular problem for Prost, who perhaps didn't grab hold of the FW15C in the way Mansell had with the FW14B. "Prost had a real struggle with making that car pull away," confirms former Williams chief mechanic and later team manager Dickie Stanford. "He just didn't give it enough revs. Each time it stalled, the mechanic had to go down inside the bodywork, right to the front of the gearbox, put a tool in and get it into neutral manually."

"I'm not sure Alain understood everything about the car. Nigel understood it because he did all the development work at Lotus and we ran a system in the late 1980s. He knew what to expect from the system."

As the year progressed Hill also became more of a force, »

taking his first pole in France and coming close a couple of times before logging a hat-trick of wins in Hungary, Belgium and Italy. Prost unexpectedly found himself facing strong competition from within his own camp.

“At Monza I tangled with Ayrton and then I had to charge back because I had front wing damage or something,” says Hill. “And I was catching Alain and they came on the radio and said, ‘Just make sure you don’t push’. We’d already had this thing in the French GP, where I was behind Alain and he was telling the pits, ‘Tell Damon to slow down’, because he didn’t want to push too much. I was getting instructions about how Alain’s got to win, this sort of thing.

“And then in Monza I was so pumped up and I was catching Alain and they said on the radio, ‘Don’t race Alain’, or something like that. So I came on the radio and said, ‘Tell Alain I will race’.

“And my engineer John Russell came back and said, ‘Thank you, Damon’. I was being told not to race. But I was catching Alain, and I was thinking to myself, ‘What am I going to do now?’ And then his engine blew up. So that solved that problem!”

Schumacher scored his single victory in Portugal on a day when Prost played the percentage game and accepted the second place that would secure his fourth world championship. Senna won the final two races of the season in Japan and Australia, essentially on merit. By then the FW15C had reached the ultimate in terms of the efficiency of its various high-tech systems. “Alain and Damon had a bit of a battle going on there,” says Brown. “And it was the battle of the ABS systems, they were braking incredibly late. It was marvellous to watch. They were just crazy in the braking areas.

“Even earlier during the year, they would complain about a sore neck, because in those days, we didn’t have all the headrests that you have on a modern car, and they would get really sore muscles in the back of their necks. They couldn’t hold themselves up.”

Adelaide was to be the last hurrah for most of the gizmos perfected on FW15C as a ban on driver aids was imposed for

*“Damon stepping into a top team, and delivering points straight away, that’s always a sign of great quality”*



Hill clashed with Senna at Monza, triggering fightback

COLOMBO

1994. It was also to be Prost’s final F1 start, and he remains one of the few drivers to walk away from the sport as world champion and not return. “I think in truth he was never pushed that hard,” says Newey. “And that’s no disrespect to Damon in any way. But it was Damon’s first proper season. I know he had driven the Brabham, but he was getting himself up to speed. To some extent Alain was from a slightly earlier generation, where you didn’t take any more risks than you needed to get the job done, which was admirable. And that was the way he drove the car.”

For Hill, the 1993 season was a springboard to the world championship that he would finally secure three years later. “He’s had a lot of criticism over the years, and at the time,” says Lowe. “It’s funny how some of these heroes get in a car, and they make all sorts of mistakes, and that’s always sort of fine. But when you get somebody who doesn’t throw it away every afternoon, they’re considered boring! Damon stepping into what was a top team, and delivering points straight away, that’s always a sign of great quality.”

The FW15C represents both the end of an era – for Prost and F1’s regulations – and the start of a new one in the shape of Williams’s next world champion. ✎



Senna pipped the Williams duo to pole at Adelaide season finale, then led them home

SCHLEGELMILCH



Hill relished gizmo-laden FW15C – and the engine upgrades that just “kept coming”

## DAMON HILL ON THE FW15C

Before landing the Williams race seat for 1993, Damon Hill conducted a lot of the testing of active ride and other trick systems for the team with the FW14 and 14B. However, even for a man used to the odd quirky issue, an early run in FW15C at Barcelona was something of a rude awakening.

“What you used to do was press the downshift button while you were on the straight,” he recalls. “And then the moment you hit the brakes, the engine would start changing down, as the revs dropped.

“Only this time some Renault guy forgot to put the bar in to stop it changing down before the revs had dropped. Down the straight I pressed the button, and it started changing downwards immediately. And then the revs just went up, up, up and eventually the engine just completely exploded. That was my first lap, and it threw me off the road...”

Despite that early setback it was soon apparent that the car was going to be hard to beat. “It was blisteringly quick, and better than everyone else’s car out there,” says Hill of the FW15C. “There were some sort of similarities you could draw to the Red Bull today.

“The question was asked whether or not we



SCHLEGELMILCH

were wise to show our true potential? Because inevitably people would try and rein us in. So we always tested with 60kg of fuel on board. No one ever did a low fuel run.

“The Renault was the best engine. And it was amazing because they kept coming with upgrades, the engines kept getting more powerful, the fuel was getting better. Everything was going in the right direction.”

Hill loved the gizmos, but they were taken

off for testing of the FW15D, the car that paved the way for the FW16 of 1994. “I was completely lost because I hardly did any testing on a passive car at Williams at all,” he says. “I’d driven a Brabham, but that was the first and only passive F1 car I’d driven.

“Ayrton was asking me, ‘What is this like?’ I said, ‘Don’t ask me, because I’ve been driving an active car all the time, I thought you would know!’”

# SENNA AND McLAREN'S LAST HURRAH

*The 1993 season is remembered as Senna's great campaign in an 'uncompetitive' car, but the MP4/8 was better than many recall*

GARY WATKINS

PHOTOGRAPHY  motorsport  
IMAGES

**M**cLaren had lost its supply of Honda V12 engines in the summer. A replacement wasn't found until November, and then only a supply of customer-spec Ford Cosworth V8s. It didn't start on the development of the active-ride system essential to keep pace with Williams until the autumn. And to cap it all, the team's talisman driver, Ayrton Senna, was telling the world that it was far from certain that he would return the following year. The odds looked stacked against McLaren at the end of 1992.

McLaren's 1993 Ford-powered contender, the MP4/8, wouldn't run until a month before the start of the season at Kyalami in South Africa. Two weeks into its belated and truncated testing schedule, Senna climbed aboard for the first time on 3 March at Silverstone. The Brazilian liked what he found, smashed the winter testing record and quickly did a deal to race the MP4/8, an agreement involving famously unconventional terms. And so began a season that, while slightly surreal in the context of McLaren's history, is central to the Senna legend.

If you believe the generally held contention at the start of the year that McLaren was some kind of underdog, then it punched

*“Former McLaren boss Ron Dennis has called the MP4/8 ‘one of the best cars we ever made’”*

above its weight over the first half of its 1993 campaign. Senna won three of the first six races and led the championship from pre-season favourite Alain Prost at the end of that run. Yet by the season's end McLaren had a car that was probably a match for the Williams-Renault FW15C in which Prost had wrapped up the title after 14 of the 16 races. No wonder former McLaren boss Ron Dennis has called the MP4/8 “one of the best cars we ever made”. “Mindblowing” is another superlative he has attached to it.

That such words can be used to describe the 1993 McLaren is all the more remarkable because chief designer Neil Oatley and his team set to work on what would become the MP4/8 not knowing the identity of the engine in the back. Or how many cylinders it would have! Dennis was trying to convince Honda to reverse its decision to quit at the same time as striving to get the same Renault engines as Williams, a deal that would have involved the purchase of Ligier for its supply of the French V10s. All the »

Wet-weather mastery helped Senna to five wins with the MP4/8



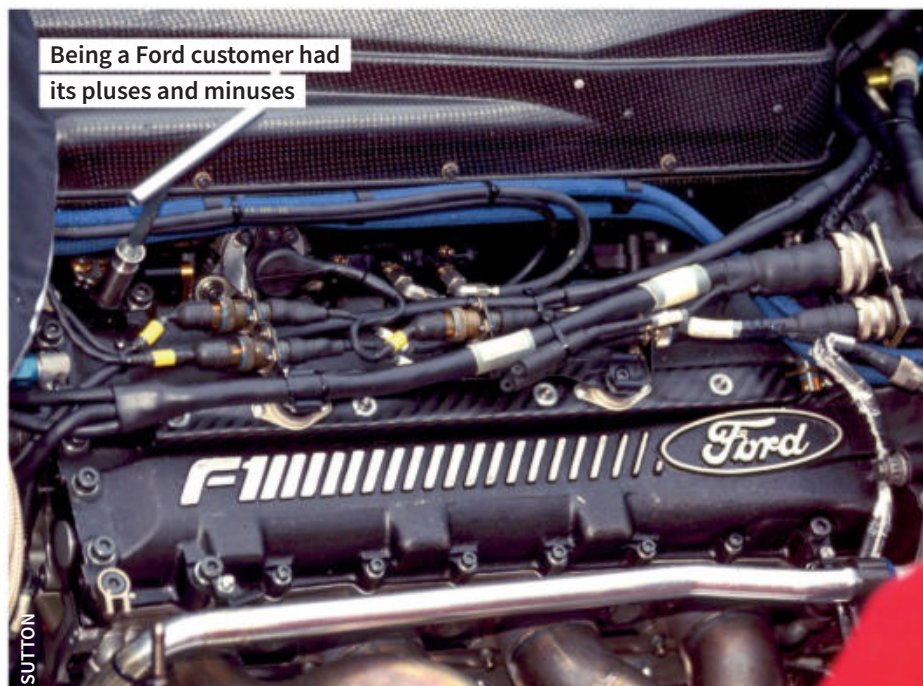
SCHLEGELMILCH



## McLAREN MP4/8

Engine	Ford HB 75-degree naturally aspirated V8
Power	680-730bhp @ 13,200rpm
Fuel	Shell
Weight	505kg
Wins	5
Points	84 (2nd)





Being a Ford customer had its pluses and minuses



Donington victory regarded as one of Senna's finest

while the fallback position was paying for Ford Cosworth HB V8s, not the latest pneumatic-valve version to be used by Benetton, the factory team, but customer units of the same spec as those to be supplied to Lotus and Minardi.

"We started work on that car really not knowing if it would have a V12, a V10 or a V8," recalls Oatley. "We were pressing ahead with the aero package, but the big question mark was the engine and fuel tank lengths. We just had to accept that the wheelbase would have to be tuned once we knew what engine it was going to have. We were able to adapt fairly easily when the Ford came."

It helped that Cosworth provided McLaren with some help via the back door prior to the inking of a deal that cost the team \$6 million. "Cosworth was fairly friendly and gave us some basic information, so we could do some work as if it was all going to go ahead," continues Oatley. "It was a bit unofficial. If we hadn't had those details until November it would have been almost impossible to do it on time."

There was a further complication in the conception and

gestation of the MP4/8. It wasn't the change in tyre rules – narrower all round – and tweaked aero regs for 1993, which Oatley reckons had negligible effect on the design process. Rather it was the decision to produce an active car to challenge Williams head on. McLaren's big British rival had moved the F1 goalposts with the introduction of the active B-spec FW14 in 1992, a year that Nigel Mansell swept to the title with a then season high of nine victories.

"Ron wanted an active-suspension system; he wanted a car full of technology," recalls Giorgio Ascanelli, Senna's race engineer in 1992 and 1993 and the project leader on the active programme. "So that's what we did."

McLaren had already been testing active technology for a couple of years. Honda was leading development of the system that built on its experience with Lotus and the active 99T of 1987, a two-time race winner in Senna's hands. It ran on a pair of different test cars over that period. But that avenue of development was removed with Honda's departure, which meant that McLaren and the TAG Electronics Systems sister company had to start from scratch.



Senna beat Hill at Monaco – and to second in table

“Honda based its system on something akin to the Lotus’s, which was fairly complex, and progress was painfully slow,” says Oatley. “What we’d learned there was really no benefit for what we had to do for 1993. The whole thing was conceived, designed and tested in the period from October up to the first run of the car at Silverstone.”

McLaren sketched out its active strategy after another test with a MP4/7-based mule using the Honda system at Monza early in September. Ascanelli was asked by Dennis to head up co-ordination of the programme right at the end of the month. “I remember the date because there’s an Italian song called *29 Settembre*,” he says.

A key lieutenant of Ascanelli’s on the active development was a young Pat Fry. He’d joined McLaren earlier in 1992 as a test and development engineer, but shifted over to the active programme at Ascanelli’s request. They’d worked together at Benetton and, as Oatley says, the future Ferrari, McLaren and Renault big shot and now Williams chief technical officer was “very well suited” to his new role. An electronics engineer by qualification, he’d started his career working on navigation systems for missiles. “Pat was a clever kid and a fundamental element in the programme,” says Ascanelli. “Him joining was one of the conditions of me taking responsibility to head up the active programme.”

The tight timescale involved at least partially explains why Ascanelli and Oatley opted for what the former calls “a more simple approach” to the furrow ploughed by Honda. “We accepted a lower effectiveness in terms of damping,” explains Ascanelli. “We wanted to provide a stable platform for the aerodynamics, which at that time were very sensitive.”

“We found ourselves with a very short time to define the system and the code to give us the performance. But Ron was fantastic, always so good at giving us the tools we needed. TAG was a fantastic partner. They sometimes claim paternity of the software, but it was generated completely inside McLaren, myself writing the principal code and three good kids putting it into something the ECU could eat.”

TAG, which had been set up at the start of the 1990s, was

responsible for the ECU. It produced a fully integrated system for the engine and chassis controls, two-way telemetry and its own traction control for the Cossie.

The first driver to sample the MP4/8 was CART Indycar star Michael Andretti, who was following the path across the Pond trodden by his father, Mario, nearly 25 years before. He and Mika Hakkinen, who’d been brought in as test driver and reserve after a protracted legal battle with previous employer Lotus, put in the initial test work, all of it undertaken at Silverstone. Oatley had known from the beginning of the development programme that the car would never be ready for a normal schedule of testing in the warmer climes of continental Europe in the early months of the year.

Of three-time F1 world champion Senna there was no sign. The Brazilian disappearing for the winter and leaving the testing donkey work to his team-mates was nothing new. But he’d gone into the off-season proclaiming that he’d made no decisions on his future. He wasn’t happy after McLaren’s loss of its deal with

*“We started work on that car really not knowing if it would have a V12, a V10 or a V8”*

Honda, a manufacturer with which he’d enjoyed a close relationship, nor enamoured with the prospect of racing a car with the same engine as Minardi. “He was worried that with the Ford engine we were going to struggle,” says Oatley.

It might or might not be true that he offered to drive for Williams for free. But it was never going to be possible contractually. Prost, it is said, had a clause in his Williams contract stating that if the team signed his bitter rival he could walk away. Oatley insists that Senna had a contract that meant if he was racing in F1 in 1993 it would be for McLaren: “He couldn’t go anywhere else.” >>



Brazilian GP win gave Senna the early points lead



CART star Andretti had a tough rookie season...



...while Hakkinen outqualified Senna at Estoril on team debut



Senna kept McLaren guessing early in 1993 and moved to Williams in 1994

SUTTON



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But Senna could have taken a sabbatical *a la* Prost or headed Stateside like Mansell. He would test a CART Indycar for Penske at the Firebird Raceway in Arizona just before Christmas 1992.

A season in CART with Penske was probably unrealistic, too: the team already had its drivers by the time of his test. But Senna was going to make no decision about racing McLaren's 1993 F1 offering until he'd tested it.

Longtime McLaren man and then chief mechanic Dave Ryan remembers picking Senna up ahead of his maiden run in the MP4/8, and he didn't get a good vibe. "Ayrton was sitting on the fence, and this was a time when he wasn't getting on with Ron,"

*"The Ford didn't have the top-end power of the Honda, but it was a much more free-flowing engine"*

remembers the New Zealander. "I got the feeling that he might not be driving for us that year; he really wanted to see what the car was like before committing."

The MP4/8 had already shown promise in the small amount of testing it had done so far. Hakkinen had got within half a second of Michael Schumacher's best in the new Benetton on the Silverstone south circuit. But McLaren didn't know where it was in the pecking order. As Oatley says, the Finn was "an unknown benchmark".

Benetton and Williams had been among the teams testing at Silverstone prior to Senna's arrival. Prost and new Williams signing Damon Hill were a good couple of seconds quicker than McLaren's best from Hakkinen. When Senna turned up, he didn't just beat their times in the MP4/8, he obliterated them.

His first run was just to feel the car. "We put in 100 litres of fuel and he drove for maybe 20 minutes: the times were coming down, the progression was good," says Ascanelli. "Then he came into the pits, no call on the radio. He didn't say a word, just indicated that we should go into the office in the truck."

What Ascanelli remembers as a two-hour debrief followed. Then it was back on track for a proper run. The times tumbled and Ascanelli believes Senna set the fastest time for a V8-powered car around Silverstone that winter. The following day he put in a series of hot laps as lunchtime approached. He got down to a 1m20.3s, which compared with the 1m21.0s set by Hill the day before that stood as the previous best of the winter.

"I was driven back home and had a bite to eat and a chat with my wife, then I crashed in bed," remembers Ascanelli. "Then 10 or 10.30 my wife woke me up, and said, 'It's Ayrton for you'. His words were, 'The car is good, you will have to put up with me for another year'."

Senna most definitely liked the MP4/8. He felt he could do something with it.

"Ayrton was surprised at the driveability of the car," says Oatley. "The Ford didn't have the top-end power of the Honda, but it was a much more free-flowing engine. He could 'drive' the V8-powered car so much more because the engine wasn't influencing the chassis behaviour so much."

There was still the little matter of a deal to be done; Senna had told Ascanelli to keep his decision a secret because he "had a few things to sort out with Ron". It is recounted in Maurice Hamilton's book *Ayrton Senna* that a contract was faxed from McLaren HQ in Woking to Silverstone.

The deal Senna signed was of a suck-it-and-see nature, a race-by-race arrangement for a reputed \$1 million a time. It wouldn't be until the French Grand Prix in July that he put pen to paper to contest the remainder of the season.

It has been suggested that the idea of a million-a-race deal was put about by McLaren in an attempt to screw more money out of its sponsors. It had lost its supply of free engines and was not only paying for the Fords but spending money developing them. Then there were Senna's salary demands...

Hamilton, however, makes it clear in his 2014 work that Senna really was driving race by race through the first half of the season. He quotes McLaren's lawyer, Tim Murnane, recalling late nights in the office with Dennis as Senna played a game of brinkmanship to



Senna was involved in several incidents in 1993, including this early drama at Monza

leverage his position. And it is true that McLaren's number one flew in overnight from Brazil to Italy for the San Marino GP at Imola in April. Whether he turned up five minutes after opening free practice had started or 10 minutes before – stories vary and Oatley thinks they've all been embellished – is irrelevant.

Record testing pace or no around Silverstone, McLaren still felt it was heading into the unknown as the team boarded the plane to Johannesburg. "With the car only just finished and only testing at Silverstone, and mostly by ourselves, we really didn't have a benchmark," explains Oatley. "Silverstone is a circuit that can vary a lot from day to day depending on the atmospheric conditions and the wind."

Senna qualified less than a tenth behind Prost for the South African GP, led the race for the first 23 laps and finished second to his great rival, albeit more than a minute behind. A sensor in the active system had failed, leaving the right rear corner at full droop from halfway through the race. But Kyalami undoubtedly showed that McLaren's new F1 design was very much in the mix.

"We faded a bit, but we still had a favourable result," says Oatley. "We qualified well and had been right with Williams and Benetton in the race."

No one could have predicted what was to come, however. There were five wins, three of them in the wet and *that* first lap at Donington Park in the European GP in April. Senna excelled in his ultra-driveable mount on a slippery surface. But by the end of the season the MP4/8, now with the latest-spec Cosworths, power braking and improved active suspension incorporating roll control, was a match for the all-conquering Williams FW15C.

Ascanelli reckons Senna could have won in Hungary but for the potentiometer failure that put him out after 18 laps, and would still have won at Suzuka had the race been dry. Then at Adelaide came the first non-Williams pole of the year, as well as another victory – in the dry. That pole was set, of course, by Ayrton Senna in the McLaren-Ford MP4/8, the car he'd been so reluctant to drive. It was perhaps a fitting way for the McLaren-Senna partnership, which had yielded three drivers' titles and 35 wins, to end. ✎



Signing off with win in Adelaide that showed MP4/8's dry pace



## A NEW F1 POWER ON THE RISE

*In 1993 the Benetton squad was still gelling, still identifying what it takes to win and challenge consistently. As the more established teams were to find out, it was a fast learner*

DAMIEN SMITH

PHOTOGRAPHY  motorsport  
IMAGES

**N**early – but not quite. That sums up Benetton in the early 1990s. The close-knit team based in a patchwork of industrial units in Witney was established as Ford's factory-powered squad and through Flavio Briatore's marketing hustle from 1989 boasted a decent budget, with limited but consistent support from the Italian 'woolly jumper company' that owned it. Yet it always seemed to be a pretender tapping on the glass ceiling of success, with only the odd crack to show for its efforts. Despite the potential sum of its considerable parts, would Benetton ever crash through and beat the established McLaren/Williams hegemony?

The game-changer was supposed to be John Barnard. But the revered designer behind McLaren's mid-1980s glory and the near-miss Ferrari revival of 1989/90 had blown through Benetton in a fury in little more than 18 months. What a disappointment. Yet the short, explosive Barnard era did shake the team from comfortable complacency and triggered a chain of events that led directly to the team's mid-1990s golden era.

Thirteen engineers, including designer Rory Byrne and

engineering chief Pat Symonds, had walked out in protest at Barnard's 'my way or the highway' approach. By the end of 1991, Byrne and Symonds were back – and quickly gelled with a new senior recruit ushered in by Briatore's canny alliance with Tom Walkinshaw. Fresh from designing TWR's stunning Ford HB V8-powered Jaguar XJR-14, Ross Brawn was hungry for the F1 success that had (inevitably) eluded him in his three-year spell at underfunded Arrows.

Then there was the other spice added to the mix: Michael Schumacher. Poached in a storm of controversy from under the nose of Eddie Jordan after the 1991 Belgian Grand Prix, the German was living up to the hype. He'd won his 18th GP through intelligence and intuition matched to his obvious speed in mixed conditions on his return to Spa, and in 1993 appeared ready to take the next step. The same was true of Benetton following a winter move to a brand-new, gleaming white factory built on an old quarry in remote countryside near Enstone.

Yet on paper, 1993 turned out to be the same old story. As Williams hit its zenith with the active-ride marvel that was

## BENETTON B193

Engine	Ford HB 75-degree naturally aspirated V8
Power	700-730bhp @ 13,200rpm
Fuel	Elf
Weight	505kg
Wins	1
Points	72 (3rd)



B193 was “pretty damn good”, according to Pat Symonds. And Schuey delivered on the hype



Briatore brought deal-making smarts

the FW15C, Benetton found itself beaten once again into third by McLaren. Only by eight points, but McLaren's gilt-edged partnership with Honda was by now over and it had been reduced to the status of a Ford Cosworth customer. Yes, a fired-up Ayrton Senna was always going to be a factor. But still, it was... awkward.

Underwhelming too, especially with hindsight on how good Schumacher would turn out to be. When the then-24-year-old finished he was nearly always on the podium, notching up three thirds and five seconds – but just a solitary win, at Estoril. The report from Portugal makes for familiar reading as his weekend built to a crescendo after the odd stutter: a spin on Friday morning, only fifth in the afternoon; a spin and crash on Saturday morning, just sixth in afternoon qualifying. Then on race day, after switching to the spare car, he ran fifth from the start, pitted early for fresh tyres on lap 21 and found himself leading after the Williams duo of Alain Prost and Damon Hill made their stops. He ran to the finish, fending off Prost to calmly score his second GP victory. But shouldn't there have been more days like this?

Symonds stands by the B193, and argues the results don't offer

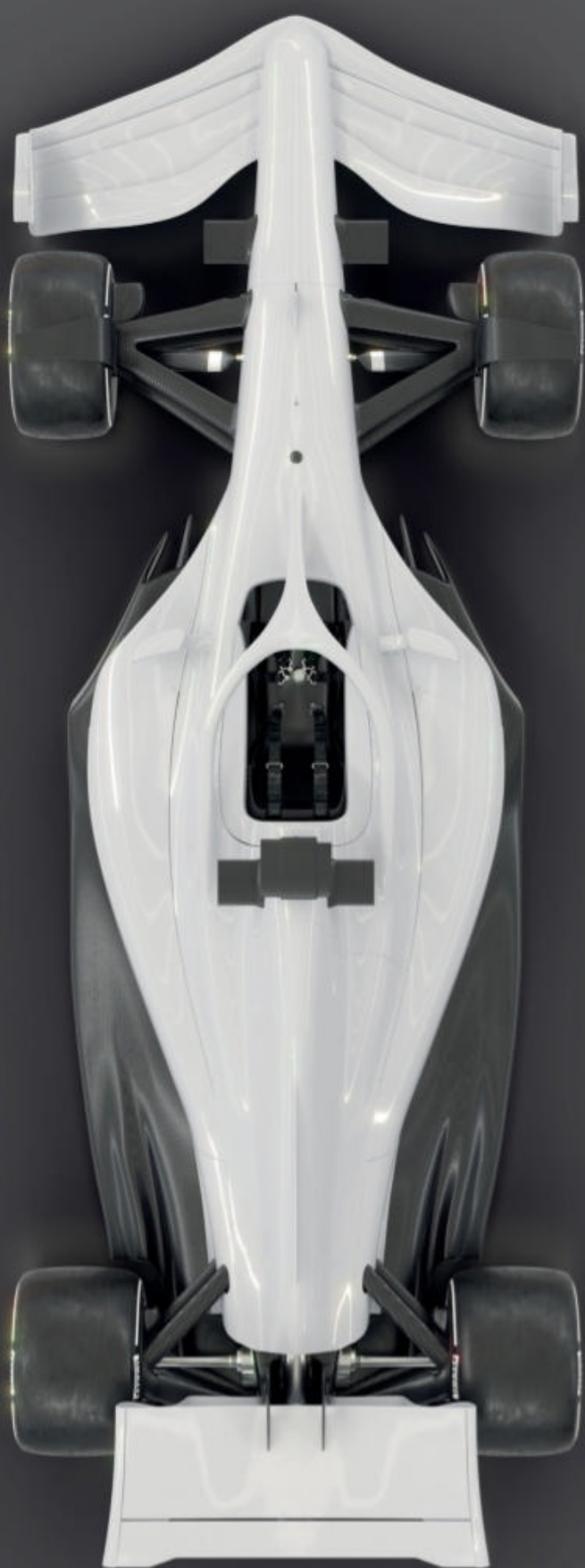
a fair summary in what was the final year of active-ride before so-called 'driver aids' such as traction control were banned for a return to 'passive' F1. “Our car was pretty damn good,” he says. “I'd say it was second best, better than the McLaren. It did everything we asked of it. But we were learning. Williams had more experience on how these electronic systems worked and this was very early days of integrating electronics into electro-mechanical engineering. It was the early days of hydraulics, how they work and the pitfalls you can fall into. But the car was good.”

Symonds had been working on active ride since the late 1980s, but it was only in 1993 that the team felt prepared to race its system, along with its first paddleshift gearbox. In the wake of so much upheaval, perhaps that's understandable.

Alan Permane was on the test team in 1993. The ex-sporting director of the team's modern guise as Alpine offers some insight into how these were pioneering times – and why they had to be reined in. “I was on Schumacher's car,” he says. “Part of my role was programming the active car and part of it was looking after the ever-growing data logging that had only appeared in around »



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Beating both Williams  
drivers for sole 1993  
victory in Portugal



1991. There was nothing when I started, at least on the chassis side. But now it was just exploding, even if it was still tip-of-the-iceberg stuff. By the end of 1993 we had a car with four-wheel steer and they were thinking about active camber. Honestly, it was a good thing it was stopped for F1 because where was it going to end? The whole car would have moved [independently]. It was developing at a hell of a rate."

Seasoned engineer and designer Frank Dernie joined Benetton late in 1992, direct from a declining Team Lotus and after years learning how to win world championships at Williams. He pinpoints some of the key weaknesses that help explain why Benetton was still falling short, including a contradiction at the heart of its works Ford status. "The B193 was fairly quick but it wasn't reliable enough and we had a lot to do on it," he says.

"This is sort of controversial and the irony always makes me smile. Because we had the works engine, Ford paid for it and Cosworth ran it. Because McLaren had to buy their engines, they were customer engines and so they ran them. Now, Cosworth had told Ford that any sort of traction control involving ignition timing was risky in the reliability of the engine, so Benetton wasn't allowed such a system. The Cosworth traction control system involved an actuator that actually physically closed the throttle barrels, it wasn't electronic. It was slow and never worked very well. Whereas McLaren, because they effectively owned their engines, used their own TAG electronics systems and they had a very sophisticated traction control system using retardation and spark cut, which worked really well.

"They were always telling everybody we had the better engine but they actually had a more raceable engine. Rory Byrne used to refer to Cosworth as the Northampton Conservative Party – they were very conservative and no risks were taken with the engine."

Symonds concurs. "The way the Renault and everyone else was doing traction control was by cutting sparks: the wheels start to



Symonds and Schumacher  
forged strong partnership

*“McLaren always told everybody we had the better engine but they actually had a more raceable engine”*

spin, you cut the sparks and instantly you lose power,” he says. “Cosworth were adamant you couldn’t do that because you’d break the engine and they wouldn’t let us do it, so ours worked on a bit of ignition timing, a bit of throttle control. It wasn’t very good at all. McLaren had customer engines, so if Cosworth said ‘don’t do it’ they ignored them. They also had a very good electronics division, so they had massively better traction control than we did. Things like that were very frustrating.”

A political row between Benetton and McLaren, fuelled inevitably by Senna, coloured the season’s early months as the customer called for Cosworth parity on engines. “Niggle”, as Symonds describes it, had festered since 1984 when McLaren blocked Michelin from supplying the best of its tyres to what was then Toleman. Now the boot was on the other foot. But as Symonds argues, engine parity was something of a red herring when McLaren had superior electronics – and the freedom to use them.

“At the start of the year, as we were the works team we would have the latest engine and McLaren would get them after us,” he recalls. “Before long they were getting the same engines as us, which in itself I didn’t really mind. But it raised questions of supply: were you getting good engines or were they rushing to build new engines because they’d upgraded and now needed to build them for ourselves and McLaren? I do remember Tom Walkinshaw saying that McLaren would only ever get the same engines as us over his dead body – but he didn’t die when they did get them.”

Beyond engines and electronics, Dernie also argues that >>

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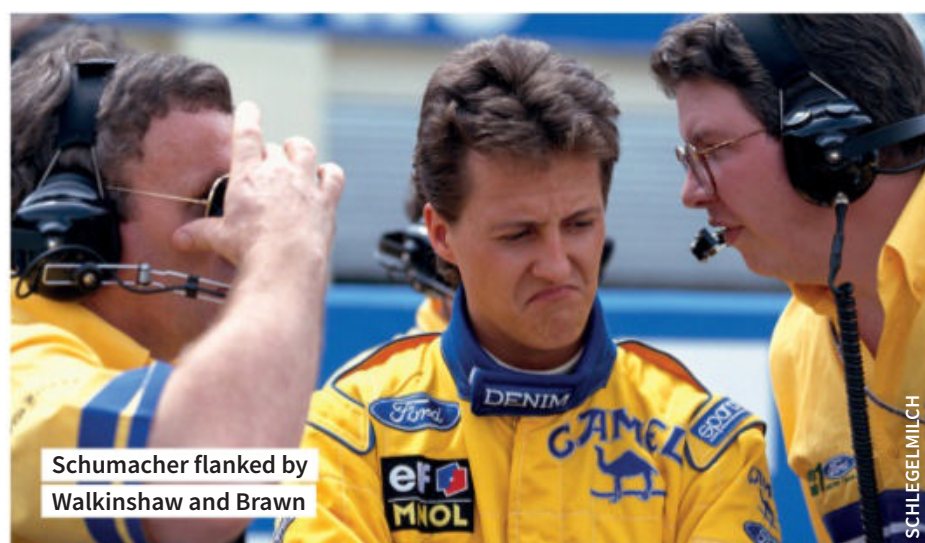
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Ford customer McLaren  
had its own, much more  
trick, traction control



Schumacher flanked by  
Walkinshaw and Brawn



Test driver McNish  
saw the team evolve

Benetton was simply not yet fully cooked as a top-line team. “I likened winning the world championship to climbing a mountain,” he explains. “The first part is practically a vertical cliff, called having a fast car. The cliff varies from winter to winter in terms of snow and the weather – which is the rule changes – and once you have found a route, it isn’t always the best one because something changes. It’s such a difficult climb that almost nobody has been to the top of the cliff, and nearly everybody in motor racing thinks if they have got to the top they’ve made it.”

“Benetton was like that when I joined. But when you get to the top of the cliff you can then see the series of peaks you’ve still got to climb, which represent finishing all the races, not screwing up pitstops – so many things you’ve also got to be able to do on top of having a fast car. And I think what I could offer was that: the fact that having a fast car wasn’t enough, we needed to finish the races, make the car driveable. And the things we didn’t do well we started doing well. I didn’t really contribute much to the potential of the car because that was Rory, but I think I contributed a lot to getting most of that potential out of it at the race track, which is what I sort of specialise in. It’s amazing how many cars go racing without being near their optimum settings.”

Recruited by Brawn, who had worked under him during his Williams ‘apprenticeship’, Dernie adds: “My contribution was sort of old-fashioned. They don’t need it today. I made sure the car finished the race. It doesn’t matter how fast it is if you don’t finish. Benetton had concentrated far too much until my arrival on doing a fast lap at a test.”

But even if the team wasn’t yet firing as it needed to, the blend was beginning to mature. Beyond the race team, a lucrative new sponsorship deal was pushed over the line with Japanese tobacco brand Mild Seven to replace Camel, which was heading for the F1 exit at season’s end. And the team responded quickly to the electronics ban for 1994. Symonds says focus on the B194, in which Schumacher would lead the team to both glory and

*“They were eager, aggressive, and there was a sense of purpose about them. A different style of energy”*

infamy the following year, began as early as June. The only system that continued to be developed was the four-wheel steer – and that was only wheeled out for use at the final race of the season.

Test driver Allan McNish recalls completing 43 days developing the electronics – imagine that today! – and witnessed the evolution of a new superpower. “You had Rory, Ross and Pat effectively as the engineering brains behind it all,” says the Scot, then 23. “They were all pushing massively. Everybody had that positive energy, a young team that maybe wasn’t as established in F1 as some of the competition, but they wanted a first taste of the champagne. They were eager, aggressive, and there was a sense of purpose about them. Even if they didn’t have the total assets of the others, they had a different style of energy that carried them through. And ultimately they had Michael, who wasn’t slow to deliver.”

“We were still quite a young team and we weren’t knitted together completely,” admits Symonds. “The one thing people

often underestimate in a team is continuity. Williams and McLaren were pretty established teams and knew how to win, but we were still learning. By 1994 and 1995 we knew too.”



#### **Benetton: Rebels of Formula 1**

By Damien Smith

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Patrese binned it on his penultimate Formula 1 appearance at Suzuka

SUTTON

## WHY PATRESE CRASHED OUT OF F1

At the risk of stating the bleedin' obvious, Riccardo Patrese really should have stayed at Williams in 1993. In the knowledge that Alain Prost was on his way, he'd signed for Benetton. But then Nigel Mansell flounced off to Indycar (see page 42). Patrese couldn't have predicted that and could have partnered Prost – but to his credit kept to his word and new contract.

By the following April he was already facing rumours of the axe after a poor start to the season. It hardly helped Flavio Briatore's hair-trigger patience that any comparison was being made to a young and hungry Michael Schumacher.

In a season of few highlights, Patrese managed a third at Silverstone, sharing the podium with Prost and Schumacher, and a second in Hungary. But the Monday after the Budapest race he was released from his contract. Patrese saw out his 17th and final F1 season to log a then-record 256 grand prix starts. But it was a sad ending to a fine career, encapsulated by his collision with Derek Warwick's Footwork at Estoril.

Today, Patrese is phlegmatic. "It didn't work mainly because I think they underestimated the potential of Michael," he states. "Michael was a little bit quicker, but he was younger and really determined. So Mr Briatore started to say



SUTTON

that I had to go for my pension because I was old and anybody he could put in the car would perform better than I did! In effect the next year they changed three drivers to replace me [JJ Lehto, Jos Verstappen and Johnny Herbert]. Now we know Michael was outstanding."

Patrese had been recruited largely for his experience with active ride, even if the Williams system was entirely different to

Benetton's. "I did the job that they asked me to do, to try to put everything together, because there was the active [suspension], the automatic gearbox, a lot of new things," he argues. "OK, maybe the performance was not... you know, it was my 17th season in F1! But don't forget Schumacher finished fourth in the championship and I finished fifth, so it's not that I was nowhere."

Pat Symonds retains a lot of affection for Patrese. "He's a nice guy, a lovely bloke to work with," he recalls. "He struggled at the beginning because the 1992 car we started the season with had a gear lever and he couldn't handle it. He'd had the luxury of being in a Williams with paddleshift. That was difficult for him."

"But the main thing was he was just totally fazed by Michael. At Silverstone we'd had a problem in qualifying and you could use spare cars then. Michael's car was not going to run, so we decided Patrese would do his laps, then Michael would get in his car and finish qualifying. Patrese set a reasonable lap, Michael got in the car set up for Patrese and went significantly quicker. Patrese just said, 'I can't do that.'"

So, is it fair to say that Schumacher finished Patrese's F1 career? "He really did, didn't he?"



COLOMBO

# ANOTHER TROUBLED NEW START AT FERRARI

*A transitional year with a lacklustre car brought little in the way of glory for the famous Italian team, although the experience contributed to establishing the path to later glory*

JAKE BOXALL-LEGGE

PHOTOGRAPHY  motorsport  
IMAGES

**F**ortunes wax and wane in Formula 1, and it has been forever thus. In the early 1990s, the teams that the late Enzo Ferrari had so uncharitably labelled as “garagistes” were ruling the roost, while the squad bearing his own name had suffered a short and sharp decline at the turn of the decade.

After contending for titles in 1990 with a John Barnard-designed car and Alain Prost behind the wheel, both of those constituent elements had departed the team over 1991. Barnard left for Benetton, while Prost was released following his increasingly antagonistic relationship with Ferrari’s management, unhappy with the 643 chassis introduced during the season.

Ferrari’s 1992 offering, the double-floor F92A penned by Jean-Claude Migeot, was a disaster. The Frenchman had been signed after his work developing the successful Tyrrell 019 and, although his team could do little about the engine giving up power through blow-by, straightline performance was hampered further by the aerodynamics. The engineers had failed to tune in floor stall at certain speeds, so the car was running around with excess drag on the straights because the downforce could not be shed. Harvey Postlethwaite rejoined the team and hoped that rebuilding the rear end around a transverse gearbox would help, but to no avail.

With just 21 points scored that year, Ferrari president Luca di Montezemolo chose to ring the changes for 1993. Migeot was let go

at the start of the year, albeit with the F93A already in production at that stage. According to Migeot, the car he left was based upon the F92A chassis, and Ferrari had struggled up to that point to find the active suspension advances that the other frontrunners had achieved. Postlethwaite remained for the first half of the year, but had already felt put upon by the political undercurrent present at Maranello as Montezemolo continued to wield the hatchet.

On the driving front, Jean Alesi offered much-needed continuity in his third season with the team, while Gerhard Berger rejoined for 1993 after two years away with McLaren. Regardless, it was already set up to be a transitional year, particularly as key personnel changes that laid the foundations for subsequent successes did not happen until later in the season: Jean Todt was not due to join up until mid-way through the campaign and, while Ferrari had managed to recapture the services of Barnard, the Briton was largely focused on 1994. As Alesi lays out, the lack of technical clarity hurt the 1993 car’s development considerably.

“1993 of course was a new season, but a kind of an intermediate season anyway,” Alesi reflects. “Jean Todt came to the team in the middle of the season; as I once said in an interview, in five years, I had four team principals, so you can imagine the mess at the time.

“I knew we were facing a difficult season because it was not 100% clear who was designing the car, and who was really leading the project. [Migeot] left and I understood that was not a good >>

FERRARI F93A

Engine	Ferrari 041 65-degree naturally aspirated V12
Power	745bhp @ 15,000rpm
Fuel	Agip
Weight	505kg
Wins	0
Points	28 (4th)



F93A's white stripe led to uncharitable comparisons to the previous season's Scuderia Italia Dallara



Alesi provided much-needed continuity



Todd arrived mid-season; Barnard remained UK-based

idea and basically, we faced a bad season straight away.”

The double-floor design from 1992 had been discarded, with a more conventional sidepod arrangement installed in the F93A, but the team felt that it also had to delve into the world of active suspension to be competitive against the Williams and McLaren cars of the time. Ferrari had experimented with it in 1992, with Nicola Larini effectively running as a test mule in the last two races of the season after Ivan Capelli had been ousted, and a revised version was baked into the F93A's design.

Berger scored a point first time out at Kyalami, but Alesi suffered the first of multiple issues with his active ride system and retired. The team managed just one finish over the next three races as more suspension problems and gearbox issues reared their heads, although Berger managed another point at Barcelona, where Alesi retired with an oil leak.

The F93A did, however, manage three podium finishes throughout the year. The first was Alesi's run to third place at Monaco, a drive he suggested was “much more coming from the feeling I had” after he had encountered a balanced car that weekend. There, he enjoyed a vintage drive from fifth on the grid, albeit helped by Prost's jumped-start penalty.

Next time out at Montreal, he suffered from an engine failure, despite Ferrari's continuing development of its new V12 for the season. The work on the engine helped reliability towards the end of the season, as the valves and camshafts were perfected within the sprawling 3.5-litre powerplant, and its growing power helped Alesi bag second in an attritional Italian Grand Prix at Monza.



Ferrari managed three podiums, including Berger in Hungary

## “Alesi recalled the car moving up and down of its own volition when the engine was fired up”

Although sometimes problematic, the engine was much more powerful than 1992's effort; instead, the F93A's key bugbear continued to remain its inconsistent active suspension package. Alesi, certainly no advocate for the driver aids revolution, found the micromanagement of drivers' inputs far too excessive.

“At the beginning, everything was permitted,” he explains. “At this time, a clever engineer should reduce the system as much as possible, and not try to use it everywhere. It was, in our case on the straight, we were pulling up the nose to have less drag and to go faster on the straight, and then going down in the corner, going up at the exit. It was too much operation during one lap. After the first laps we were doing with the engineer, we were deciding the ride height of the car metre by metre and, when we were crossing the finish line, to reset lap after lap.”

During test sessions, the active suspension sometimes seemed to have a mind of its own; Alesi recalled a time when the car apparently moved up and down of its own volition when the engine was fired up.

Later in the season at the Portuguese GP, Berger suffered a hefty crash as he left the pitlane and immediately careened into the wall on the opposite side of the track. He narrowly missed Derek Warwick's Footwork, and then-BBC commentator Jonathan Palmer laid the blame at Berger's door for apparently being too leaden-footed on the accelerator. This was later revealed to be a problem with the Ferrari's active ride failing to reset properly.

Alesi takes up the story. “I don't know if you remember the big accident of Gerhard in Estoril, but that was caused by the system,” he recounts. “He came in for the pitstop, he had the nose up and the rear of the car down. And we had zero reset because it didn't cross the finish line. When they changed the tyres and then when he left the box, it was basically on the floor and there was a big bump at the exit of the pitlane. The car struck the ground and he lost the rear.”

“I didn't like [the active suspension] – it killed the feeling, 100%,” Alesi adds. “So if the car was efficient, of course it's useful, but my way to drive was very old style. The weight transfer made by the driver was very important to make the corner in a V, and it affected the car a lot. But because you have the active suspension, you just have to wait for the program to do basically what you were doing at the time without it. I had a very good race in Estoril, and it's because I took out the system and I had the normal suspension!”

In the background, Todd was beginning to exert his influence. Postlethwaite did not hang around and returned to Tyrrell. Barnard had been tempted back to Ferrari for the start of 1993, with the plan to work with Postlethwaite at Maranello on debugging the F93A. But Barnard, having refused to move to Italy in his first stint with



Alesi – sans active suspension – leads at the start in Portugal

the team and instead allowed to set up a UK-based technical department in Godalming, wanted the same terms. His influence on the 1993 car was limited because his focus was on getting the 1994 car together, so his main remit was to assist with the development of the active suspension. This was at Ferrari's behest despite it being banned for 1994, and Barnard disliked having to do it – not least because Ferrari's system had already been conceived as early as 1989 during his first stint at the team. To his mind, interference from upper management resulted in it being canned in the first place, and now they wanted it on the car.

The compromise in working from the UK was that Barnard had to accommodate technical figures from Maranello, but Alesi felt that the working relationship was too one-sided in the Briton's favour. He dismissed Barnard's efforts on the active ride element as "not so good", and admits that he has few good memories about working with him.

"When he came [back to Ferrari], I was very impressed because of his name and what he has done in the past," says Alesi. "But the way he was working was not really good, because he was in England. He was not with us all the time, so it was difficult to work, you know? I don't have a very good memory about John's time in Ferrari. And when Michael [Schumacher] arrived, the first thing

they did was they fired him. And we know what happened next..."

Even if Barnard was effectively a recluse amid the engineering structure, the cars he developed for the team were at least race winners. The driver-aids ban ultimately helped Ferrari because it had consistently missed the mark throughout the electronics revolution, and the neatly penned 412 T1 developed for 1994 proved to be a far more competitive prospect. Multiple signings from Honda's aborted F1 project, including director Osamu Goto, ensured that engine development was bolstered by those with recent title success, helping the team overcome its early 1990s slump.

It's a forgettable car, the F93A; the white stripe around the engine cover made the car reminiscent of the previous year's Scuderia Italia Dallara, and pithy commentators would argue that it performed similarly. But it's also an important car in Ferrari's history, since the performance shortcomings that became quickly apparent had enfranchised Montezemolo to make the changes he felt were necessary to take Ferrari out of the doldrums.

The course that Montezemolo and Todt charted for Ferrari in the following years was enough to convince Benetton's title-winning trifecta of Michael Schumacher, Ross Brawn and Rory Byrne to enlist, setting up the period of unprecedented dominance that defined the early 2000s. *W*

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# ALL THE NUMBERS

The key data from the 1993 Formula 1 season

KEVIN TURNER

PHOTOGRAPHY  motorsport IMAGES

1993 F1 RACES		
ROUND RACE (TRACK)	POLE	WINNER
1 South African GP (Kyalami)	Alain Prost (Williams FW15C)	Alain Prost (Williams FW15C)
2 Brazilian GP (Interlagos)	Alain Prost (Williams FW15C)	Ayrton Senna (McLaren MP4/8)
3 European GP (Donington Park)	Alain Prost (Williams FW15C)	Ayrton Senna (McLaren MP4/8)
4 San Marino GP (Imola)	Alain Prost (Williams FW15C)	Alain Prost (Williams FW15C)
5 Spanish GP (Barcelona)	Alain Prost (Williams FW15C)	Alain Prost (Williams FW15C)
6 Monaco GP (Monte Carlo)	Alain Prost (Williams FW15C)	Ayrton Senna (McLaren MP4/8)
7 Canadian GP (Montreal)	Alain Prost (Williams FW15C)	Alain Prost (Williams FW15C)
8 French GP (Magny-Cours)	Damon Hill (Williams FW15C)	Alain Prost (Williams FW15C)
9 British GP (Silverstone)	Alain Prost (Williams FW15C)	Alain Prost (Williams FW15C)
10 German GP (Hockenheim)	Alain Prost (Williams FW15C)	Alain Prost (Williams FW15C)
11 Hungarian GP (Hungaroring)	Alain Prost (Williams FW15C)	Damon Hill (Williams FW15C)
12 Belgian GP (Spa)	Alain Prost (Williams FW15C)	Damon Hill (Williams FW15C)
13 Italian GP (Monza)	Alain Prost (Williams FW15C)	Damon Hill (Williams FW15C)
14 Portuguese GP (Estoril)	Damon Hill (Williams FW15C)	Michael Schumacher (Benetton B193B)
15 Japanese GP (Suzuka)	Alain Prost (Williams FW15C)	Ayrton Senna (McLaren MP4/8)
16 Australian GP (Adelaide)	Ayrton Senna (McLaren MP4/8)	Ayrton Senna (McLaren MP4/8)



WINS	
Alain Prost	7
Ayrton Senna	5
Damon Hill	3
Michael Schumacher	1

POLES	
Alain Prost	13
Damon Hill	2
Ayrton Senna	1

FASTEST LAPS	
Alain Prost	6
Michael Schumacher	5
Damon Hill	4
Ayrton Senna	1

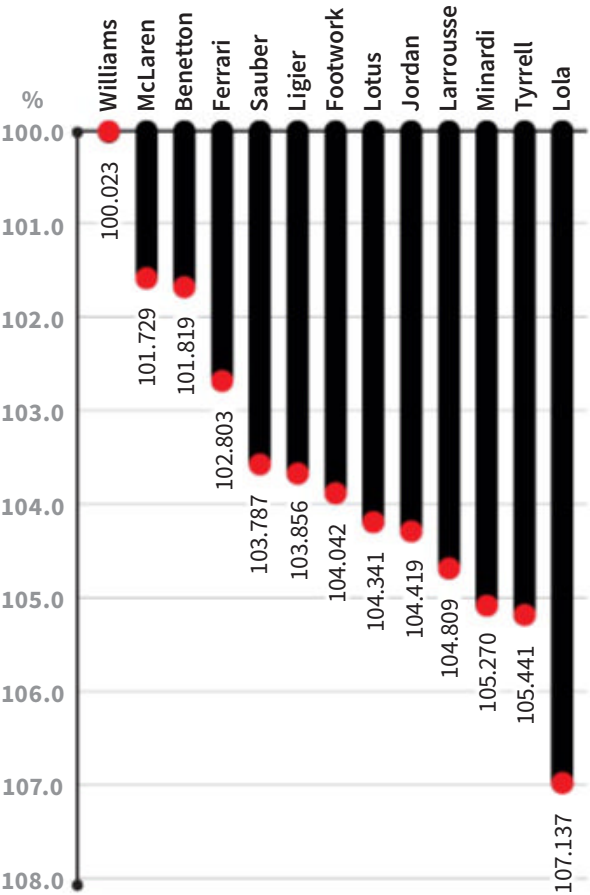
LAPS LED	
Alain Prost	431
Ayrton Senna	290
Damon Hill	242
Michael Schumacher	63
Jean Alesi	19

CHAMPIONSHIP POSITIONS			
DRIVERS'		CONSTRUCTORS'	
1 Alain Prost	99	1 Williams-Renault	168
2 Ayrton Senna	73	2 McLaren-Ford	84
3 Damon Hill	69	3 Benetton-Ford	72
4 Michael Schumacher	52	4 Ferrari	28
5 Riccardo Patrese	20	5 Ligier-Renault	23
6 Jean Alesi	16	6 Lotus-Ford	12
7 Martin Brundle	13	7 Sauber	12
8 Gerhard Berger	12	8 Minardi-Ford	7
9 Johnny Herbert	11	9 Footwork-Mugen-Honda	4
10 Mark Blundell	10	10 Larrousse-Lamborghini	3
11 Michael Andretti	7	11 Jordan-Hart	3
12 Karl Wendlinger	7		
13 JJ Lehto	5		
14 Christian Fittipaldi	5		
15 Mika Hakkinen	4		
16 Derek Warwick	4		
17 Philippe Alliot	2		
18 Rubens Barrichello	2		
19 Fabrizio Barbazza	2		
20 Alex Zanardi	1		
21 Erik Comas	1		
22 Eddie Irvine	1		



## SUPERTIMES

Supertimes are based on the fastest single lap by each car at each race weekend, expressed as a percentage of the fastest single lap overall (100.000%) and averaged over the season. For comparison, after 20 grands prix of the 2023 season, Red Bull is on 100.117, with Ferrari second on 100.388. The slowest team, Alfa Romeo, is currently 1.639% behind Red Bull, less than the gap (1.706%) between Williams and McLaren at the front in 1993...





# MANSELL CONQUERS INDYCAR

*Having quit F1 as champion,  
'Our Nige' rules across the pond*

JAMES ALLEN

**S**trong convictions. Alongside his many gifts as a racing driver, Nigel Mansell was a man who made some dramatic gestures at key moments of his career, based on some firm belief that nothing could shake. One example was his "retirement" on the spot at Silverstone in 1990, because of Ferrari politics, stirred up as he saw it by his then team-mate Alain Prost. That decision was soon rescinded.

However, he stuck with his shock decision to quit Formula 1 as the new 1992 world champion to take up an offer from movie star Paul Newman and Carl Haas to race in Indycar. It was an earthquake in F1; the pre-eminent motorsport series had lost its champion, and Indycar suddenly became a serious threat. Over 100 foreign media turned up at his first test session. The series had never seen anything like it. TV channels in Europe scrambled to buy the rights and new TV shows were created just to cover it.

True to form, Mansell won on his debut at Surfers Paradise, just as he had won on his Ferrari F1 debut in 1989. Then, in classic Mansell fashion, he had the mother-and-father of all accidents in practice on the Phoenix oval. He smashed into the Turn 1 concrete wall backwards at 187mph. It created a 12-inch square cavity in his back, where the muscle and fat had been torn away from the flesh.

But this didn't deter him from racing at Long Beach two weeks later. He took pole position on the bumpy street track and finished the race in third place. Straight after the race, Mansell was



operated on by legendary Indycar doctor Terry Trammell, who fixed the cavity in his back with over 140 stitches. A week later he was doing his first laps of Indianapolis at over 220mph. He came close to winning the 500, losing out to Emerson Fittipaldi, who had superior oval track knowledge. Mansell put that right at the following race, taking his first oval victory at Milwaukee.

From there the season was a blur of events criss-crossing the United States. Mansell won three more oval races, an astonishing performance for a 'rookie'. The win at New Hampshire in August came on Mansell's 40th birthday.

When he won the penultimate round in Nazareth, he clinched the championship. For one incredible week in September 1993, before Prost won the F1 crown in the Williams-Renault berth vacated by Mansell a year earlier, Mansell held the F1 *and* Indycar titles at the same time, the only driver to have ever done that. It took him 12 years to become an F1 world champion and only one to do it in Indycar, proving a strong conviction he had always held.

"I felt a huge weight lift off my shoulders," Mansell told me at the time. "All my life I had been striving to prove to the world that I had the talent to be one of the best drivers. Now I had nothing to prove anymore." ❦

● James Allen was Mansell's biographer and presented Nigel Mansell's INDYCAR show on ITV.

# FROM PILOT TO GT CAPTAIN

*It was a motley bunch of GT cars that assembled at Paul Ricard in 1993.  
But Stephane Ratel regards it as the start of where GT3 is today*

GARY WATKINS

It might be the most important event in Europe that Autosport has failed to cover in its 70-plus years as the bible of motorsport. But no one could have predicted that after a mixed bag of GT cars took to the track at Paul Ricard in August 1993. Not only did the quickly assembled field lack quantity, but it was hardly overflowing with quality. Yet it was the start of something big: its legacy stretches all the way to the present day.

The event ended up acting as a pilot race for what the motorsport world generally refers to as the BPR series. GT racing was reborn with the BPR Organisation's run of non-championship races in 1994 that morphed into the Global Endurance GT Series in 1995. International sportscar racing in Europe, the Le Mans 24 Hours included, was hauled out of the mire. The driving force behind the race was Stephane Ratel, the 'R' of the BPR whose eponymous operation today runs 15 series around the world and organises 50-plus race weekends annually.

"A very important little race," is how Ratel describes the Ricard event. "I don't think the BPR would have started without it. Everything I do today can be traced back to that weekend at Le Castellet."

Ratel, who had taken his first steps in motorsport organising the Venturi Trophy in 1992, pulled together the field at the request of a group of customers to whom he'd sold a small fleet of GT1 contenders built by the French boutique sportscar manufacturer, enabling them to do Le Mans in 1993. Now they wanted to race them again.

"These guys had their Trophy cars, but they enjoyed driving



Porsche and Venturi line up at following year's event

JOHN BROOKS

their 500LMs more," recalls Ratel. "They were asking me, 'What are we going to do with them now?' Then I had a kind of eureka moment walking down the stairs from my office in Paris."

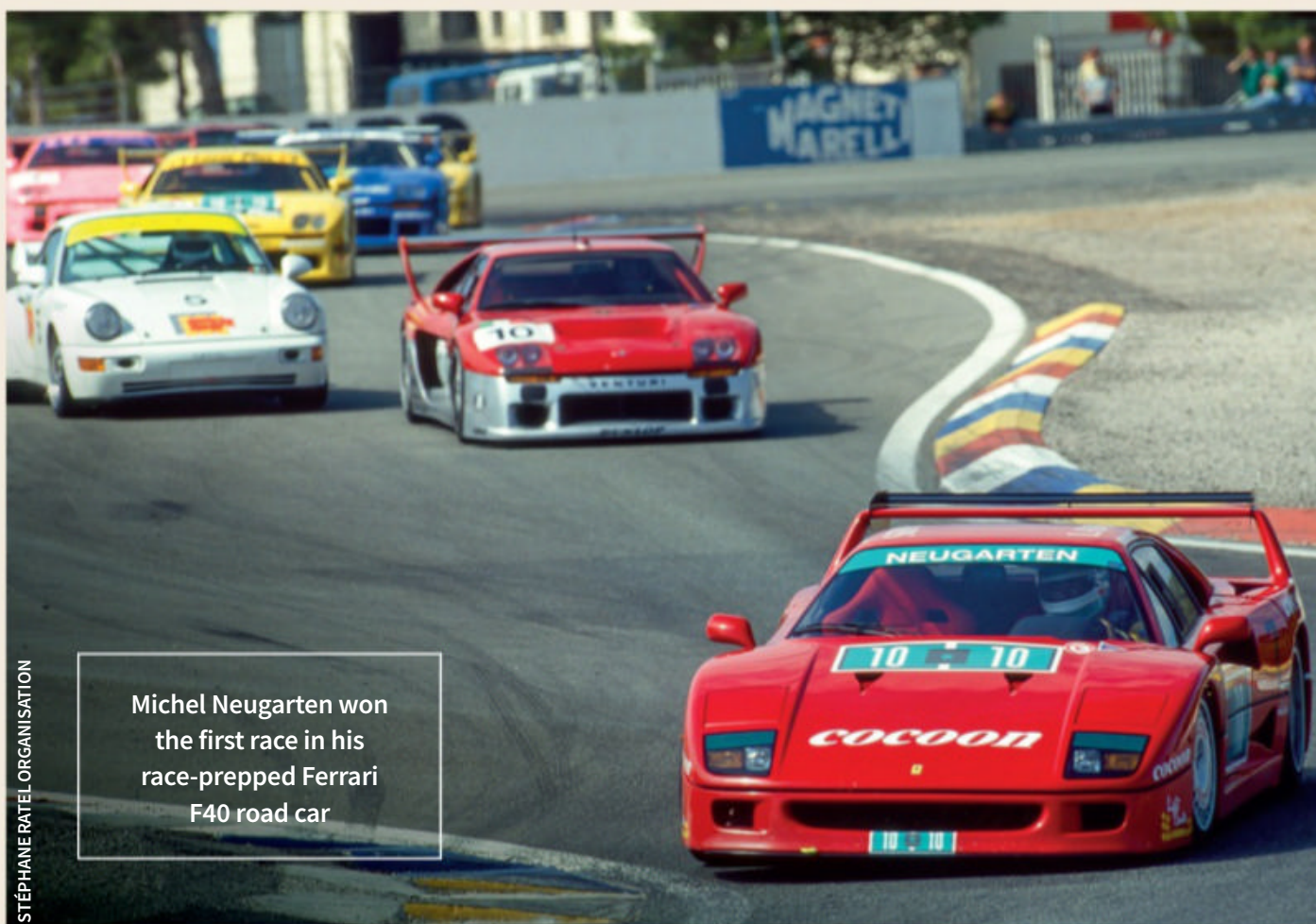
Ratel remembered that a couple of his customers had other GT cars; Michel Neugarten a race-prepped Ferrari F40 road car, and Laurent Lecuyer a new Porsche 911 Carrera RSR. A couple of days later he coincidentally received a call from historic race organiser Patrick Peter. He had revived the Tour de France Auto and now wanted to do the same with modern GT machinery for the Paris 1000Km sportscar fixture at Montlhery near the French capital.

"I told him not only would I be interested, but I was already organising a race," explains Ratel. "He said, 'Right, I'm coming and I should be able to bring some cars.'"

There appears to be no surviving results sheet, but Peter's contribution boosted the grid into double figures. Neugarten won the first race, Lecuyer's RSR the second in the hands of Olivier Haberthur, whose family team ran the car. A gearbox problem for the Ferrari in the second 15-lapper restricted Neugarten to second and allowed Haberthur to claim aggregate victory.

It was, however, the other Haberthur twin, Christian, who had the bigger effect on the future of sportscar racing. He suggested that Ratel ring Jurgen Barth, Porsche's boss of customer racing. The call was made, Barth, Peter and Ratel met, and the BPR was formed.

The adage 'and the rest is history' hardly does justice to what has followed – and continues to follow. ❧



Michel Neugarten won the first race in his race-prepped Ferrari F40 road car

STÉPHANE RATEL ORGANISATION

# WINKELHOCK PUTS THE 'SUPER' INTO TOURING CARS

*The arrival of BMW's crack Schnitzer squad for 1993 brought a new flavour to the BTCC, and opened the international floodgates*

MARCUS SIMMONS

**T**he Super Touring era of the 1990s is revered in many quarters as the peak of the British Touring Car Championship's history, thanks in large part to its international field. But before 1993, it was almost as parochial as it had been in its old Group A days – and that suited series boss Alan Gow just fine. “We were a British championship and we didn’t have any international ambitions,” reflects Gow today. “International recognition gives you a nice warm feeling, but the greater importance for us was recognition in Britain.”

Everyone remembers the dramatic 1992 title decider at Silverstone, and there were six manufacturer works teams represented. But there was only one foreign driver in the 23-strong field (Kris Nissen, standing in for the injured Alain Menu at BMW), and all the cars were run by UK operations.

Then BMW Motorsport fell out with the DTM, put all its touring car eggs into the Super Touring basket in the British, Italian and French championships, and brought its German star Joachim Winkelhock and the famed Schnitzer Motorsport to UK shores for 1993. To the surprise of the parochials, Winkelhock bettered team-mate Steve Soper and the rest to become the BTCC's first foreign champion since Frank Gardner in 1973. Alfa Romeo followed, and won the crown with Gabriele Tarquini in 1994. And for the remainder of the Super Touring era, up to the end of 2000, John Cleland (in 1995) would be the only UK driver to win the title.

Winkelhock – or ‘Smokin’ Jo’ as he was soon nicknamed – and Schnitzer brought an exotic European flavour to the BTCC, just as football's newly formed Premier League was enjoying its own



Schnitzer boss Lamm and Winkelhock confer

influx of foreign players. The crowds loved them. “What it actually did was put a credibility you can’t buy into the championship,” continues Gow. “You had teams and drivers from overseas who wanted to race in the BTCC.”

Schnitzer, far from its Freilassing base on the Bavarian/Austrian border, hired a small workshop near Silverstone as its BTCC base, and its late team boss Charly Lamm became a hugely popular figure in the paddock. “He was such a lovely guy,” recalls Gow. “You’d be hard pressed to find a nicer team manager. Jo spoke hardly any English when he first came, but at that time we had a common liking for cigarettes, so we’d often be out the back somewhere catching a fag together.

“At Knockhill in those days, they’d pull into the pitlane to refuel between the two races. Jo wouldn’t get out of the car and sat there having a fag. We lost our sense of humour over that one, and Charly did too...”

The entrance of Renault and Ford to the BTCC bumped the number of manufacturers up to eight, and these two marques – along with series stalwart Vauxhall – were integral to the other hugely significant development of 1993: the birth of the TOCA package. Each committed its two championships to run solely with the BTCC. “The defining moment was when we went to Oulton Park in 1992,” relates Gow. “You just got given what you got given to race with, and one of the support championships was an awful local club series. I stood there thinking, ‘We’ve got tens of thousands of people here and they deserve better’.”



‘Smokin’ Jo’ leads BMW team-mate Soper at Snetterton in May 1993



# KANKKUNEN IS KING AS NEW STAR RISES

*The Finnish rally legend takes a fourth title and Colin McRae a breakthrough win*

**TOM HOWARD**

**T**hirty years have passed, but the 1993 World Rally Championship season is still remembered as a year of firsts. It witnessed the rise of the WRC's most popular figure amid the crowning of a bona fide record-breaking legend.

It was Toyota's Juha Kankkunen who ultimately emerged with the spoils to become the first four-time world champion and record rally winner to boot, after seeing off the factory Ford challenge from Francois Delecour and Miki Biasion, driving the potent new Escort RS Cosworth.

But it was another first that captured the imagination of British rally fans as Colin McRae burst onto the world stage. The two-time British Rally champion had already been signed up by the Prodrive Subaru team, but this was his big moment after earning a promotion to the WRC. And so began an iconic collaboration between the Scot and the famous blue-and-yellow Japanese machines that would go on to yield 16 WRC wins and the world title in 1995.

A third in Sweden proved that McRae, in an ageing Legacy, belonged on the world stage. McRae had built up a reputation for his wild and spectacular driving style that, while endearing him to fans, wasn't always conducive to securing results. But in New Zealand he was able to use speed *and* control to defeat Delecour, Didier Auriol (Toyota), reigning champion Carlos Sainz (in his uncompetitive Lancia) and Kankkunen to score the first of his 25 WRC wins.

"I wasn't driving faster than before, but remember, when I've gone quicker I haven't always stayed on the road," said McRae, who



celebrated his 25th birthday during Rally New Zealand. It also represented the first British WRC success since Roger Clark's RAC Rally victory in 1976.

McRae's breakthrough was just one chapter of a thrilling 1993 campaign that had entered a crucial phase in New Zealand. Kankkunen and Delecour were battling for the drivers' crown, while Toyota and Ford were tied in a tight manufacturers' contest.

Kankkunen had taken his Castrol-backed Toyota Celica Turbo ST185 to wins on the Safari and in Argentina. In the Kenyan event, Toyota had scored a 1-2-3-4 with Ford and Lancia absent; in South America, Kankkunen had won alongside Nicky Grist, drafted in at short notice after regular navigator Juha Piironen suffered a brain haemorrhage – the Finn would make a full recovery.

Meanwhile, the Ford challenge was strong, and Delecour took wins in Portugal and Corsica after coming so close to giving the Escort a debut victory in Monte Carlo. But back-to-back wins in Finland (1000 Lakes) and Australia made Kankkunen favourite to add to his 1986, 1987 and 1991 crowns. His success in Australia also sealed Toyota its first WRC manufacturers' title.

With Kankkunen and Toyota not contesting Sanremo, Delecour had to strike, but a crash in appalling weather conditions gave Kankkunen match point, which he duly took in Spain. He needed to finish third to wrap up the title, and inherited the place after Biasion's late turbo issue to win the war, despite Delecour's victory. The icing on Kankkunen's cake was applied by recording a fifth win of the season – a then-record-breaking 20th career victory – at the Rally GB finale. 🏆



Most of this year's Formula 3 crop have never experienced Macau's compelling appeal



Mortara took a thump from behind in 2019 qualification race



2011 Macau GP winner Juncadella: "No way I was going to miss this"

# BACK INTO TOP GUIA

*COVID meant the Macau Grand Prix has been a local event for the past three years. But now the F3 and GT internationals are returning to the awe-inspiring Guia circuit*

JAMIE KLEIN

**F**or single-seater and GT racing aficionados, a painful four-year wait ends this week with the return of the FIA Formula 3 and GT World Cups to their rightful place at the Macau Grand Prix. While the event continued to run with local F4 and GT races even during the dark days of the COVID-19 pandemic, it would be fair to describe it as a mere shadow of its former self. Now, with border closures and quarantine protocols but a distant memory, the entry lists are stacked with international talent ready to put everything on the line in search of success in the 'Las Vegas of the East'.

In F3, there's an impressive crop of young talent, most of whom have never experienced the streets of Macau owing to the pandemic, which should make the contest wide open. By contrast, the GT entry list is rife with veterans eager to make the most of a rare chance to forget about sharing a car with team-mates and go all-out in pursuit of individual glory.

One of those drivers is Daniel Juncadella, whose first trip to Macau was all the way back in 2010 with the Prema F3 team. A few of the drivers he raced against that year – Edoardo Mortara, Laurens Vanthoor and Adderly Fong – are also on the GT entry list 13 years later, along with many others to have made their names at the famous Guia Circuit.

Juncadella won the Macau GP in 2011, and made three more outings in F3 machinery before his Macau GT debut in 2017. This year is his first outing since then, as he joins Raffaele Marciello, Maro Engel and Jules Gounon in defending Mercedes honour. "When I heard Macau was coming back, there was no way I was

**"I ASKED ONE F3 TEAM IF THEY WERE INTERESTED IN A DRIVER WITH EXPERIENCE. NO HARM IN ASKING"**

going to miss it!" beams Juncadella. "The atmosphere around Macau is so exciting. You have this packed city full of skyscrapers and bright lights, gamblers, there's a lot of action going on... You get there and you can feel the vibe. And the track layout itself is unique. For the last couple of years there hasn't been a proper World Cup, but this year we have all the top GT drivers in the world again. That makes it very special."

Although he's now a factory Mercedes GT driver with his single-seater days long behind him, 32-year-old Juncadella admits: "If you asked me which car I would choose to drive, I would still choose the F3 car to be honest. Actually, I asked one team if they were interested in having a driver with experience. I thought there was no harm in asking. But then I was asked how much budget I had, so the conversation ended pretty quickly!"

Topping the F3 entry list is 2019 Macau winner Richard Verschoor, who is one of several F2 drivers to step down a rung

of the ladder for Macau, along with his Trident team-mate Roman Stanek and Red Bull junior pair Isack Hadjar (Hitech) and Zane Maloney (Rodin Carlin). Besides Verschoor, only three others on the entry list have Macau F3 experience. Two-time winner Dan Ticktum, who now races in Formula E, is back with Rodin Carlin as he aims to become the first three-time winner of the event in F3 machinery. The others are IndyCar rookie star Marcus Armstrong (MP Motorsport) and current F3 racer Sophia Florsch (Van Amersfoort Racing).

Not all of the 2023 FIA F3 field will be in action at Macau, with champion Gabriel Bortoleto and runner-up Zak O'Sullivan two notable absentees. But race winners Paul Aron and Gabriele Mini (both Prema), Franco Colapinto (MP), plus Pepe Marti and Oliver Goethe (both Campos Racing) will all be present, along with a couple of intriguing additions such as Euroformula Open champion Noel Leon (VAR) and McLaren junior Ugo Ugochukwu (Trident), who steps up as an F4 title winner.

Juncadella says he's "personally cheering on the Spanish guys – Mari Boya [another F3 regular, driving for MP] and Marti. I am friends with both of them and I've done a few laps with them on the simulator." But, when it comes to picking a winner, he adds: "The guys with experience will be faster to get up to speed. Verschoor and Ticktum will be the benchmarks."

And what about the GT World Cup entry list? While it would take a brave person to bet against the star-studded Mercedes line-up, which features two former event winners in Marciello and Engel, BMW, Audi, Porsche and even Ferrari all have factory aces lined up in their bid to knock the Three-Pointed Star from its perch.

Porsche is the best represented marque with seven 911 GT3-Rs, and an equally impressive line-up of talent. The marque's WEC Hypercar stars Laurens Vanthoor (who famously won the 2016 event on his roof) and Kevin Estre are joined by Earl Bamber, newly crowned DTM champion Thomas Preining, Alessio Picariello and Matteo Cairoli. BMW has M4 GT3s entered for 2018 winner Augusto Farfus and Sheldon van der Linde, while Audi can rely on 'Mr Macau' himself: Mortara, a two-time F3 winner in 2009-10 and a four-time victor in a GT car, to put the R8 LMS GT3 in the mix. Adding extra glamour is a sole Ferrari 296 GT3 entered for Brazilian Daniel Serra.

For Juncadella and his rivals, the GT World Cup is a rare chance to shine as an individual. And the Spaniard is confident of a strong showing on his Macau return off the back of his recent success in the Mercedes-AMG GT3 in GT World Challenge and IMSA. "This is really a one-off, racing for yourself, you don't have to rely on others and you can prove your speed," he asserts. "Not that most of the drivers need to prove anything, but it's nice for your ego! We are used to sharing everything, but this is like being back to the single-seater guys where your team-mate is your main rival."

"It's going to be super-tough. But after two very strong years for me personally, I also feel that it's good timing for me to come back to Macau. I'm feeling very confident." 🌟

Santi Urrutia  
heads the  
combined World  
Tour and TCR Australia  
field at the start of  
race one

## Big guns shine as inaugural Tour heads for its climax

**TCR WORLD TOUR  
BATHURST (AUS)  
11-12 NOVEMBER  
ROUND 8/9**

The international drivers excelled on the Mount Panorama circuit in the second weekend of a double-header as the TCR World Tour came together with TCR Australia for its two final rounds of 2023 at Sydney Motorsport Park and Bathurst. Cyan Racing's Santiago Urrutia and Yann Ehrlacher both claimed wins along with Hyundai's Norbert Michelisz.

Supercars regular Tony D'Alberto set the pace in qualifying in his Honda, but the Australian was outdone at the start by Urrutia, whose Lynk & Co bolted into the lead at Hell Corner and never looked back, cruising to his third victory of the season. Urrutia was followed home by Nestor Girolami, who'd made a strong start from fourth, darting around the outside into

second ahead of Honda team-mate D'Alberto, consigning him to third.

The title challenge of 2022 world champion Mikel Azcona collapsed on lap eight of 11 with a front-right puncture. This handed fourth to Ehrlacher with team-mate Thed Bjork behind. At the restart, Rob Huff dived past soon-to-be-crowned Australian champion Josh Buchan up the Mountain Straight to secure sixth and assume the World Tour points lead.

Michelisz had moved from 11th to 10th, which gave him pole for the reversed grid second race. The Hungarian lost ground at the start, dropping behind GRM Peugeot's Aaron Cameron and the Audi of Frederic Vervisch. But Michelisz quickly took back second from the Belgian up Mountain Straight, before diving past Cameron for the lead at The Chase three laps later.

Vervisch copied the move a lap later to take second, but the Audi factory driver then dutifully fell back at the end to help

team-mate Huff, who finished fourth.

The final race featured an all-Lynk & Co front row, with Urrutia on pole ahead of Ehrlacher. The two duelled all the way up the straight, Urrutia slotting in behind before Quarry Corner, with Bjork making it a Cyan Racing 1-2-3 in the early phase.

The two Australians D'Alberto and Cameron came together fighting for fourth on the opening lap through The Chase, allowing a thankful Huff past them both.

That became third when Urrutia hit the wall at the top of the hill and retired from second, shortly before the two Peugeots of Cameron and GRM team-mate Jordan Cox stopped with mechanical issues within moments of each other, causing the final safety car of the day.

The race was set to restart with a one-lap sprint to the finish when the luckless Azcona's steering snapped on the exit of Forrest's Elbow, the Hyundai slamming into the wall and stopping on circuit.

Ehrlacher thus won the race behind the safety car ahead of Bjork and Huff, with Ehrlacher and Huff leaving Bathurst tied for the lead of the drivers' standings on 384 points. Michelisz is just one behind.

The inaugural TCR World Tour concludes this weekend at Macau, with Ehrlacher chasing his third world title, and Huff and Michelisz both looking for their second at the track where Huff has an unprecedented record of 11 race victories. It also means there's the possibility of the 2012 champion securing a final title for Audi Sport before it shuts its factory-supported customer programmes in both GT and touring car racing at the end of the year.

**NEIL HUDSON**



# Kristoffersson hits his WRX rivals for six

**WORLD RALLYCROSS**  
**HONG KONG (HKG)**  
**11-12 NOVEMBER**  
**ROUNDS 5/5**

Johan Kristoffersson secured a record-breaking sixth World Rallycross title as he and Kevin Hansen won in Hong Kong.

Kristoffersson was the red-hot title favourite heading into the season closer and wasted no time in sealing his fourth crown in succession on day one. The Volkswagen Dealer team Bauhaus driver finished second to rival Hansen in his semi-final, but this result was enough to end the competition prematurely.

The Saturday final was taken by Hansen, who had dominated proceedings as the drivers once again used the RX2e ZEROID X1s, with Niclas Gronholm second. A reliability problem left Kristoffersson stranded on track during the final lap when running second.

Hansen began Sunday where he had left off on Saturday, taking superpole from Kristoffersson on the combined sand and asphalt layout. But things quickly went south for Hansen as he failed to progress to the final, finishing fourth in his semi-final. Still, he was confirmed as vice-champion.



Brit Patrick O'Donovan made it to the podium



First visit to spectacular Hong Kong proved a hit

Meanwhile, Kristoffersson displayed all of his championship-winning class, winning on each occasion from his second heat onwards. In the final, he laid on a crushingly dominant display to take the chequered flag 3.641 seconds ahead of Ole Christian Veiby, who recorded his best result of the campaign.

Patrick O'Donovan rounded out the event podium positions on only his second outing of the season as Gronholm completed the championship top three from Timo Scheider.

"I'm very happy to have been able to put on a show in front of so many fans," said Kristoffersson. "It's been fantastic coming here and, after a disappointing final on Saturday, it was great to pull off the win. I can't thank the team enough for all the effort they have put in. They work every waking hour, sacrificing time with their families to give us the best car possible, so to reward them like this is fantastic – and there's no better place to celebrate than here in Hong Kong!"

SAM HALL

## WEEKEND WINNERS

### TCR WORLD TOUR BATHURST (AUS)

- Race 1** Santiago Urrutia  
Cyan Racing (Lynk & Co 03 FL TCR)
- Race 2** Norbert Michelisz  
BRC (Hyundai Elantra N)
- Race 3** Yann Ehrlacher  
Cyan Racing (Lynk & Co 03 FL TCR)

### WORLD RALLYCROSS HONG KONG (HKG)

- Race 1** Kevin Hansen  
Hansen World RX Team
- Race 2** Johan Kristoffersson  
Kristoffersson Motorsport

### EUROCUP-3 BARCELONA (ESP)

- Race 1** Esteban Masson  
Campos Racing
- Race 2** Esteban Masson  
Campos Racing

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# Bastianini ends wait as title fight remains tight

**MOTOGP**  
**SEPANG (MYS)**  
**12 NOVEMBER**  
**ROUND 18/20**

Ahead of the Malaysian Grand Prix, the word 'joker' was being bandied about. In the ridiculous world of tyre pressure regulations, Pramac Ducati's Jorge Martin came into the round having been hit with a warning in Japan for running his front tyre too low under the minimum pressure recommended by Michelin. His title rival and the current championship leader, Francesco Bagnaia, had yet to be copped for this. Thus, he held an advantage in his hands that could have proved crucial in his quest for a second world title.

That advantage looked even more important come the grand prix, as he had the entire measure over Martin. Bagnaia grabbed his first pole since Barcelona in September, doing so with a stunning lap record to best Martin – who had only just set a new record himself, before crashing on his final attempt. Both were quick to play the significance of it down. But it was evident that this was an important moment for Bagnaia – backed up by his comment that his pole lap was “a relief”.

He couldn't hold it in the sprint, finishing third behind Martin and winner Alex Marquez on the Gresini Ducati. A problem with the front pressure being too high (Michelin is adamant this was actually a heat issue with the medium front tyre) meant he struggled for pace, and his championship lead dipped to 11 points.

In the grand prix, Martin made the



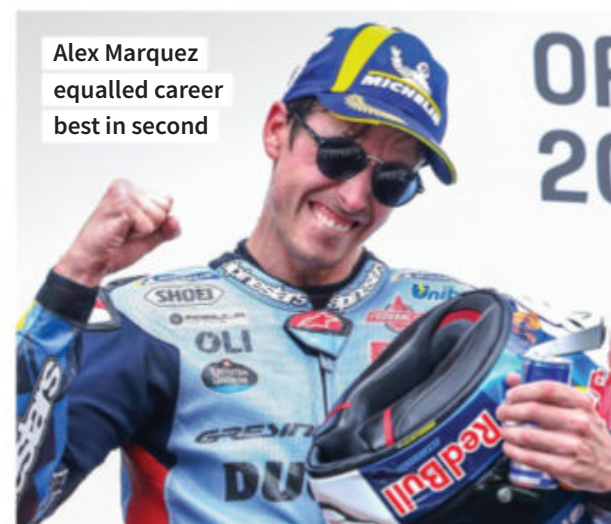
Bastianini led every lap to take his first victory of the season

marginally better start than the rest of the front row, but ran wide into Turn 1. This let third-placed Enea Bastianini, Alex Marquez and Bagnaia through, while Martin dropped to fifth.

Bagnaia struggled to keep pace with the leading duo and, once Martin had cleared VR46's Marco Bezzecchi at Turn 14 on the opening lap, he closed the gap.

What followed was an intriguing battle between the pair. Martin tried a similar move to the one he had put on Bezzecchi on the third tour of 20. Just as he'd done off the line, he ran wide – and Bagnaia scythed back immediately, ensuring there was very little room for the Pramac rider to occupy.

Martin tried again into Turn 4 moments later and once more ran wide. This time, Bagnaia cut back to his inside and chopped him on the run through the long left at Turn 5. Martin's nose was firmly wiped



Alex Marquez equalled career best in second

and he would drop over six seconds adrift.

With a 3s penalty looming for a second tyre pressure offence, Martin did start the grand prix slightly higher in psi than he would have liked to be on the safe side. But his front medium tyre overheated chasing Bagnaia and from lap six onwards he felt like he “was crashing every corner”.

Bagnaia made no secret of how important he felt winning this battle for third was, even if it means his championship lead is only 14 points – a loss of just one for Martin from the pre-weekend starting point. But Bagnaia fell foul of the tyre pressure rules, copping him a warning. His 'joker' is gone, and the title battle is now even more finely poised.

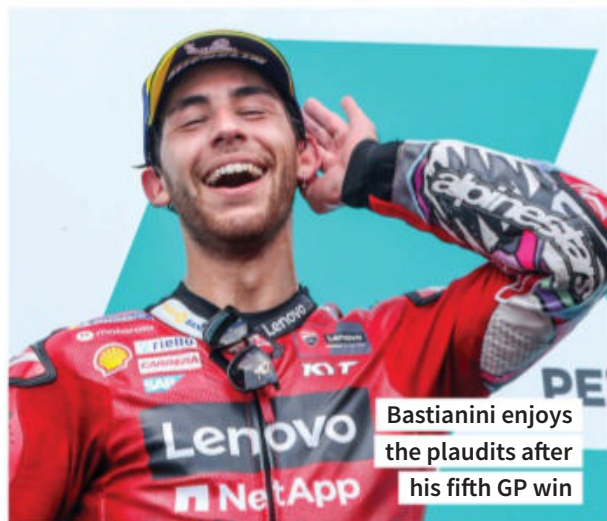
Bastianini also committed the same 'crime' as Bagnaia, but mercifully it didn't deny him his first win since September 2022. Missing half the season in his first campaign with the factory Ducati squad due to injuries, Bastianini has had little time to adapt to the 2023-spec Desmosedici. But a breakthrough with set-up, through



Bagnaia beat Martin in crucial fight for final podium spot



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Bastianini enjoys  
the plaudits after  
his fifth GP win

tweaks to the bike's engine braking and the use of a thumb-operated rear brake, allowed him to qualify third and dominate the GP.

All of this comes as Ducati admits promoting Martin to Bastianini's seat for 2024, despite the latter having a deal in place, is a possibility. For Bastianini, this win sent "a small message" to Ducati.

Fabio Quartararo was a fighting fifth on his Yamaha from Bezzecchi, who is now mathematically out of the title chase. VR46 team-mate Luca Marini completed the top 10 on a weekend in which he has now emerged as the favourite to take Marc Marquez's seat at Honda next year.

Franco Morbidelli is "giving my life" to end his Yamaha stint on a high, finishing seventh in Malaysia ahead of KTM's Jack Miller and Gresini's Fabio Di Giannantonio – who, despite his recent podium form in Australia, now looks like he will be out of a job next season as the Honda opportunity slips through the Italian's grasp.

LEWIS DUNCAN

**RESULTS ROUND 18/20, SEPANG (MYS), 12 NOVEMBER (20 LAPS – 68.885 MILES)**

POS	RIDER	TEAM	TIME
1	<b>Enea Bastianini</b> (ITA)	Ducati	39m59.137s
2	<b>Alex Marquez</b> (ESP)	Gresini Ducati	+1.535s
3	<b>Francesco Bagnaia</b> (ITA)	Ducati	+3.562s
4	<b>Jorge Martin</b> (ESP)	Pramac Ducati	+10.526s
5	<b>Fabio Quartararo</b> (FRA)	Yamaha	+15.000s
6	<b>Marco Bezzecchi</b> (ITA)	VR46 Ducati	+16.946s
7	<b>Franco Morbidelli</b> (ITA)	Yamaha	+18.553s
8	<b>Jack Miller</b> (AUS)	KTM	+19.204s
9	<b>Fabio Di Giannantonio</b> (ITA)	Gresini Ducati	+19.399s
10	<b>Luca Marini</b> (ITA)	VR46 Ducati	+19.740s
11	<b>Maverick Vinales</b> (ESP)	Aprilia	+21.189s
12	<b>Johann Zarco</b> (FRA)	Pramac Ducati	+23.598s
13	<b>Marc Marquez</b> (ESP)	Honda	+27.079s
14	<b>Augusto Fernandez</b> (ESP)	Tech 3 KTM	+28.940s
15	<b>Pol Espargaro</b> (ESP)	Tech 3 KTM	+29.849s
16	<b>Iker Lecuona</b> (ESP)	LCR Honda	+50.960s
17	<b>Alvaro Bautista</b> (ESP)	Ducati	+53.564s
18	<b>Takaaki Nakagami</b> (JPN)	LCR Honda	+1m42.162s
R	<b>Brad Binder</b> (ZAF)	KTM	11 laps-accident
R	<b>Aleix Espargaro</b> (ESP)	Aprilia	8 laps-accident
R	<b>Raul Fernandez</b> (ESP)	RNF Aprilia	6 laps-mechanical
R	<b>Miguel Oliveira</b> (PRT)	RNF Aprilia	5 laps-accident
R	<b>Joan Mir</b> (ESP)	Honda	4 laps-accident

**Winner's average speed** 103.364mph. **Fastest lap** A Marquez 1m58.979s, 104.214mph.

**QUALIFYING 2** 1 Bagnaia 1m57.491s; 2 Martin 1m57.549s; 3 Bastianini 1m57.590s; 4 A Marquez 1m57.661s; 5 Marini 1m57.787s; 6 Bezzecchi 1m57.805s; 7 Binder 1m58.050s; 8 Quartararo 1m58.080s; 9 Vinales 1m58.253s; 10 Miller 1m58.468s; 11 Giannantonio 1m59.211s; 12 Zarco 2m01.848s.

**QUALIFYING 1** 1 Giannantonio 1m57.823s; 2 Bastianini 1m57.911s; 3 A Espargaro 1m58.069s; 4 A Fernandez 1m58.107s; 5 Morbidelli 1m58.321s; 6 Mir 1m58.440s; 7 P Espargaro 1m58.555s; 8 R Fernandez 1m58.623s; 9 Oliveira 1m58.638s; 10 M Marquez 1m58.717s; 11 Nakagami 1m58.886s; 12 Bautista 1m59.418s; 13 Lecuona 1m59.658s.

**SPRINT RACE** (10 LAPS – 34.443 MILES)

1 A Marquez 19m58.713s; 2 Martin +1.589s; 3 Bagnaia +3.034s; 4 Bastianini +3.242s; 5 Binder +3.310s; 6 Miller +4.318s; 7 Bezzecchi +5.307s; 8 Zarco +5.501s; 9 Marini +6.420s; 10 Vinales +7.241s; 11 Morbidelli +8.775s; 12 A Espargaro +9.995s; 13 Giannantonio +10.067s; 14 A Fernandez +10.643s; 15 P Espargaro +11.005s; 16 Quartararo +11.911s; 17 R Fernandez +13.591s; 18 Oliveira +15.058s; 19 Nakagami +16.015s; 20 Lecuona +23.484s; 21 M Marquez +24.930s; 22 Bautista +36.501s; 23 Mir +40.594s.

**Winner's average speed** 103.438mph. **Fastest lap** Bastianini 1m58.996s, 104.199mph.

**RIDERS' CHAMPIONSHIP** 1 Bagnaia 412; 2 Martin 398; 3 Bezzecchi 323; 4 Binder 254; 5 Zarco 200; 6 A Espargaro 198; 7 Vinales 175; 8 Marini 171; 9 Quartararo 156; 10 Miller 156.

**CONSTRUCTORS' CHAMPIONSHIP** 1 Ducati 626; 2 KTM 334; 3 Aprilia 292; 4 Yamaha 176; 5 Honda 169.



Fine fifth for  
Quartararo

**NEXT  
REPORT**  
Qatar GP  
23 November  
issue

**WEEKEND  
WINNERS**

**MOTO2**

**FERMIN ALDEGUER**

Speed Up Racing  
(Boscoscuro)

**MOTO 3**

**COLLIN VEIJER**

(below)

Husqvarna Intact GP  
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Wallis selected as new **Porsche Carrera Cup GB Junior**

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SEASON REVIEW

## British GT conquerors

How the battles for GT3 and GT4 honours were won



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# British GT driver Wallis chosen as new Porsche Carrera Cup GB Junior

## PORSCHE

British GT racer James Wallis has been selected as the new Porsche Carrera Cup GB Junior for the 2024-25 seasons after impressing in a shootout at Silverstone earlier this month.

The 18-year-old drove a Track Focused Mercedes-AMG GT3 for the majority of this year, taking a best result of sixth, and he defeated stiff competition from fellow British GT driver Josh Rowledge, European GT4 racer Tom Edgar and Porsche Sprint Challenge GB champion Joe Warhurst to be named as the new Junior at Porsche's Night of Motorsport event on Saturday evening.

Each of the finalists took part in an extensive range of driving, fitness and media assessments and had in turn progressed from a shortlist of 12 that were interviewed by members of the Carrera Cup organising team in September.

Wallis, who has also raced in the GT Cup, will now receive £85,000 towards his budget for each of the next two Carrera Cup seasons as well as being offered a wealth of opportunities



Wallis fought off strong competition to be selected

and support from Porsche. He follows in the footsteps of Adam Smalley, who became the fifth consecutive Junior to secure the title during their two years of the programme when he sealed the spoils with an event to spare this season.

"When I heard my name get pulled out of the golden envelope it was all a shock," said Wallis, who then returned to the reality of schoolwork on Monday. "It was a super intense [shootout] day and the other three candidates were all big in the GT world, so I knew I had to be on my A-game."

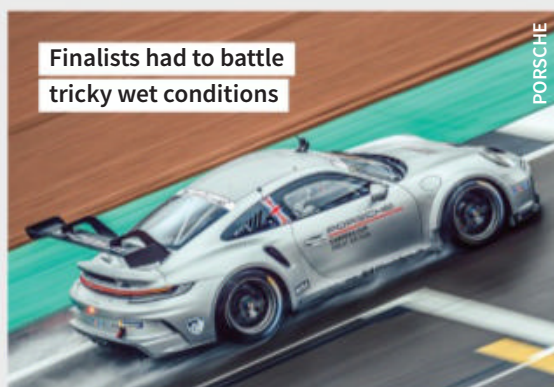
"It's an amazing opportunity as you meet so many people along the

way. It's great to work close to a manufacturer – I can't wait!"

Porsche GB motorsport manager James MacNaughton added: "The finalists each performed with grit and determination on the day, justifying why they deserved their place. James nosed ahead of the competition and we're excited to begin working with him."

"I'm certain that James will thrive as he seeks to emulate those who have gone before him, representing Porsche both on and off the track over the next two years – we look forward to seeing him grow and progress."

STEPHEN LICKORISH



Finalists had to battle tricky wet conditions

## Fairclough joins Hitech for 2024 F4

### BRITISH F4

British Formula 4 race winner Deagen Fairclough will move to Hitech GP for his sophomore campaign in the category next year.

Former Fiesta Junior and Junior Saloons racer Fairclough secured his place on this season's F4 grid after winning the ROKiT Racing Star simulator competition, which gave him a fully

funded drive. He had an erratic start to the year with JHR Developments but became an established frontrunner as the season wore on, finishing third in the points with three wins.

Fairclough will now move to the Hitech squad that guided Alex Dunne to the 2022 title and powered Will Macintyre to runner-up in this year's table.

"Winning the ROKiT

Racing Star competition last year enabled me to race in the 2023 F4 season, which was a fantastic learning curve and I was pleased with the developments and improvements I made through the season," said Fairclough. "I am so excited to be joining Hitech GP and am delighted to have the continued sponsorship from ROKiT Group. I can't wait to get started!"



Fiesta Junior graduate took three wins this year



MICK WALKER

Greatrex Sr will serve a six-month ban from racing

## Mazda drivers banned after 'abhorrent' behaviour

### MOTORSPORT UK

Father-and-son Mazda MX-5 drivers Jason and Callum Greatrex have both been banned from racing following a National Court disciplinary hearing that examined a series of incidents at an ill-tempered meeting at Donington Park in September.

Greatrex Sr was a regular frontrunner in this year's British Racing & Sports Car Club MX-5 Championship for Mk1 models of the sportscar and was joined in Leicestershire by his son. But the pair both tangled with points leader Steve Foden in the opening Donington race when Foden returned to the track after going off following a mechanical issue.

According to his report of the hearing, chair of the panel Tony Scott Andrews said that the clerk examining these clashes had already received written and verbal information that the Greatrexes were "out to get Steve Foden". Both drivers were disqualified from the meeting and handed six penalty points on their licences.

However, when Greatrex Jr was informed of this, per the report, he "used abusive language to the clerk, left the room continuing to swear and, on leaving the building, slammed the door with such force that it caused some damage to the door and wall".

Both appealed the clerk's decision to the stewards, who overturned Greatrex Jr's penalty but upheld Greatrex Sr's, meaning his championship hopes were over.

Greatrex Jr was then summoned in front of the officials due to his earlier response to the penalty and he was disqualified from the meeting again.

"On returning to his awning by bicycle, he passed the Foden awning, stopped and made threatening comments," continued Scott Andrews' report. "He then cycled away and returned to confront and be abusive to a Foden team member, which culminated in Greatrex spitting in that person's face."

Greatrex Jr said a team member had made a "rude hand gesture" to him and, later when Foden's car was passing his awning towards the assembly area, the report said he "caused the car to stop then picked up his bicycle and threw it at the car and proceeded to kick the door. His father is also said to have kicked the car."

Both Greatrexes apologised for their actions to the court, but received bans of varying lengths. Greatrex Jr was banned for five years, although the final three are suspended. He has also been fined £1000, and must pay £250 in costs.

"The court considers his actions to be utterly unacceptable in every respect, in particular the abhorrent act of spitting in

someone's face," said Scott Andrews. "The court finds it difficult to accept that those appalling actions were committed by the apologetic and contrite young man who appears before them today."

Greatrex Sr, meanwhile, was banned for a year, the second six months of which is suspended. He was also fined £1000 and must pay £250 in costs. "The court accepts that his actions in kicking Foden's car were entirely out of character," said Scott Andrews. "The court accepts his apology and genuine sense of contrition, especially after so many years of participation in and contribution to motorsport."

- A separate disciplinary hearing was also held into "abusive" language from the father and sister of National Formula Ford 1600 frontrunner Lucas Romanek at a BRSCC meeting at Silverstone in September.

Romanek was twice involved in collisions with Chris Middlehurst – who had joined the Team Dolan squad of Romanek's main title rival Jordan Kelly for the Silverstone event – and Romanek's family confronted Middlehurst in the paddock. "The conversation became very heated and abusive, especially on the part of his [Romanek's] sister," said Scott Andrews.

Romanek, who had "taken no part in the altercation" and "asked both his father and his sister not to go and speak to the other driver" was disqualified from the meeting as Motorsport UK rules deem him "responsible for the actions of those connected with his entry" and had his licence suspended for 30 days.

The court did extend the ban to the end of the year, but suspended this, and Romanek therefore took part in the United Formula Ford finale at Brands Hatch. He was also fined £250 and told to pay £250 in costs.



Romanek was another driver to be banned

STEVE JONES

# Enduro Motorsport calls time on racing activity

## BRITISH GT

The Enduro Motorsport team has closed its doors, although founders Marcus Clutton and Morgan Tillbrook still intend to race together next year.

The team began life in the Fun Cup Championship in 2019 before expanding into endurance racing, where it achieved wins in the British Endurance Championship, GT Cup and, more recently, British GT.

Much of Clutton and Tillbrook's focus was on the latter category as the duo claimed a total of three wins, two of which came in 2022 as they finished third overall in the drivers' standings.

The team expanded to running an entry in GT4 this season as well as GT3, but the decision has been taken to focus efforts on funding



an arrive-and-drive package rather than running a standalone team.

"Morgan didn't want that extra stress of having to run a team," said Clutton. "It was never making profit but eventually we wanted it to, and he just decided he didn't want to chase that, he just wants to enjoy his racing."

"As a team, I'm super proud [of what we achieved] and I didn't really know how highly regarded it was until we announced this."

STEFAN MACKLEY

# MORE THRUXTON BTCC RACES FOR MINI 7 CLUB

## MINI 7 RACING CLUB

The Mini 7 Racing Club is again due to feature at the Thruxton round of the British Touring Car Championship next year, while it will also form part of the popular Castle Combe Autumn Classic event.

The classic Minis have been a hit on two previous BTCC-supporting visits to Hampshire, providing some entertaining racing, and are set to be part of the 8-9 June event again next season. Alongside the Combe Autumn Classic, the club's calendar also includes trips to Cadwell Park, Anglesey and the Brands Hatch Mini Festival, which returns to being a two-day meeting. Organisers have attempted to avoid clashes with major historic events, such as the Goodwood fixtures.

"We're delighted to be back with touring cars again," said the club's commercial manager Colin Peacock. "It puts our members in front of a crowd of 30,000 people and on TV, which has really helped grow the club. Thruxton produces racing where, every lap, you don't know who's going to come through in the lead of the race into the chicane."

Peacock added that it is "great" the Mini Festival is returning to two days. "The club is all about socialising because 90% of the time you're not racing or doing anything on track," he said. "The social side is really important so we'll probably do another quiz, a barbecue and disco."

The club is also looking to experiment with the format for its winter event at Brands in November and could adopt a Legends-style random grid draw.

STEPHEN LICKORISH

# New home for Legends as series joins MSVR after leaving BARC

## LEGENDS

The Legends Cars Championship will join MotorSport Vision Racing's roster for 2024, ending its 20-plus year association with the British Automobile Racing Club.

Next year will mark the 30th anniversary of the category, which has continued to grow in recent years after appearing on the British Touring Car support bill this term.

That will continue again in 2024, with visits to Donington Park, Brands Hatch and Knockhill, but now under the banner of MSVR. The club runs the popular

American SpeedFest event at Brands Hatch, which has become a staple on the Legends calendar.

Phil Cooper, Legends owner, said: "Next year is an incredibly important one for our much-loved Legends Cars Championship, our 30th anniversary season in the UK, so what better time to embark on this incredibly exciting move to join the fantastic stable of championships organised by MSVR. The professionalism offered by MSVR is second to none, so we're all relishing this new partnership as Legends Cars move into a new era."



American SpeedFest is a popular event for Legends

GARY HAWKINS



JEP/MOTORSPORT IMAGES

# Free entry for Racing Hondas drivers in 2024

## CLUB TIME ATTACK

Organisers of the Racing Hondas championship have launched a new initiative that gives drivers free entry to the category thanks to funding from sponsor Tegiwa.

The Club Time Attack series was a new addition to the national motorsport ranks for this year and is open to a variety of Honda machinery split into classes based on power-to-weight ratio. Organisers have been looking at ways to boost numbers and believe this new scheme – that enables up to a full grid of 34 drivers to avoid paying entry fees – is a ground-breaking initiative.

Competitors interested in taking part next year need to apply by the end of this month by completing a form available on the category’s website. Tegiwa will then assess all the applications and drivers will be informed in January if they have a place on the grid.

“We are transparent in our obsession to create a fresh and exciting environment for drivers who love to race Hondas,” said Time Attack founder Andy Barnes. “My



Tegiwa is offering to pay entry fees for drivers

team and I are motivated to use our experience, form and integrity to push the boundaries and deliver our visions without holding back. This initiative by Tegiwa is equally as bold and I welcome such a superb and genuine offer for competitors.”

Tegiwa director Luke Sedzikowski added: “We’ve been partners with the Time Attack organisation for a number of seasons, supporting our customers and even fielding our own cars, so we know how they run things. We believe in this championship

and we know it will be the place to be if you want to race a Honda, and the introduction of this ground-breaking sponsorship initiative for competitors proves that point.

“The only item a registered driver will have to pay for is their Club Time Attack membership. It’s then just the usual costs of running the car – although our sponsorship package will help them with that too, by offering discounted parts and incentives to keep their running costs in check, none of which is mandatory or exclusive to us.”

# F5000 Talons sharpen their claws at Manfeild



## HISTORICS

Driving American-built Talons as raced by Chris Amon, for whom the Manfeild circuit is named, Grant Martin and David Banks each won a leg of the opening round of the New Zealand Formula 5000 Tasman Cup Revival

Series last weekend.

Poleman Martin aced Saturday’s sprint race by 0.60 seconds from Kevin Ingram (Lola T332), with Banks (ex-Jon Woodner MR1) third. Banks Sr and Martin finished 1-2 in Sunday’s reversed-grid handicap, disjointed when leader Toby Annabell

(McLaren M10B) spun and Codie Banks (T332) tagged Ingram in the melee.

Brake issues sent Martin’s Talon MR1A into the barriers in the finale, won by Ingram from Banks Sr and Jr. Frank Karl (ex-Mike Walker M10B) dominated the early class.

MARCUS PYE

ANGELO R. DRIVE

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# New Scirocco Storm Challenge part of Track Action

## TRACK ACTION

A new Scirocco Storm Challenge will form part of the rebranded Track Action series next year and has been created to give drivers from Junior Saloons a club-level car to progress to.

JSCC organiser Dave Beecroft and his team took over the management of Track Attack at the end of last year and have now decided to rebrand it for 2024. The Sciroccos will initially form part of this category and one of the cars was on display at the JSCC finale at Brands Hatch earlier this month.

“Every year I lose 10 kids out of my paddock [graduating to other championships] and this is a series for youngsters to go into that’s at club level,” Beecroft explained. “The ones with a smaller budget can go into the Peugeot 206 Cup and get a car for £2500-£3000. For the kids with a bit more budget, we’re introducing the Scirocco Storm



Challenge that will run in Track Action in the German section until it can stand alone.

“The car has big wheels, big brakes, proper racing suspension and a paddleshift gearbox – it looks the part. It keeps drivers in the same paddock and the team that ran them in JSCC can run a 206 or Scirocco with them.”

Beecroft said they are not “trying to build a championship overnight”, and the series will only become a standalone category when it is ready, but added that four orders for the Scirocco were already taken following the Brands event.

**STEPHEN LICKORISH**

# No ‘kneejerk reactions’ needed after second major Truck crash

## TRUCK RACING

There should be no “kneejerk reactions” after a second British Automobile Racing Club event had to be shortened this year following a sizeable Truck crash, according to the club’s chief executive.

The Brands Hatch British Truck Racing finale earlier this month was abandoned after a crash between Steven Powell and Simon Reid on the run up Hailwood Hill resulted in the barrier on the inside of the circuit being flattened. This meant the



last Legends race was unable to run and follows on from a Truck going through barriers at Thruxton’s Allard corner in July.

There were no injuries to spectators, marshals or drivers in either of these incidents and BARC chief executive Ben Taylor says it is right the crashes are investigated but cautioned against any hurried conclusions.

“My first thought was I’m grateful that no one was hurt,” said Taylor. “But, secondly, I think it’s easy to do a kneejerk reaction to a couple of incidents – it doesn’t give you a good solution. Motorsport UK have taken a keen look at the Thruxton crash and they went round to all of the circuits and checked the exclusion areas for Truck meetings, as we want the crowd to be in a safe position.

“Brands Hatch was a big shunt but the infrastructure did exactly what it was designed to do – the Armco’s taken a battering but it’s kept the Truck inside the track.”

Taylor said a wider exclusion zone is due to be implemented at Thruxton next year and there could be further restrictions at other circuits, while he suggested the requirements for getting a Truck Racing licence could also be examined.

**STEPHEN LICKORISH**

## PEARSON STAYS IN GB3

Edward Pearson has become the first driver confirmed as racing in GB3 next year after being announced as remaining with Fortec for a second season. He finished 19th in the standings this year after taking two podiums upon his graduation from British Formula 4. “We had some good results this year, but we want to do even better and be battling for wins as we build on everything we’ve learned so far,” said Pearson.

## GALLAGHER STEPS DOWN

TCR UK and Civic Cup championship manager Ash Gallagher has decided to step down from his roles with the Maximum Motorsport-promoted categories. Gallagher joined the organising team at the end of last year, having previously had a long spell in charge of Ginetta’s categories and had also worked for Ciceley Motorsport in the British Touring Car Championship.

## TRANSGENDER INCLUSION

Motorsport UK has become the first national motorsport governing body to implement a policy surrounding the inclusion of transgender people in the sport. “We are very proud to be able to stand with the transgender community to promote an environment that champions inclusion, dignity and respect, and the right for everyone to self-identify,” said CEO Hugh Chambers. “Putting a policy down in writing sets out a clear position: everyone is welcome.”

## MORRIS WINS AT LE MANS

Revolution driver Richard Morris secured the Sports Prototype Cup title after taking two wins at Le Mans last weekend. The car Morris (below, right) shared with Milan De Laet triumphed in the two-hour race aided by main rival Pedro Salvador retiring at half-distance, before the pair each won one of the 20-minute sprint races, Morris charging from the back of the grid after an administrative issue.





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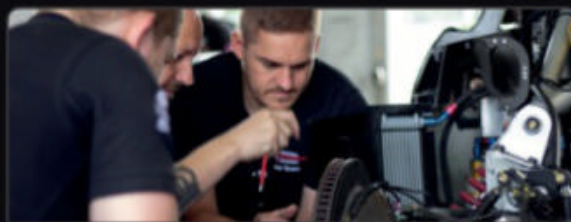
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ALEX PENFOLD

## Sixty years of McLaren celebrated at Velocity

### HISTORICS

Lando Norris, Alexander Rossi and Tony Kanaan were among the star drivers on track as 60 years of the McLaren marque was celebrated last weekend at the Velocity Invitational historic motorsport festival at Sonoma Raceway.

Run for the past two years at the Laguna Seca circuit, the luxury lifestyle event returned to the former Sears Point, where the inaugural edition was staged in 2019. The event included daily demos of cars spanning a century, from Ragtime Racers to IMSA and

Le Mans prototypes.

Among the fleet of iconic cars tracing McLaren's colourful heritage were Formula 1 world championship winners from 1984 (Niki Lauda's MP4/2A-1), 1991 (Ayrton Senna's MP4/6-10) and 2008 (Lewis Hamilton's MP4/23A-05). Classic M7C, M23 and M26 chassis represented the Cosworth DFV-engined era.

Can-Am cars slugged it out on the undulating track and, having won Saturday's heat, Gunnar Jeannette in the ex-Jo Siffert 1969 Porsche 917PA narrowly outran McLaren CEO Zak Brown's ex-works M8D and

Beau DeBard's ex-Vic Elford M8E in Sunday's feature.

Newly crowned Lurani Trophy Formula Junior champion Horatio Fitz-Simon (Lotus Elan 26R) outran the exotic Ferrari 250 LMs of Jeannette and Rob Walton in Saturday's Group 4 GT preliminary. Jeannette did enough to land gold on Sunday, with Fitz-Simon second.

Elsewhere, Bruce Canepa (Porsche 935) had his hands full countering fellow veteran Ken Epsman's Budweiser [Chevrolet] Dekon Monza in the Group 6 IMSA showpieces. Saddling an earlier AMC Javelin, Epsman

landed second in the Group 8 Historic Trans-Am fest, behind Jim Hague's 1969 Ford Mustang.

F1 fans enjoyed seeing Bud Moeller pilot his ex-Keke Rosberg Williams FW08 to victory on both days. Martin Lauber (Penske PC4) and Steve Romak (March 761) ran him closest. Brown (Williams FW07) finished fourth on Saturday.

Canadian Keith Frieser (2009 Zytek LMP1) and Romak (2011 Pescarolo Morgan) won the prototype races. Velocity ringmaster Jeff O'Neill took home a pair of Group 2 wins in his Ferrari 250 GTO.

ALAN WARREN

## Thomson to return to British hillclimbing aboard OMS 28

### HILLCLIMB

Tim Thomson, a leading British Hillclimb Championship protagonist through the 1980s and 1990s, is set to return to the category next season.

The 60-year-old competed in a Hart-powered Pilbeam MP43, MP50 and MP53H turbocar from 1983-90. Winner of back-to-back national rounds at Wiscombe and Prescott in 1985 (in the 2.8-litre MP50), Thompson scored 20 podiums, peaking with third in the 1989 standings in the MP53H.

He returned in 1995, with the ex-Roger Moran Pilbeam-Vauxhall

MP62, but stopped "after a season and a bit. By then the old man [Jim] had died and, because for us it had always been family fun, it wasn't the same. I wasn't enjoying it anymore."

After retiring, he trained as a Motorsport UK clerk of the course and has officiated for the past 12 years before deciding to drive again.

"I've rediscovered my love of hillclimbs over the past couple of years, supporting father and son Jonathan and Dylan Flesher, initially with a one-litre Caterham," he said. "This year they switched to one of Steve Owen's OMS 28 single-seaters



Thomson will share car with Flesher Sr

PAUL LAWRENCE

powered by a similar Suzuki GSXR engine in the 1100cc class.

"The opportunity to make a comeback came about because Dylan has decided to up sticks and move to Australia. That left a seat open and the thought of sharing a great car with my best friend was too tempting."

MARCUS PYE

The Williams Motorsport Caterham 270R had led by three laps at one stage



## Caterham crew secures Race of Remembrance honours

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**BRSCC RACE OF REMEMBRANCE**  
**10-12 NOVEMBER**

From lights out to the chequered flag 24 hours later, the Caterham 270Rs of Williams Motorsport's Rrutuj Patki, Calum Lockie, Toby Ballard and Henry Williams, and DBR Racing's Rob Kennerley, Darren Burke and Ben Timmons were never out of the podium places as the Race of Remembrance celebrated its 10th edition.

Jason McNulty's ES Motorsport Lotus Elise had led off the start of the Anglesey contest, but Burke was in charge as they completed the opening lap, and quickly built a substantial lead. McNulty continued to duel for second with Ballard, while fourth-placed Brake Dancer Racing's Allan Curtis was doing his best to hold on, too.

Burke continued to pull clear at the

front and, after the first hour, had gone almost a lap up on McNulty, Ballard and Curtis, while Zach Lucas' Ford Fiesta was in a solitary fifth. Burke then pitted after 40 laps to hand over to Kennerley – "It's going OK, but it was hard keeping the gap during lappery," said Burke.

Ballard and McNulty, meanwhile, stayed out for considerably longer. "The Elise had me on the straights, but I had him at the hairpins, so we swapped a lot," said Ballard.

McNulty, who handed over to Daniel Palma, added: "The Caterham was quick on the tight bits, but I enjoyed leading, then we got stuck in third gear."

The fifth-placed JRW Motorsport Fiesta had gearbox problems, too: "I was struggling getting fourth and fifth," said Connor Blackburn, after he handed over to Sean Reynolds.

Up at the front, a second stop for

the DBR crew enabled Patki to pound clear for Williams Motorsport, which enjoyed a two-lap lead over Timmons as the third hour was completed. Despite being well into darkness, it was dry and there were four more hours of racing before the overnight halt.

Williams and Lockie both completed their stints, to give Williams Motorsport a three-lap overnight lead from the DBR crew, before an eight-lap gap to Brake Dancer's Tim Steel. The RAF Motorsport Mazda MX-5 was 16 laps off the lead with Oliver Waind, while Seb Fisher had jumped back in the TSW MX-5 to settle in fifth, from Oliver Cottam in another MX-5.

Rain was promised and it duly arrived as racing resumed at 0900 on Sunday, before the halt for the pitlane remembrance service. It was only a 90-minute stint, but Timmons managed to reduce Lockie's lead by a lap, while Waind was in trouble for RAF Motorsport with gearbox maladies.

There had been a brief lull in the rain but, as the third and final part of the race was flagged away, conditions deteriorated and the rain got heavier and heavier. Williams Motorsport had led at the completion of all but the first hour, but the combination of the rain, safety car interventions and individual pitstop strategies, left the outright result wide open right up to the final chequered flag.

Into the closing hour, Lockie had a lap in hand over DBR's Burke, with Brake Dancers' Harry Eyre, Autotest TSW's Oliver Graham, Paul Sheard's Cottam and JRW's Lucas a familiar top six, but it was getting much closer at the top. "I could see him, but didn't think closing the gap was realistic," said Burke. "But it came down



Poignant remembrance service was held on Sunday

ALL PHOTOGRAPHY: STEVE JONES

## WEEKEND WINNERS

## RACE OF REMEMBRANCE

**(377 laps) 1 Williams Motorsport (Toby Ballard/ Calum Lockie/Rrutuj Patki/Henry Williams – Caterham 270R);** 2 DBR Racing (Rob Kennerley/ Darren Burke/Ben Timmons – Caterham 270R) +49.962s; 3 Brake Dancer Racing (Daryl Cresswell/ Tim Steel/Allan Curtis/Wes Payne/Paul Hearnden/ Harry Eyre – Caterhams); 4 Paul Sheard Motorsport (Oliver Cottam/Adam Zieba/Ben Taylor – Mazda MX-5 Mk3); 5 TSW (Sebastian Fisher/Oliver Graham/Michael Green – Mazda MX-5 Mk1); 6 JRW Motorsport (Connor Blackburn/Sean Reynolds/ Zachary Lucas – Ford Fiesta ST180). **Class winners** Brake Dancer Racing; TSW; Tequila Racing (Chris Knight/Anis Suterwalla/Alex Martin/Chris Fellows – Mazda MX-5 Mk1); JTM Engineering (Samuel Carrington-Yates/Peter Ormerod/Alan Corfield/ Harry Ormerod – BMW 116i); RABSport Racing (Gary Mitchell/James Hitchen/Michael Jenkins – Citroen C1); Autobliss (Stuart Bliss/Andrew Dyer/ Dominic Fletcher – Toyota Aygo). **Fastest lap** Williams Motorsport 1m38.122s (77.04mph). **Pole** Williams Motorsport. **Starters** 45.

## CLUBSPORT TROPHY

Rob Phillips (Honda Civic, below)



For full results visit: [tsl-timing.com](http://tsl-timing.com)

and down and, despite coming to the race under-prepared, we were in with a chance.”

Lockie had to serve a stop/go penalty, which brought Burke onto the same lap. The gap reduced further but, after 377 tours, Lockie held on to secure victory for Williams Motorsport by just 49.962 seconds over DBR. “My job was to stay on, manage the gap and stay cool,” said Lockie.

The Brake Dancing Caterham sextet was third and top relay team finishers, with Cottam/Adam Zieba/Ben Taylor’s relay MX-5 fourth for Paul Sheard, as Fisher/ Graham/Michael Green took fifth with a class win. JRW’s Lucas/Blackburn/Reynolds completed the top six, while Tequila Racing’s MX-5, JTM’s BMW 116, RABSport’s Citroen C1 and AutoBliss’s Toyota Aygo were also class winners.

With Chris Slator’s BMW M3 retiring from the lead of the Clubsport Trophy mini-enduro support race at the mandatory pitstop, George Wright’s VW Golf headed home Rob Phillips’ Honda Civic and the Huggins’ Lotus Exige, but Wright was later excluded for a flag infringement, handing Phillips the win.

PETER SCHERER



**2CV’s LATEST ENDURO** It had contested the Classic Sports Car Club’s 24 hours at Anglesey and run in the invitation class of the 2CV Spa 24, so Crisis Racing decided to give its 1150cc bike-engined Citroen 2CV a Race of Remembrance debut. Louis Tyson joined regular drivers Nick Roads and Nick Crispin as they took 39th. “We had to change two engines and two gearboxes before qualifying,” said Crispin. Roads added: “We had the 2CV ’box and it struggled to handle the extra power from the BMW engine.”



**RODDISON’S RELIABILITY WOES** Paul Roddison had previously contested this race with ex-British Touring Car drivers Rob Austin and Dan Welch, and the trio were back to share Roddison’s ex-VW Cup Scirocco. “We had all sorts of problems in testing and failed to set a time in qualifying,” Roddison explained. “We sent out for spares and hoped to make the grid for the start.” They ended up joining late, yet were up to 13th after six hours, but lost a wheel on Saturday evening and it was all over.



**RICH PICKINGS FOR SPORTSCAR DRIVERS** International sportscar racers Alex Kapadia and Martin Rich made their event debuts when they shared Stuart Humphrey’s Mazda MX-5 Mk3, along with Marcus Jewell, and finished ninth. “I coached here, but never drove the circuit – a very entertaining weekend though and loads of fun,” said Kapadia. Rich added: “I had never been to Anglesey. It was cheaper than Le Mans, the car was great and I have never been so close to an inflatable shark.”

# ROOKIES CLIMB TO THE FRONT

*Dan Harper and Darren Leung formed a partnership in British GT3 that proved championship worthy*

STEFAN MACKLEY

PHOTOGRAPHY JEP  **motorsport**  
IMAGES

Century BMW's crew  
belied limited experience

“It was a big choice from him because he could have had a lot more experienced factory drivers, but in the end he went with me, gave me the opportunity and I think his trust in me just grew and grew.”

Dan Harper's name might have been one unfamiliar to some readers prior to this season, the 2019 Porsche Carrera Cup GB champion having plied his trade successfully in Europe over recent years, which led him to becoming a BMW factory driver. But put alongside Am driver Darren Leung aboard Century Motorsport's BMW M4, Harper took British GT3 by storm and the pair took the title in their first season in the championship.

The achievement was made even more impressive by Leung having only made one GT3 appearance before 2023, winning on his debut at last season's Donington Park season finale, while 22-year-old Harper had never worked directly alongside an Am driver. And yet their partnership gelled from the beginning and was the foundation for their success.

“It was my first year working in a Pro-Am pairing and having the responsibility of not only developing the car for the team but also developing Darren,” says Harper. “Also, I hadn't raced on the UK circuits since 2019 so there were a lot of things that needed to click; but as soon as they did, I would say around the mid-point of the year, then we didn't finish one race outside the top six. So that was putting us in the right place and then the last weekend just worked out.”

During that weekend at Donington Park both Leung and Harper put in arguably their best drives of the season when it mattered

most, having headed into the event 13 points behind in the standings. Leung led from pole, only for safety cars to negate his lead, which dropped Harper down to 13th after the pitstops. But the Northern Irishman scythed his way up the order to an incredible second by the flag, which was more than enough for the title.

It was reminiscent of his drive during the three-hour race at Silverstone earlier in the year, where a washed-out qualifying meant the pair started 18th – times having been taken from FP2, when they suffered mechanical issues. Overtakes on title rival Jonny Adam and then race leader Sandy Mitchell in the final stint – two former champions in British GT, no less – underlined Harper's prowess.

But the season wasn't without its blips, Harper being on the receiving end of penalties on two occasions. Overtaking Jules Gounon before the start/finish line on a safety car restart cost a possible podium in the opening Oulton Park race, while another rostrum went begging at the Algarve Circuit. On that occasion the BMW driver had overtaken cars exiting the pits under a safety car, which dropped the car to fifth at the flag.

“In a Pro-Am pairing the pressure's always more on the Pro because he's expected to do his job, and I think both those incidents were my mistake and obviously that wasn't a nice feeling for me,” admits Harper. “But again, that's where Darren and the team were just so good. They could have been annoyed with me, they could have made the situation a whole lot worse, but we just cracked on with it.”

Aside from briefly taking the lead in the standings after their



## GT3 DRIVERS' CHAMPIONSHIP TOP SIX

POS	DRIVERS	TEAM	CAR	PTS
1	Dan Harper/Darren Leung	Century Motorsport	BMW M4	176
2	James Cottingham	2 Seas Motorsport	Mercedes-AMG	163.5
3	Jonny Adam	2 Seas Motorsport	Mercedes-AMG	162
4	Sandy Mitchell/Shawn Balfe	Barwell Motorsport	Lamborghini Huracan EVO2	144
5	Ian Loggie	2 Seas Motorsport	Mercedes-AMG	134.5
6	Jules Gounon	2 Seas Motorsport	Mercedes-AMG	122.5



Cottingham was the benchmark Am driver, strong in qualifying

**“THE PRESSURE’S ALWAYS MORE ON THE PRO BECAUSE HE’S EXPECTED TO DO HIS JOB”**

Silverstone victory, Leung/Harper were forced to play catch-up to Adam and James Cottingham over the nine-race season. The 2 Seas Mercedes-AMG pairing hit the ground running with pole and victory in the Oulton opener, with further wins on the first visit to Donington and at Portimao.

Key to their success were strong qualifying performances, with Cottingham topping his Am session no fewer than three times from a possible six, while Adam helped “break things down for me really well, [and] focusing on the important parts”.

“Once you start from the front row of the grid, it does make the weekend a hell of a lot easier – that is the first win of the weekend,” says Cottingham on his second full-time season in British GT. “The tracks are narrow and it’s hard to pass in these GT3 cars, especially with the Ams. You don’t know how they’re going to behave or react. You’ve almost bagged points by being on the front row of the grid.”

Yet like Harper there were penalties for Cottingham, which proved pivotal. A collision with a GT4 car cost them a podium at Silverstone, while a front-row start in the opening Snetterton race was lost after an incident with another GT4 runner in practice.

More dramatic was overtaking under yellow flags in the Donington decider that dropped the car out of the points, although Cottingham believes that, even without the penalty, winning the title was a tall order. “When you really watch it, multiple overtakes around the outside of hairpins [by Harper]. That just doesn’t happen normally,” he says. “I think a lot of these championships not only come down to the penalties but it’s good management of the pace of the car and I think they did a fantastic job of managing the pace of that car this year.”

Elsewhere, sustained opposition failed to materialise, with reigning champion Ian Loggie and team-mate Gounon in the sister 2 Seas Mercedes only able to win a torrentially wet second Oulton Park race. Raffaele Marciello and John Ferguson in the RAM Racing Mercedes lacked consistency, with the latter’s firm defensive drive giving them a sole victory at Snetterton. And Barwell Motorsport drivers Mitchell and Shaun Balfe took time to adapt to the new uprated version of the Lamborghini Huracan, winning at Snetterton and the Donington finale. 🏆

## AUTOSPORT’S TOP FIVE GT3 DRIVERS



DAN HARPER

**1** The revelation of the season in his maiden British GT campaign, and at times made the likes of Mercedes factory drivers Jules Gounon and Raffaele Marciello look ordinary. Brilliant race-winning overtakes at Silverstone and Brands Hatch were eclipsed by a comeback drive at the Donington Park decider that was worthy of a champion.



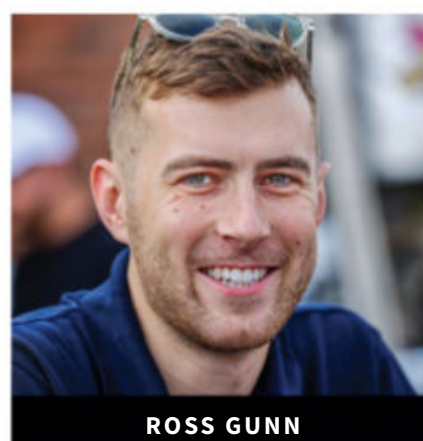
JONNY ADAM

**2** Brought best out of team-mate James Cottingham as experience blended with pace put them on cusp of title, having finished outside the points just once. ELMS commitments meant he missed Donington Park finale, but absence likely would not have altered final standings given outright pace of Century BMW.



SANDY MITCHELL

**3** Went under the radar as one of the best Pros in the championship, as overall results were sometimes lacking. Cruised to Snetterton 1 win after co-driver Shaun Balfe led from pole, with alternative strategy putting him in prime position for Donington Park finale victory after passing Marcus Clutton.



ROSS GUNN

**4** Beechdean Aston Martin Vantage driver should have walked away with *at least* one win. Lost chances included team-mate Andrew Howard not attaching safety net properly at Donington 1, penalty for a short pitstop in Snetterton 2 and being baulked by a backmarker at Brands Hatch.



JAMES COTTINGHAM

**5** Pips Darren Leung to final spot for having generally been the benchmark Am driver. Took three wins alongside Jonny Adam – more than any other pairing – and showed great tenacity in pursuit of win at Snetterton 2 and Algarve, falling just short in the former. Silverstone misdemeanour led to only non-score, proving crucial.

SEASON REVIEW

# ACADEMY PAIR GRADUATE WITH FIRST

*A late surge in pace and results allowed Matt Cowley and Erik Evans to take top spot in British GT4*

STEFAN MACKLEY

PHOTOGRAPHY JEP  **motorsport  
IMAGES**

At the fourth time of asking, the combination of Academy Motorsport and Matt Cowley finally prevailed to take the British GT4 drivers' title in 2023, alongside championship newcomer Erik Evans. But while Cowley and Academy Motorsport have been title contenders before, finishing second in 2021, their outright success this term was unexpected given a lack of performance and results at points during the season.

It took until the penultimate round at Brands Hatch before Cowley and Evans even stood on the top step, and an unlikely victory in the season finale at Donington Park – Cowley having remarkably climbed from 10th to first – sealed the title after overturning a 16.5-point deficit. “Even though the car wasn’t necessarily competitive to be at the front in the middle of the year, we were still fighting to gain as many places as we could,” says Cowley. “I think that difference in points is what really helped us still be in with a shot going into the last couple of rounds.”

The late upturn in form coincided with more favourable Balance of Performance changes for the team’s Ford Mustang – in its final season of racing in 2023 – while Evans was getting to grips more with the car. The young American had made only one appearance last season in British GT and was given most of the running during test sessions “to bring him up to pace”, according to Cowley. It showed at Brands, as after qualifying a season’s best fifth in his session and starting third on combined times, Evans avoided first-corner trouble to lead during his stint and pave the way for the crew’s victory.

The season had started well with a runner-up finish at Oulton Park, where Academy claimed a 1-2 with team owner Matt Nicholl-



Cowley/Evans took title on Mustang’s swansong

“WHEN I WAS SAT THERE AND THE SCREEN WENT BLANK, I KNEW IT’S JUST NOT MEANT TO BE”

Jones and Will Moore leading home after the team gambled for slick tyres on a damp track at the start. A second rostrum came in the three-hour Silverstone race as Cowley/Evans recorded three further points finishes, but the low point came mid-season at Snetterton. An altercation between Evans and Michael Crees post-race meant the Academy car was disqualified from both race results, although the car had finished outside the points both times.

If Cowley/Evans’s rise to clinch the title had been remarkable – at one stage being 58.5 points in arrears – then the fall of pacesetters Charles Clark and Jack Brown was just as unlikely. Aboard Optimum Motorsport’s new-for-2023 McLaren Artura, the duo hit the ground running with wins at Silverstone and Snetterton 2, along with two runner-up finishes. “It wasn’t what I was expecting in such a competitive year,” says Clark, the Porsche Sprint Challenge driver following in his father Steve’s footsteps into British GT. “I thought it would be nice to have a couple of podiums here and there and maybe a couple of pole positions, but I didn’t think we’d be fighting for the overall championship coming into the last round.”



GT4 DRIVERS’ CHAMPIONSHIP TOP SIX

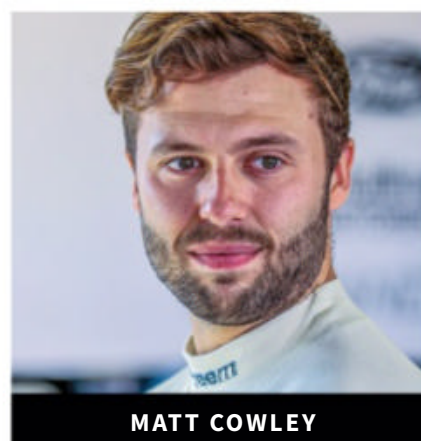
POS	DRIVERS	TEAM	CAR	PTS
1	Matt Cowley/Erik Evans	Academy Motorsport	Ford Mustang	145.5
2	Charles Clark/Jack Brown	Optimum Motorsport	McLaren Artura	124.5
3	Ian Gough/Tom Wrigley	Race Lab	McLaren Artura	117.5
4	Michael Johnston/Chris Salkeld	Century Motorsport	BMW M4	117
5	Josh Rowledge/Aston Millar	DTO Motorsport	McLaren Artura	111
6	Carl Cavers/Lewis Plato	Century Motorsport	BMW M4	106.5

## AUTOSPORT'S TOP FIVE GT4 DRIVERS



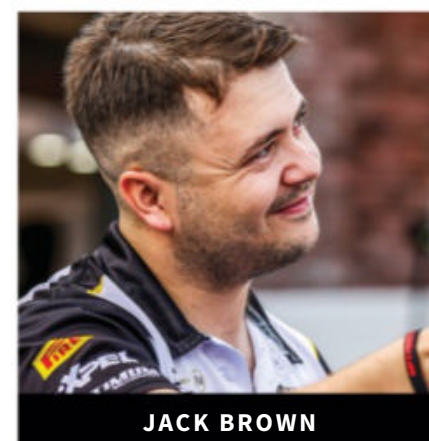
CHARLES CLARK

**1** Three fastest times from opening three qualifying sessions underlined his pure speed. Led at Oulton Park 2 and hunted leader Tom Wrigley down in Donington Park 1, only to be denied wins both times by compensation penalties. Slight blot came after passing Evans for second on final lap at Oulton 1 before spinning.



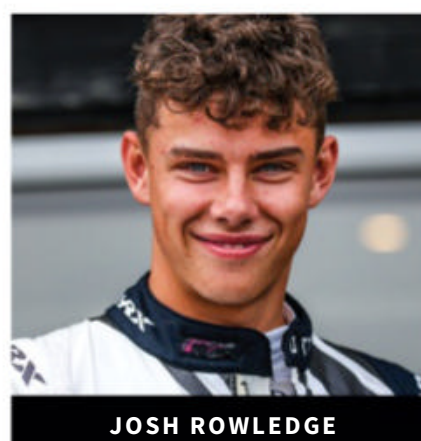
MATT COWLEY

**2** Sacrificed track time to boost performance of team-mate Evans as he used his wealth of British GT experience to maximise results when outright pace was lacking. Came to the fore at Brands Hatch after losing spots in pitstop, and climb up the order at Donington Park finale showcased his true potential en route to title.



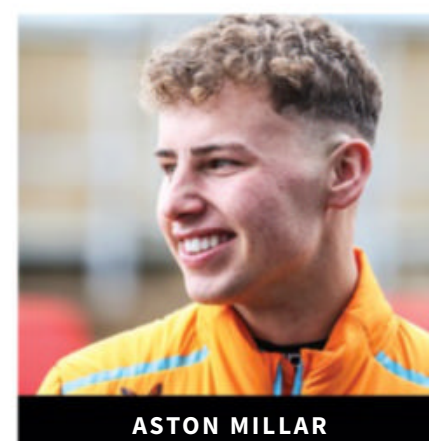
JACK BROWN

**3** Dominated first half of the season with Clark and Optimum McLaren, recovering from third to win Snetterton 2 after Clark hit into spin. Blameless in the Portimao collision that crippled car as reliability problems outside his control at Brands Hatch and Donington 2 ultimately cost the pair the title.



JOSH ROWLEDGE

**4** The 2022 Ginetta Junior champion was impressive on his and DTO Motorsport's debut in British GT. Patiently waited for opening to pass Freddie Tomlinson for the lead in Donington 1 before mechanical issue denied best shot at victory. Four podiums showcased consistency and maturity from the teenager.



ASTON MILLAR

**5** Almost nothing to choose between Millar and team-mate Rowledge over the season. Lost likely Oulton Park 1 podium after pitting too early and was in prime position at Donington 1 before car issue. Recovered well for second in Snetterton 2 with damaged car. Millar and Rowledge deserved at least one win from the season.



Such was the dominance of the Clark/Brown/Optimum combination that they had a mathematical chance of clinching the title at Portimao, race seven of nine, before an incredible run of unfortunate events. Brown was hit from behind in Portugal, which damaged the car as it limped to ninth in the final order, while at Brands Hatch a coolant pipe came undone, sending the McLaren into a spin on its own fluid and retirement.

At the Donington decider and still with a 10.5-point lead, Brown had been running fifth – more than enough for the title – but a freak battery failure at the pitstop meant the car would not restart. Once it had finally fired back up, Clark had lost a lap and with it any chance of the title. “It [the battery] had never failed like that before throughout the 15,000km we did this year, it hadn’t failed once,” says Clark. “When I was sat there and the screen went blank, I just knew it’s just not meant to be this year.”

Also in contention heading into the final round was the Century Motorsport BMW M4 of Chris Salkeld and Michael Johnston. The duo had taken victory in Portugal and two third places at Snetterton 1 and Brands. They had even led the standings and were provisional champions at one stage in the final Donington stint until Cowley's charge up the order, which marked a fitting end to Academy's association with the current model of Mustang after several years of coming so close.

“Previous years we’ve won races, been in the fight for the championship before,” says Cowley. “We’ve come close but just never really had that luck when we needed, whereas this year we had that little bit of luck on our side.”

# FINISHING STRAIGHT

## Knitting together the story of a maverick F1 team

Benetton in its  
pomp brought a  
dose of drama and  
disruption to F1

motorsport  
IMAGES



### BOOK REVIEW **BENETTON: REBELS OF FORMULA 1**

Damien Smith  
RRP: £60

Formula 1 is a sport  
that has historically  
been dominated

by both automotive manufacturers  
and independent teams with a strong  
motorsport background. Obviously, an  
exception to this is Red Bull, with the  
energy drinks company shaking things  
up and currently enjoying a second  
dominant spell, with Max Verstappen.

But looking further back, we come to  
Benetton. Like Red Bull, the clothing brand  
entered F1 initially as a sponsor before  
deciding to up the ante by purchasing a  
team. The comparisons to the current  
pacesetters don't end there, with Benetton  
very much wanting to do things their own  
way even if certain decisions caused  
eyebrows to be raised both within and  
outside of the outfit. This maverick attitude  
also extended to pushing the regulations to  
the limit, something that would lead to

questions being raised as to whether  
boundaries had been crossed or  
simply reached.

While *Benetton: Rebels of Formula 1* is  
not a warts-and-all telling of the story  
and certainly leaves a feeling that some  
aspects are still left hidden under  
the carpet, it does acknowledge and  
delve into some of the accusations.

The 1994 season is of particular note,  
most famous for two weekends – the  
San Marino Grand Prix that saw  
the deaths of Roland Ratzenberger and  
Ayrton Senna – and the Australian GP,  
where Michael Schumacher secured  
his and Benetton's first title.

But this season was far more complex  
for Benetton, with controversy surrounding  
a rescinded black flag for Schumacher at  
the British Grand Prix and the discovery  
of a potentially illegal launch control  
system just two instances of unwanted  
headlines in what was ultimately one  
of the team's most successful years.

While there are some editorial choices  
made in *Benetton: Rebels of Formula 1*, the  
book largely stands on quotes from key  
personnel from the lifespan of the team.

This extends back to Benetton's time  
as a sponsor of Tyrrell and Alfa Romeo,  
but also encompasses the history of  
Toleman, the team that would eventually  
be bought by the clothing brand.

Again referring to the 1994 season upon  
which a lot of Benetton's future hinged,  
there is a notable quote from then Benetton  
head of research and development Pat  
Symonds, who suggests that then team  
principal Flavio Briatore's pointed letter  
to Max Mosley over changes made to the  
cars in the wake of the Imola weekend set  
the path for the 2008 'Crashgate' scandal,  
when the team was known as Renault.

While there is a lot of time devoted to  
the early years building the team and the  
successful period with Schumacher, the  
post-championship-winning era is left  
as a mere footnote in the book. This is a  
shame because so much time is given to  
the period between 1981 and 1995, but it  
feels like much of what happened in the  
subsequent years has been left unsaid.

Like this review, there is much focus  
on the 1994 and 1995 seasons, which one  
would expect given that title-winning years  
are the ones that F1 fans will often look for



SUTTON/MOTORSPORT IMAGES

TEE/MOTORSPORT IMAGES

immediately in the contents page.

The history of Toleman was a nice surprise and this goes into detail about the hiring and subsequent falling out with Ayrton Senna in 1984, with the decision to red flag the Monaco Grand Prix – one that possibly denied the Brazilian an unlikely maiden victory – given plenty of coverage.

What *Benetton: Rebels of Formula 1* does extremely well is cover the rise of Benetton as a force in the championship, with genuinely engaging interviews that take the reader behind the curtain and into the boardrooms and garages. If you want to know more about the fall of this once title-winning and rebellious team, however, that thirst will be left wanting by the time you turn the final page.

**SAM HALL**

● Author Damien Smith will be taking part in the inaugural Porter Press Motoring Literary & Art Festival at Silverstone in *The Wing* over the weekend of 2–3 December 2023. On Sunday 3 December, at 15.30 in Theatre 2, he will talk about his newly published *Benetton: Rebels of Formula 1*. **For more event details, go to [www.motorlitartfest.co.uk](http://www.motorlitartfest.co.uk)**



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



JEP/MOTORSPORT IMAGES

**BTCC and TOCA review of 2023**

The British Touring Car Championship season threatened to become a one-horse race at times in 2023, such was the searing speed of Ash Sutton and his Motorbase Performance/Alliance-run Ford Focus ST. But reigning champion Tom Ingram kept it just about alive right up to the final weekend, before he was forced to hand his crown back to fourth-time winner Sutton.

And TOCA's support classes were once again thrilling to follow. With no Ginettas competing for the first time since 2007, there was a different feel to the support bill this year, but still plenty of impressive displays from the protagonists of the British Touring Car Championship's undercard. Reviewing all this on the podcast this week, Martyn Lee is joined by Marcus Simmons and Stephen Lickorish.



WHAT'S ON

INTERNATIONAL  
MOTORSPORT

**Las Vegas Grand Prix**  
**F1 World Championship**  
**Round 21/22**  
Las Vegas, USA  
**18 November**  
**TV Live** Sky Sports F1, Sun 0555  
**TV Highlights** Sky Sports F1, Sun 1245, Channel 4, 1230

**Formula 3 Macau Grand Prix**

**Round 1/1**  
Guia Circuit, Macau  
**18-19 November**  
**TV Live** Motorsport.tv, Sun 0725

**FIA GT World Cup**  
**Round 1/1**  
Guia Circuit, Macau  
**18-19 November**  
**TV Live** Motorsport.tv Sun 0400

**Rally Japan**  
**World Rally Championship**  
**Round 13/13**

Chubu region, Japan  
**16-19 November**  
**TV Live** TNT Sports 1, Thurs 1000, 2200, TNT Sports 2, Fri 0430, TNT Sports 1, 1030, TNT Sports 3, 2300, Sat 0000, 0200, TNT Sports 1, 0345, 0500, 0600, 1030, TNT Sports 4, 2200, 2300, TNT Sports 1, Sun 0200, 0500 BT Sport 1, Sat 0000, BT Sport 4, Sat 0000, BT Sport 1, Sun 0000  
**TV Highlights** TNT Sports 2, Fri 1915, TNT Sports 3, Sat 1800, Sun 1500, Red Bull TV, Fri 1300, Sat 1300, Sun 1300

**MotoGP**  
**Qatar Grand Prix**  
**Round 19/20**  
Losail, Qatar  
**19 November**  
**TV Live** TNT Sports 2, Sat 1630, Sun 1630  
**TV Highlights** ITV4, 2000





# Pau

It's 19 years since Jamie Green last raced at Pau on his way to winning the Formula 3 Euro Series title. He only competed twice on the sinuous French streets, but a circuit he regards as "like a minefield really" left a lasting impression.

Its unique challenge is a large part of the Briton's rationale for choosing Pau as his favourite track, but there's strong personal justification too. On the weekend of his Euro Series debut in 2003, also his first outing with a Mercedes engine after signing a junior contract with the marque, Green came away with a strong third. The following year he won, in highly unusual circumstances.

"There was such a fine line between success and failure," reflects the 41-year-old. "It was very bumpy, there were a lot of crests and crowns in the road around that park section at the back and into that monument chicane. That was a massive challenge."

His first outing filling in for an injured Bruno Spengler at ASM was an eye-opener for Green, who credits engineer Guillaume Capietto with helping him

to quickly learn the ropes and make a "good start to my Mercedes racing career". "It's [got] a lot of nuances to it and bumps and kerbs that you need to know about," he remembers. "There's a lot of white lines and zebra crossings, so it's easy to lose control."

In 2004 Green followed team-mate Alexandre Premat to the flag in the damp opener before finishing third in race two. But Premat's race two crash under yellow flags resulted in his exclusion from the entire event, retrospectively handing the race one win to Green.

The Pau Grand Prix has lost some of its lustre in recent years, with this year's event held for French Formula 4. Green laments that fewer up-and-comers have a chance to test themselves on its challenging streets.

"There's bits of it where you've literally got your inside wheels on the grass at the chicane, driving over the pavement, probably in fourth gear," he says. "There was certainly an art to that, and a huge amount of bravery required. There's not many circuits that are like that."

**JAMES NEWBOLD**



## Las Vegas GP

F1 RETURNS TO NEVADA AFTER 41 YEARS



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# ENGINEERING

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## TOURING CAR RACING'S ELECTRIC FUTURE

We try out the STCC's trailblazer as it becomes the first national tin-top series to fully electrify



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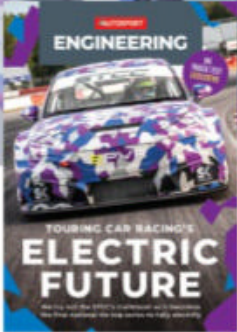
# SCANDINAVIA'S BOLD VISION FOR AN ELECTRIFIED FUTURE

**I**t's been a mixed year for electric racing series. The year began with the FIA's ETCR – eTouring Car World Cup being abandoned when its promoter Discovery Sports Events stepped down, citing difficulties in finalising a new sporting and regulatory framework that meets the needs of its manufacturer entrants. The FIA World RallyCross Championship concluded last weekend in Hong Kong with its one-make R2Xe support series cars pressed into service once more as the RX1e cars have been parked since a fire at Lydden Hill at July interrupted the campaign. And plans to begin the Scandinavian Touring Car Championship's new electric era this year were repeatedly delayed by supply chain issues before being postponed.

But encountering hurdles is no reason for electric pioneers to give up. Formula E

celebrates its 10th birthday next year, and EV technology is more user-friendly than a decade ago. That's why the STCC's move to become the first national tin-top series to switch to electric power in 2024 could not only be well-timed but may prompt others to follow suit. To get a better feel for what the STCC is trying to do, we sent Alexander Sims to drive its PWR002 at Mantorp Park (p10), and he's impressed with what he found.

Another technology battleground in the coming years is hydrogen, and ORECA technical director Remi Taffin reveals how the French company is marking its 50th anniversary by scaling up to meet new challenges (p9). ORECA's birth in 1973 was three years after the Lotus Type 66 was supposed to make its debut in Can-Am. Stephen Lickorish details how it has finally made it off the drawing board 53 years on (p22).



**COVER IMAGE**  
Anders Helgesson/  
STCC

ANDERS HELGESSON/STCC

4	<b>NEWS</b> <b>Industry update</b> The latest developments in the world of motorsport engineering
7	<b>DRIVING CHANGE</b> <b>Lucas di Grassi</b> Our regular columnist on what we can infer from F1's 2026 engine rules
9	<b>ENGINEER'S VIEW</b> <b>Remi Taffin</b> ORECA's technical director reveals how the company continues to grow at 50
10	<b>STCC TRACK TEST</b> <b>Autoport tries the PWR002</b> Alexander Sims visits Mantorp Park to try the test mule for STCC's EV switch
16	<b>MASERATI GT2</b> <b>Under the skin of the new Trident</b> The new GT2 car Maserati hopes will be the spiritual successor to the MC12
18	<b>F1'S NEW ENGINE RULES</b> <b>Changing the tune for 2026</b> Digging into the key changes and tech battlegrounds for the new ruleset
22	<b>LOTUS TYPE 66</b> <b>Brought to life after 53 years</b> How a long-forgotten concept car finally made it off the drawing board
26	<b>BE AN ACE ENGINEER</b> <b>John Judd</b> The designer of winning engines for over 60 years shares career top tips



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# HYDROGEN CLASS INTRODUCTION AT LE MANS SET FOR DELAY TO 2027

Plans for 2026 are “not realistic” according to the ACO

Plans for hydrogen-powered prototypes to race at the Le Mans 24 Hours and in the World Endurance Championship are set to be delayed by a further year. Pierre Fillon, president of Le Mans organiser and WEC promoter the Automobile Club de l'Ouest, has stated that he believes the new target of 2026 outlined at June's edition of the French enduro now looks increasingly impractical.

“It is not realistic [for 2026],” he said. “We have to spend some time on the safety, and it is longer than we expected. I think 2027 is more realistic.”

Hydrogen fuel cell prototypes were originally

slated to be allowed at Le Mans from 2024 with a one-make chassis co-developed by Red Bull Advanced Technologies and ORECA, though this was subsequently pushed back to 2025. The ACO and the FIA then updated their plans, announcing that internal combustion-engined prototypes powered by hydrogen would be allowed to race against fuel cell machinery from 2026. The idea is that hydrogen cars will be able to compete for overall victory against Hypercar-class entrants.

Toyota's announcement of its intent to compete at the pinnacle of endurance racing with

a combustion-engined hydrogen prototype and the unveiling of a mock-up of a development car

known as the GR H2 effectively meant that ideas for a one-make chassis have been abandoned, though this has yet to be formally confirmed.

Plans for a third-generation MissionH24 prototype were unveiled last month. The car, still yet to be named, is being developed around a chassis built by ADESS and is set to race in 2025. It has been designed, like its predecessor known as the H24, to compete in the European Le Mans Series-supporting Le Mans Cup. Fillon explained that it could also enter the ELMS, but that there are no plans for it to fill the Garage 56 grid spot at Le Mans reserved for experimental cars. He added: “The target for the H24 is to have the same performance as GT3 – we are not a manufacturer.”

**GARY WATKINS**



## EV SINGLE-SEATER SERIES REBRANDS AS FORMULA G, ANNOUNCES 2024 PLANS

The electric ACE Championship first revealed in February has been relaunched as Formula G, with plans for races in four regions from late 2024.

Headed by former Mahindra Formula E team boss Dilbagh Gill and ex-Formula 1 driver Nick Heidfeld, Formula G plans to race on the support bill of existing combustion and electric series.

Its inaugural season will comprise four distinct regional championships, all featuring 10 team franchises. Each of the four championships will be further

divided into two paths, one catering for professional drivers and the other for junior racers.

This is made possible by the car, dubbed the FG-ETwin, having the capability to be run in two power modes. Professional racers will be able to exploit the car's full potential in what will be known as the FG-1 championship, while the same machine will run on reduced power in the FG-2 series for younger drivers.

The idea behind the dual-power approach is to reduce costs by enabling teams to use



DANIEL SIMON

the same crew to run the car in two races with different drivers.

When the ACE series first broke cover prior to the Hyderabad E-Prix, organisers showcased a car that had visual similarities to

FE's Gen2 machine. However, FG said it has secured contracts and suppliers to build a new car that features a shark fin, which wasn't present on the ACE prototype.

**RACHIT THUKRAL**

New Merc trackday weapon will have push-to-pass



MERCEDES-AMG

## MERCEDES ADDS PUSH-TO-PASS TO NEW TRACKDAY MODEL

Following Maserati's launch of a trackday special that shares an engine with its GT2 racing cousin earlier this year, Mercedes-AMG has followed suit with a limited-edition machine that unlike its racing version is equipped with push-to-pass.

Called the Mercedes-AMG GT2 PRO, the non-homologated trackday car has the same basic output of 707bhp as its GT2 counterpart that was launched last year. But the upgraded machine's four-litre V8 engine can reach 750bhp when the boost button is pressed.

The GT2 PRO broke cover earlier this month

and can be modified for racing in the SRO-run European Series for pro-am pairs, with parts carried over including a sequential six-speed racing gearbox, racing ABS, traction control, safety features and adjustable four-way shocks.

Acknowledging that "demand for pure trackday cars has increased significantly", head of Mercedes-AMG Motorsport Christoph Sagemuller hailed the car as "the next milestone in the customer sports segment". It will cost €479,000, a fee that also covers bespoke Puma racewear and a Bell helmet.

## GIBSON'S LMP2 ENGINE SUPPLY DEAL EXTENDED

British engine builder Gibson Technology will remain the sole supplier in LMP2 sportscar racing when the next generation of chassis comes on stream in 2026.

The FIA announced last month that the Repton firm had won its tender to provide the engines for a five-year period from the start of the new rules cycle. The powerplant will be a 4.2-litre normally aspirated V8, the same configuration as the spec GK428 unit it has supplied for the current LMP2 formula that began in 2017.

Gibson's engine will power chassis from the existing four suppliers in LMP2 – ORECA, Dallara, Ligier and Multimatic – whose licences were extended in January 2020.

LMP2 will disappear from the World Endurance Championship next year, but will continue in the IMSA Sportscar Championship as well as the European and Asian Le Mans Series. A minimum of 15 entries from these series will be invited to contest the Le Mans 24 Hours in June.

GARY WATKINS



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## AI-ADAPTED SUPER FORMULA CARS TO RACE IN 2024

An inaugural race for Dallara-built SF23 Super Formula cars converted to be run without human input will be staged in Abu Dhabi next spring. The new Abu Dhabi Autonomous Racing League presented its vision for the event, which will be contested by 10 university teams at the Yas Marina Circuit on 28 April 2024, at last month's GITEX tech show in Dubai.

The venture promoted by ASPIRE, the operations arm of Abu Dhabi's Advanced Technology Research Council, will join the Indy Autonomous Challenge for Indy NXT cars also built by Dallara that began in 2021 on the growing AI racing scene. The so-called A2RL is intended to become an annual event.

ATRC secretary general Faisal Al Bannai said the competition would be "a premier testbed for trialling proof-of-concept autonomous solutions" by "actively stress-testing capabilities on the race tracks, for safety on our roads".

Teams heralding from North America, Asia, Europe and the Middle East will compete for a prize purse of \$2.25million at the Formula 1 venue with their customised software packages.

## IN BRIEF



## AVL'S H2 ENGINE FIGURES

Austrian engineering company AVL's motorsport department plans to begin track testing the prototype of its hydrogen-powered racing engine after achieving encouraging power figures on the testbed. The first engine built under its own name, AVL RACETECH's two-litre turbo produced 410 horsepower, which it said correlated with figures projected in simulations.

## RENISHAW'S BREAKTHROUGH

Manufacturing technologies company Renishaw has revealed that its new patented scanning algorithm can reduce additive manufacturing build times by up to 50%. It says TEMPUS™ technology will remove up to nine seconds of build time from every layer without reductions in part quality, as its lasers can fire while the powder recoater is moving. It anticipates that the time and cost savings achieved will make AM viable for mass production applications.

## ANSIBLE'S NEXT STEPS

Ansible Motion and AB Dynamics are to fully integrate their Driver-in-the-Loop (DIL) vehicle simulation business following the former's acquisition last September. Ansible Motion's R&D and manufacturing headquarters in Hethel will be expanded, while founder Kia Cammaerts will continue as technical director.

## LATEST MUSTANG REVEALED

Ford unveiled a facelifted version of the Mustang that will contest the 2024 NASCAR Cup Series earlier this month. Based on the seventh generation 'Dark Horse', the revised Cup car coincides with the arrival of new GT3 and GT4-spec Mustangs. It succeeds the outgoing Next Gen model, which delivered back-to-back titles for Team Penske drivers Joey Logano and Ryan Blaney in 2022 and 2023.

New Mustang will defend Cup title won by Blaney







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## DRIVING CHANGE LUCAS DI GRASSI

# F1'S 2026 ENGINE CHANGES PUTS THE EMPHASIS ON ELECTRIC

A move to synthetic fuels and increasing the electrical power contribution for 2026 has generated great interest, but the new rules provide an indication of F1's priorities



A superior engine propelled Williams to the front following F1's last engine upheaval in 2014

**W**ith a freeze on power units until new rules arrive in 2026 and its emphasis on aerodynamics, Formula 1 is almost the exact inverse of the electric series I've raced in for the past decade. Formula E is all about powertrain efficiency, optimising a spec chassis with standard aerodynamics and none of the underfloor black arts. It's not perfect, but Formula E has shown that investing in powertrains rather than aerodynamics can result in exciting racing and be attractive to manufacturers.

Many predict that the 2026 rules could turn F1 into an engine formula and reduce the emphasis on aero. It's hard to know if that will be the case, but to me the changes represent more of a fine-tuning than a revolution since the 1.6-litre V6s will stay.

Adopting non-fossil fuels is a no-brainer, as biofuel or e-Fuels can be implemented without major modifications to current or future engines. Carbon neutrality is key and biofuel especially is already available at a competitive price, but it's unlikely ever to be used by passenger cars globally. Meanwhile, the electrical power output will almost triple from 120kW to 350kW. This will in turn mean using less fuel, with F1's target for cars to use only 70kg per race.

But it should be noted that the new V6

engines will be less efficient. Chiefly this is due to the removal of the expensive and unpopular MGU-H, which performs an important dual purpose. As well as recovering energy wasted through the exhaust, it prevents turbo lag, which is likely to be an issue for the new engines.

Compensating for this will either involve burning fuel through the braking phase or mean a bigger reliance on the electric motor for acceleration. At really high-speed tracks like Monza, simulations suggest that the combustion engine will effectively work as a generator that charges the batteries for the next straight and cars

Keeping the V6 and removing scope for divergence has allowed F1 to cap annual power unit spending at \$130m from 2026. But it seems there is no great desire on F1's behalf to push for more innovative combustion. Introducing a different architecture that results in improved efficiency would be a show of ambition, but instead it appears that F1 wants the combustion side to be fairly equal so teams can spend money on finding competitive advantages in other ways, especially on the electric side. F1 is trying to stay relevant to the electrical energy transition as OEMs invest in EVs rather than producing a better

## “As the freeze proves, the core appeal of F1 to manufacturers isn't developing engines”

may not be at their top speed by the end.

Engine efficiency is proportional to the ratio of compression in the chamber, so by also reducing this the engines will have less power – combustion output is expected to decrease by around 200kW – and efficiency too. Since combustion engines are already adapted to run biofuel, it's not like a real technology breakthrough will result either.

or more efficient combustion engine, which for me just proves that the way forward ultimately lies away from the ICE.

F1's rules shift has contributed to Audi, Honda and Ford (in partnership with Red Bull Powertrains) coming in for 2026, but Audi isn't justifying entering because the RS6 will have technologies developed from the F1 engine. It's more of a brand exercise than about a link to the consumer product. As the freeze proves, the core appeal of F1 to manufacturers isn't developing engines.

With the focus on the electric side, it would be interesting to see F1 open up to different engine configurations; heavier motors with fewer electric components and vice versa. Normally aspirated V10s and V8s would be less efficient on combustion, but the 2026 V6s will be lacking in this regard anyway. The only engine efficiency gain will come from the increased electric power output, but the next step to improve this comes from adding even more up to the point of going fully electric. And that's territory already occupied by Formula E. ■



Audi plans to enter F1 in 2026 with its own engine



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## ENGINEER'S VIEW REMI TAFFIN

### HOW ORECA IS BECOMING AN ENGINE POWERHOUSE

ORECA's group technical director and motorsport boss discusses the company's recent expansion as it celebrates 50 years in business, and lifts the lid on its hydrogen project



ORECA has a dedicated engine facility at Magny-Cours

**B**efore I joined ORECA in October 2021, my life was all about Formula 1. So although I knew ORECA as a team, from starting my career here in Le Castellet with Signature in Formula 3, I didn't have a great deal of insight into the company beyond the fact that its chassis were dominating LMP2 since 2017. Until I started discussions with Hugues de Chaunac in mid-2021, I had no clue on what ORECA was like on the inside or what it would become today.

Two years on, we can say it's a totally different company. The DNA is the same, but across the whole motorsport activity ORECA has expanded significantly and we're now twice as many people. Whether Hugues anticipated it would be that big, I don't know, but he was already clear from our first discussion that he would scale up from Ligue 1 to Champions League.

While continuing with LMP2, we have partnered on LMDh cars with Acura and Alpine. We took over the Ferrari 296 GT3 programme, with the engine division in Magny-Cours we've developed two hydrogen combustion engines and moved to strengthen our software development, plus the new manufacturing Technocentre in Signes is close to being completed.

It's fair to say that ORECA isn't as known for engines as it is for chassis construction, so we're trying to make it known that our engine division is at the same level. ORECA has accomplished a lot on the engine side, but it didn't always get the recognition that the race team or chassis did. We supplied the LMP3 cars' common engines, worked with Skoda on the Fabia R5, and entered Dakar several times. Now the hydrogen activity has really shown people what ORECA is capable of doing from scratch. We're trying to build on this, so potential customers understand that we have the capability to make a complete racing car.

**“The foundations were already in place and now we've raised the level again”**

Our initial aim was to have a hydrogen powertrain ready for Dakar 2024 but, although the L4 is running, the platform to receive it is not yet there. We also have some advanced H2 engine projects with OEMs that may cover most motorsport applications, but the technology for storage and distribution of hydrogen still needs

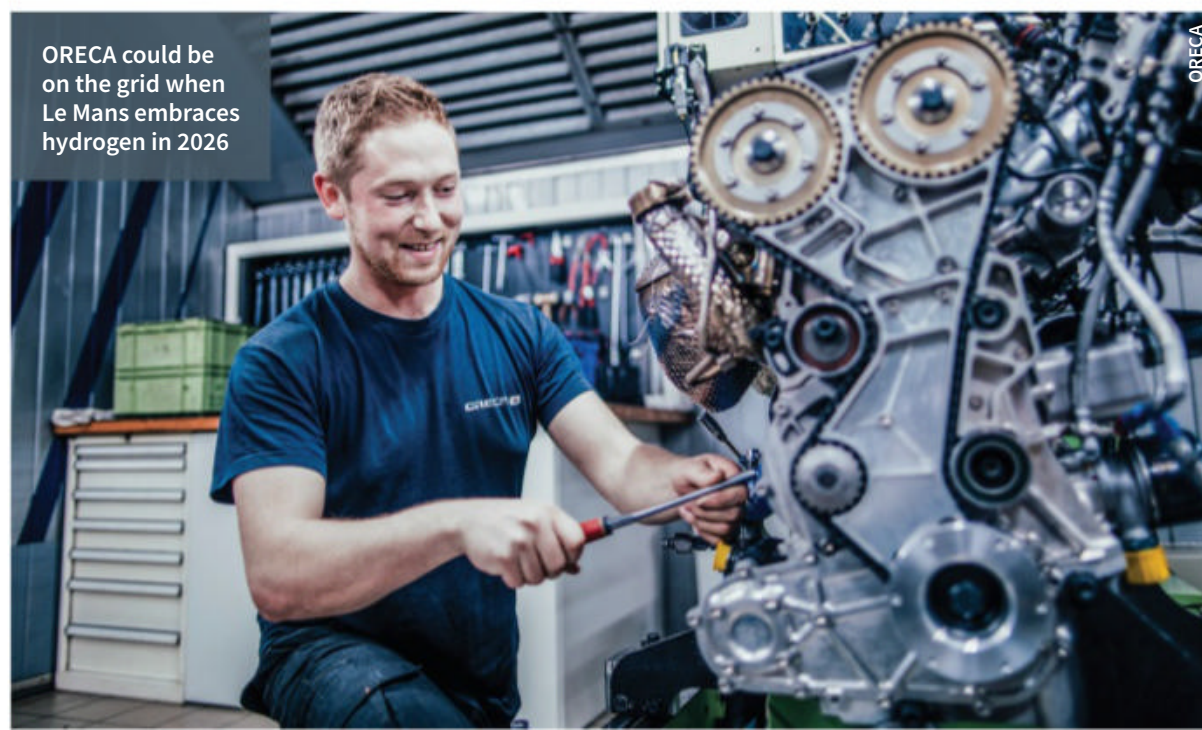
some work. Whether you store hydrogen in gas or liquid form, you need to have infrastructure and safety provisions in place which are not the work of a moment.

H2 cars will be eligible to race at the Le Mans 24 Hours from 2026, and it could be feasible to be on the grid for the first year. Clearly hydrogen is still an immature technology that requires a lot of investment and, even if ORECA is getting bigger, only an OEM these days is capable to put all this money on the table. We will need the support from a manufacturer to get into it for 2026 and we're in talks with different ones, but nothing has been signed yet. So

I can't say now that we will have a car in 2026 on the grid, but there is quite a lot going on to be able to do that.

After 50 years, Hugues has been trying to set up the company for the next half century, and having activities across four endurance racing categories gives us the right platform to develop into a manufacturer that is capable of making 100 racing cars per year. At the same time, we're not setting things up so that ORECA is only capable of making the same car 100 times with the same quality for the right price. We'll keep making cars in small volumes that will be capable of winning at Le Mans and Daytona because that's the main asset from ORECA; being capable of responding to different projects in motorsport and delivering good racing cars. It's the same story with engines.

The foundations were already in place and now we've raised the level again. There is still a lot to do, but there are good signs with customers coming to us, so I feel we're on the right way for the next 50 years. ■



ORECA could be on the grid when Le Mans embraces hydrogen in 2026



# UNPLUG AND PLAY

Embracing full electric cars for 2024 is a bold step for the Scandinavian Touring Car Championship, but one that has the potential to reap success

BY ALEXANDER SIMS

PHOTOGRAPHY ANDERS HELGESSON/STCC

**B**ecoming the first national championship to fully electrify is no small feat for the Scandinavian Touring Car Championship. The FIA's ETCR championship that fell over after just two seasons had manufacturer support, whereas in this case there isn't any input from manufacturers, so I'd say it is a bold leap to take. But as a fan of EVs, I was naturally curious about it, and when I was offered the opportunity to try out the STCC's test mule at Mantorp Park I jumped at the chance.

The prototype PWR002 is a converted TCR racer, but features all of the same equipment that next year's fleet of 12 410kW rear-wheel-drive cars will have. These will incorporate the original model's chassis and be fitted with electric motors and other spec components by EPWR, which is part of the same group as the PWR Racing team that has won four of the last six TCR Scandinavia titles with Robert Dahlgren. The Cupra Born, Tesla Model 3, BMW i4 and VW ID.3 are in build, although the latter currently doesn't have a team or drivers associated with it.

Having arrived at the track I was introduced to all the guys from STCC and EPWR, including Dahlgren and EPWR's technical leader Janne Ljungberg. Dahlgren will race the Cupra next year and helped out with the initial PWR001 that came out in 2018. But once the 002 came along and had its first demonstration run at Mantorp with Joel Eriksson last year, EPWR wanted to keep it a bit more separate and distanced itself for fairness to the competitors, so it's not like PWR has done all the development and will blitz everyone.

After watching some onboard video of the track to get an idea of how tight the corners were, and a run through of the controls from Janne, by 11am it was time to get out on track. I did two five- or six-lap runs – I apologise to Janne because I completely forgot to count what lap I was on in my first run! – which was enough to start getting a bit of a feel for the car.

The DTM Mercedes C-Class I drove in the 2008 McLaren Autosport BRDC Award evaluations was the only time I'd previously driven a touring car, but at the end of the day it's a rear-wheel-drive racing car with a roof over the top, so not too dissimilar to a GT car or a Porsche Cup car that I have driven before.

My only prior experience with an electric racer that wasn't clearly an ultra-refined Formula E single-seater, with 50 engineers working full-time ►





Sims enjoyed his runs in the lively PWR002

on the project, was the four-wheel-drive RX2e electric junior rallycross car. I got to drive it at Calafat last year as a leaving gift from Mahindra, as they have a technical partnership with QEV who built the cars. That was where my mind was going before driving the PWR002 when I was thinking about it being a touring car that you're going to smash the kerbs in and feel the body pitching under braking. And that pretty much matched up to where I ended with my impression.

I was happy that it was fast enough to be a challenge to drive. As a racing driver you would always like to have more power, but it was in the window of what felt like a decent racing car. I released the pit limiter and you get wheelspin. I left a decent line of rubber on the track!

Inside the cockpit it had super-simple software on the dash and there were very few driver aids, with no ABS or traction control. That's not meant in a derogatory way. It was as plug-and-play a solution as it can be in terms of changing to electric, with the basic stuff you need like lap time, delta time, motor and battery temperature and very little else. Coming from Formula E where there's so much information that the dash is trying to tell you to manage – energy, temperatures, tyres, brakes, all this stuff – there was none of that.

The PWR002 is quite a raw car. There's a few different throttle maps, you can manually adjust the regen amount through a rotary switch on the steering wheel, and that's about it. Once you know the procedure to switch it on and make the drivetrain live, it's straightforward and should be accessible to a wide range of drivers. In the EV landscape, it does the job well of being a fairly pure racer that you can jump into and rag.

## STATS

**Power** 410kW/550bhp  
**Torque** 660Nm  
**0-60mph** under 3 seconds  
**Top speed** approx 180mph  
**Weight** 1450kg including driver  
**Suspension** MacPherson  
**Dampers** Ohlins DFV  
**Tyres** Yokohama 250/660-18

Keeping it as simple as possible is the best policy and that seems to be what EPWR has done. I went to an ETCR race at Zolder last year and got talking to people from the ERA junior single-seater support series about all the things they were wanting to do with the

cars, exploiting the potential fiddly bits that are great about having an electric car and trying to be a mini-Formula E. But to me that was just shouting for budgets increasing scarily, because you benefit from doing more testing, having more engineers to manage the systems and simulations. You don't want complexity that will reward you for spending more money, so the STCC appears to be going down the right path by avoiding that.

That said, there's still enough to be getting on with in the PWR002 to create opportunities for mistakes. For instance, when the battery is fully charged you can't recuperate any more energy, and it's just got a manual brake bias adjuster – there's no brake-by-wire on the rear axle – which the driver has to use to compensate for the lack of regen. I'd guess it would be around six or eight clicks



The STCC's move to electric power will be realised one year later than planned in 2024



EPWR's Ljungberg gives Sims a quick lesson in the controls



“It was a handful and I came away smiling after both sessions. I wanted more laps in it!”

of brake bias to have optimal braking on the first lap and then be winding it back after that. It's not just this easy car to drive in a sense that you can do whatever you want with it. You'll still benefit from finetuning the set-up and it's still going to reward someone who's on top of those nuances. It was a handful and I came away smiling after both sessions. I wanted more laps in it!

The grip level offered by the treaded Yokohama tyres, which are designed to be run in wet and dry conditions, clearly is not that of a slick. I found the lateral limit of the tyre within a few corners on my first run, and there was a little bit of squirming from the tread where it moves before the tyre actually slides on the surface, so you need to get used to that movement and use it. But the longitudinal performance didn't seem too bad and under braking the car responded reasonably nicely.

The thing I was more impressed with was the tyre's longevity from a thermal point of view. My experience in Formula E was that if you're caning it then you really start losing tyre performance after two or three laps, but that wasn't the case in the PWR002. There might have been some drop-off if I'd continued to do more and more laps fine-tuning things, but for the laps that I did there didn't seem to be much. I could still improve just the corner aspect of things really late into the run and I wasn't feeling like the tyre was massively dropping away.

The 50kW regen was adjustable and I fiddled around with that during the run. It's noticeable and affects the rear axle a lot. You can use it to calm the car down entering a fast corner, or if you want a bit more rotation you just click the regen up and it's effectively the same as going rearwards on the brake bias. It's going to charge your battery more, and will also give you a little bit more power. That's because it seems they allow the motor ►



CYAN RACING

## THE STCC'S SHIFTING SANDS

While its British counterpart has enjoyed fairly stable regulations since moving away from Super 2000 towards Next Generation Touring Cars (NGTC) in 2011, the Scandinavian Touring Car Championship's move to full electric cars is only its latest big shift in the same timeframe.

It started out as the Swedish Touring Car Championship in 1996, capitalising on the Super Touring boom by giving former BTCC racers a second home. Jan 'Flash' Nilsson was its first champion, while Mattias Ekstrom was launched into the DTM shortly after his 1999 title triumph. The STCC belatedly switched to S2000 for 2003, before merging with the Danish series and rebranding as the Scandinavian championship for 2011. In a sign of its growing stature, that season featured international drivers including Colin Turkington, James Thompson, Gabriele Tarquini and Fabrizio Giovanardi taking on local aces Rickard Rydell, Fredrik Ekblom, Tommy Rustad and Richard Goransson.

But it preceded a damaging split, as teams proved reluctant to copy the NGTC formula favoured by the STCC and formed the breakaway TTA Racing Elite League. After just a single season, in 2013 the TTA merged back with the STCC, which took on its formula of 3.5-litre V6 silhouette cars. However this model proved difficult to market to manufacturers and never truly took off, with Polestar's Cyan Racing arm undefeated before the production-based TCR model was embraced for 2017.

Series veteran Robert Dahlgren, a race winner dating back to his first season in 2004, and the PWR Cupra team proved the era's dominant force with four titles. Dahlgren had to give best in 2018 to Johan Kristoffersson, who underlined that he's more than a rallycross ace by adding a second STCC crown to his 2012 success, while in 2020 Rob Huff pipped Dahlgren to become the STCC's first non-Scandinavian champion since Roberto Colciago in 2002.

The planned switch to electric cars for 2023 has been pushed back a year due to supply-chain issues for battery supplier STARD, but 12 cars are expected as the STCC becomes the first national or regional touring car series to fully electrify. The calendar has yet to be announced.

**JAMES NEWBOLD**



PWR002 is based on a converted TCR car but has the same powertrain as 2024's STCC racers



to put out all the power that the battery can deliver, so you've got the most power when the battery is fully charged.

The last run of the day was much better from the perspective of me getting more out of the car and I shaved three seconds off my time from the morning session, although I would say there was another couple of seconds in it. But probably my second or third timed lap was my fastest because, even though I felt like I was driving better and honing into the needs of the car, I'd be losing time as the battery voltage was going down and I just had less power. If the STCC opts not to cap the power so that it will be consistent through the run, then it's going to be about optimising your lap very early in the run on a high state of charge.

Fortunately, the format will lend itself to this. Aside from the street events at Helsingborg and Gothenburg that will employ a

“I'm confident that it can still be the exciting spectacle that touring car fans expect”

Race of Champions-style head-to-head format, the main races at conventional tracks will last 15 minutes where drivers will drain the battery from full to empty, so I don't think it's going to create too much of a power management-type situation. You might get a little bit of lift and coast at the end of straights, where you gain a negligible amount of lap time for energy spending to just try and keep that state of charge up a little bit longer, but it's not going to be like Formula E. It did cross my mind that if a driver was smart at trying to lift and coast a bit, it could impact things, but it really depends what that drop-off is. I hope it doesn't become a case of who can save the most energy at the start of the race and still be in the pack and just drive past everyone.

I naturally err towards wanting the STCC to succeed with its shift to electric and sincerely hope it pays off. It will be

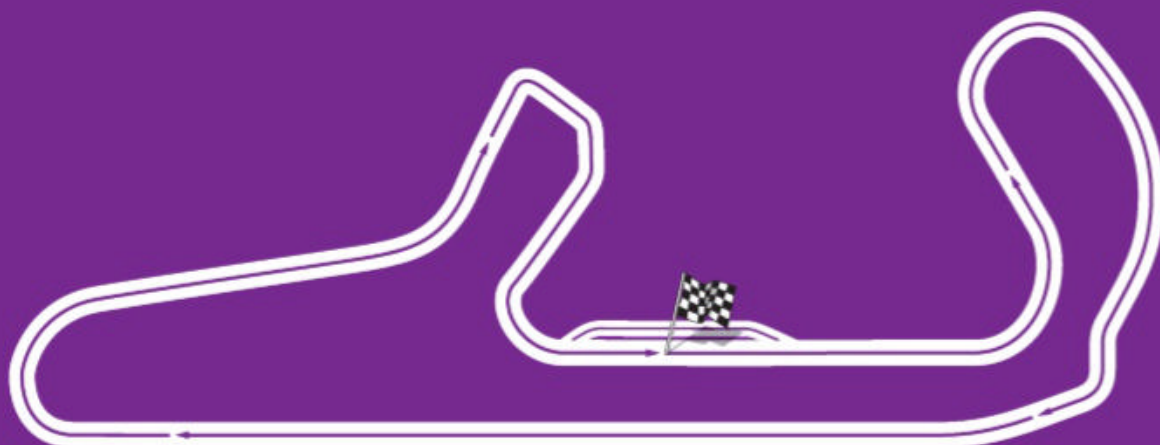


## A GUIDE TO MANTORP PARK

I'd never been to Sweden before, so the Mantorp Park track was also new to me. At some point in your career, you don't get to enjoy that many new experiences, so it was really interesting to sample a different car at a completely new circuit.

The track first opened in 1969 and is located 15 miles to the west of Linköping, around three hours from Stockholm's Arlanda airport. It's had brief spells as an international motorsport venue, but over 40 years have passed since the last of the European Formula 2 championship's five visits in 1982.

The 1.930-mile full circuit has two alternative configurations that bisect a drag strip that forms the long back straight. I was kindly allowed on Mantorp's full circuit rather than the short track, which rejoins the start/finish straight before the end of the back straight, where you must be able to be three or four cars wide quite easily and there's plenty of time to



slipstream, so that gave me a feel for the layout that the cars will actually race on.

The full back straight meant that we got up to some reasonable top speed before the first heavy braking zone on the lap after leaving the pits. It was a cracking corner with a long, combined entry where you have to balance the car on the brakes to manage your speed; you don't want to over-slow it, but you need the brake to hold the front of the car down to keep it rotating. And in the PWR002, the lack of regen caught me out there, prompting a big lock-up as smoke billowed out of the back.

The last right-hander on the track before the pits was another challenge, coming

straight after the exit of the preceding left-hand sweeper. It's probably the slowest corner on the track and was where the car got the liveliest as the tyres heated up.

There was a nice mix of corners; it was flowing and not stop-start or anything like that, with plenty of character to it. It was old-school, with not much run-off in most of the corners, and there wasn't a super smooth, new track surface. The kerbs were fairly chunky and shook the car a lot. It was a bit of a throwback, but an experience I thoroughly enjoyed.

Swedish motorsport has plenty of hidden gems, and Mantorp Park qualifies as one of them.



a tough nut to crack, because electrification changes the fans' experience at the track with the difference in noise. The organisers need spectators to buy into it, but I'm confident that it can still be the exciting spectacle that touring car fans expect with close racing, the odd bump and crash, and the cars moving around on track. From my short experience, I'm sure the box will be ticked in terms of the cars looking lively!

Something I recognised quite quickly about Formula E was that it was exciting not necessarily because it was electric. I enjoyed being a part of it because there was lots going on, rather than because it was an electric version of another racing car. So, while it's clearly important for the partners and from the technological aspect to champion the electrification and the sustainability that it's bringing – the battery storage units will be charged from renewable energy off site and then be brought to the track to charge the cars in the pits – to be successful it's got to captivate people from a sporting point of view. Unfortunately, this is completely irrelevant to the investment being made to switch over to electric drive!

I really hope that there's continuous buy-in for multiple years from the partners and the private race teams to continue running them and that the numbers increase. Stakeholders in the STCC have had to be patient this year, but if they stay the course then it has all the components to reap the fruits from its leap of faith. The next question is: how long will it be until other national series follow suit? ■

*Autosport thanks Alexander Sims, the Scandinavian Touring Car Championship, Johan Meissner and EPWR for their assistance with this feature.*

# MASERATI MC20

## INSIDE MASERATI'S LONG-AWAITED MC12 SUCCESSOR

Maserati has returned to sportscar racing with a customer car for the burgeoning GT2 class. Here's how it differs from the MC20 street car on which it is based

BY GARY WATKINS

### SUSPENSION

The suspension is double wishbones all round developed by Ycom, while the road car has a similar layout at the front and a multi-link arrangement at the rear. Suspension design is free in GT2 because it is a BoP formula. The front and rear track have been slightly increased over the MC20. Maserati has not revealed by how much, but the overall width of the GT2 is up by 64mm on the road car.



### CHASSIS

The mid-engined MC20 launched in 2020 is based around a carbon-composite monocoque, which makes the Maserati GT2 unique among the OEM cars developed for a category announced in July 2018 and that finally got going with the launch of the the GT2 European Series in 2021. Among its competitors, only the KTM X-Bow GT2 developed by Reiter Engineering is carbon-chassised. That makes it “the perfect starting point for a race car”, according Nicola Scimeca, boss of the Ycom, Maserati’s technical partner on the GT2 project.

Scimeca was chassis team leader on the Maserati MC12 GT1 contender launched in 2004 during a stint at Dallara Automobili. Based in Parma in northern Italy, Ycom was chosen for the partnership, according to Vincent Biard, project leader at Maserati on the GT2, for “its extensive experience in composites”.

Ycom’s sportscar CV includes working on the structures of LMP1 and P2 prototypes for Audi, ORECA and Ligier among others. It also developed the short-lived Lotus Evora GTE that raced at the Le Mans 24 Hours in 2011. The simulation work was carried out in-house by the Italian manufacturer on what Biard describes as a “cutting edge dynamic simulator” at the Maserati Innovation Lab.

Maserati made its debut at Paul Ricard in last GT2 round of 2023



BENICHO/SRO

## BODYWORK

Every panel on the GT2 is new and made in carbon composite; only selected panels, including the butterfly-opening doors, are carbon on the road car. The front and rear bodywork differ from the road car in the name of aerodynamic efficiency and improved cooling. The three air outlets in the bonnet are pure Maserati – a marque known as the Trident after its badge – and likes to do things in threes, witness the nine-spoke wheels. “Our job was to ensure that we retained the soul of the car,” says Pablo D’Agostino, head of exterior design at Maserati Centro Stile. “Our work was to improve the aerodynamic performance and the cooling to produce a car that is still recognisable as a Maserati. We like to say that the lower parts of the body are engineered for racing and the top parts are sculpture.” Biard points out that it was also important that the GT2 was “clearly identifiable as a track car”.



DAVIDE/MARTIS

## COCKPIT

The interior of Maserati’s first GT racer since the Ferrari Enzo-based MC12 is, says Scimeca, “pure race car” complete with a six-point FIA-homologated rollcage as per the GT2 regulations. It incorporates all the bells and whistles you’d expect, including an adjustable pedal box and racing dash. There is space for a second seat for coaching purposes, essential in a car conceived for customers and that will predominantly be raced by amateur drivers. Biard explains that creating a user-friendly environment was one of the priorities for Maserati. The air-conditioning has been retained, albeit in modified form.

## ENGINE & GEARBOX

Maserati has developed the race version of the MC20’s three-litre 90-degree V6 twin-turbo engine dubbed the Nettuno. It retains the capacity of the road car unit and the twin-combustion technology, with Biard describing it as an “evolution” of the standard unit. The big change is the ECU to replace the standard engine electronics offering five different driving modes; it’s a full race-spec version. There is also a revised exhaust system. Maserati quotes the same 621bhp power output for the GT2 as for the road car, though it varies according to the system of Balance of Performance that’s central to the GT2 class. The race engines are built on the same production line as its road car siblings. The road-going transmission of the standard GT2, an eight-speed Tremec gearbox, is replaced by a full race six-speed unit. It is supplied by Hoer Technologie from Germany.

# F1 CHANGES UP THE TUNE

New rules coming for 2026 will mean Formula 1 has its highest quota of engine manufacturers since 2008. But what has changed and what will the key battlegrounds look like?

BY JAKE BOXALL-LEGGE

**I**t was almost a decade ago that Formula 1's turbo-hybrid era began. The move away from the 2.4-litre atmospheric V8s to the current 1.6-litre V6 turbo engines augmented by electric motors was, in its infancy, not entirely auspicious; complaints over a lack of noise were united with evident gulfs between each powertrain's performance level. While many still yearn for a return to the ear-splitting V10 era, most have come to tolerate the modern-day soundscape of guttural roars rather than banshee-like screams, while performance levels have converged over the past nine and a bit years.

For 2026, the turbo-hybrid powerplants

will enter their next generation. F1's current formula will therefore have been in service for 12 full years, making them longer-lived than many of the more celebrated engine formula spans: including the 2006-13 V8s, the 1995-2005 three-litre V10 (plus occasional V8 and V12 interlopers) era, and the 1987-94 expansion of the naturally aspirated engines to 3.5 litres.

Similarities will remain with the projected new power units, and a 1.6-litre V6 internal combustion engine will continue to underpin the overall package. But there are a range of key changes aimed at keeping Formula 1 relevant to not only the growing cast of automotive

suppliers involved, but to the changing demands of the industry. With the growing repertoire of all-electric championships within the world of motorsport, F1 wants to prove that the internal combustion engine has a long-term future...

## GREATER EMPHASIS ON HYBRID

When the current powertrain rules emerged, F1 had not done a particularly good job of promoting them as highly efficient hybrid engines that could churn out masses of power, all while using far less fuel than the previous naturally aspirated V8s. Now their value has been recognised

1.6-litre V6 engines will remain in F1 beyond 2026, but with some significant differences



– and F1 wants to expand upon that.

Currently, the MGU-K positioned on the rear axle can produce about 160bhp, producing anywhere between a 90/10 and an 80/20 split in the bias towards the internal combustion engine for propulsion. That's set to shift to a formula approaching 50/50; the MGU-K is going to be responsible for 350kW (470bhp) of the total power output, with the internal combustion engine producing the rest. That's the same circa-1000bhp output as the current powertrains, but achieved with less fuel.

But the much-maligned MGU-H will be removed from the overall package. While useful in the environs of F1, where

drawing waste energy from a turbine and using it to spool it back up to eliminate lag was beneficial, it has found little use in the wider automotive industry. To keep the current manufacturers involved in F1 and to tempt new ones in, deleting the MGU-H seemed to be the easiest way to satisfy both camps.

The overall mass of the power unit must be at a minimum of 185kg, up from 151kg in the current regulations, which allows for a weightier internal combustion engine and a larger motor generator unit to produce the upscaled level of power.

While the base 1.6-litre V6 turbo characteristics remain the same, the overall combustion system will change

might, following the removal of the MGU-H, deliver an aspect to the new powertrains that many have found to be sorely lacking in the current specification. "With the removal of the MGU-H, even though we have still got a turbocharger, it won't be removing as much of the energy as we're currently doing. We know the combustion engine will be less efficient and so that will, by physics, mean that there's more noise."

### SUSTAINABLE FUELS

Fossil fuels will be consigned to F1's past in 2026, with sustainable fuels feeding the new engines. Although the rules are intended to minimise the effect of a war between

**"While I'm sure to some eyes it will look very similar, it's going to be completely different"**

comprehensively. Mercedes engine chief Hywel Thomas explained that "it's going to be a completely different combustion system, as the amount of fuel is reduced.

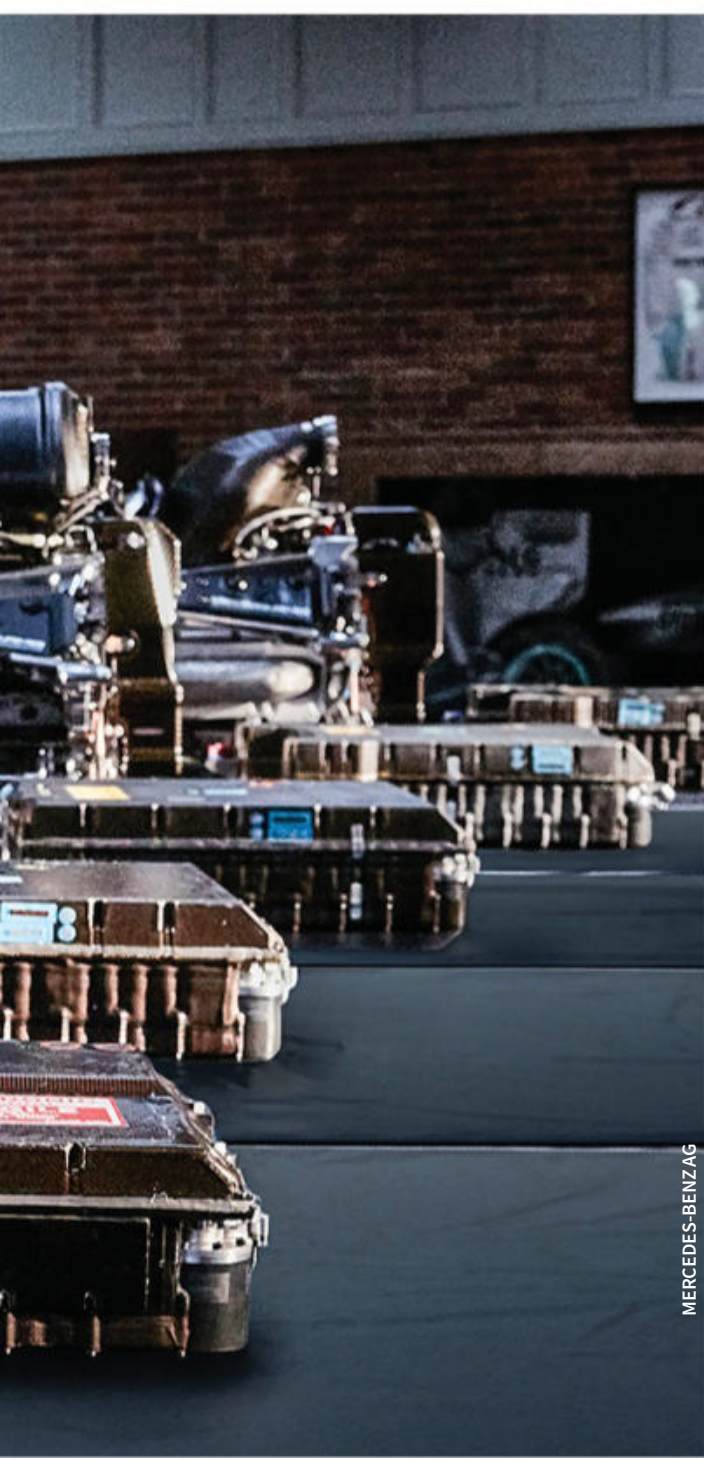
"There's some details around compression ratio. There's details around permissible boost pressure. So there's just a different set of constraints on us. And that different set of constraints means that, while I'm sure to some eyes it will look very similar, it's going to be completely different."

Thomas added that the 2026 rules

energy giants, they will nonetheless seek to accelerate their fuel technology in the F1 battleground. This will come down to composition, where there's a degree of flexibility with how each supplier produces their hydrocarbon fuel – so long as it is not derived from feedstocks that affect the global foodchain. This must also tie into F1's 'zero carbon' target.

It is expected that the compositions between fuel suppliers may vary; biowaste-derived ethanol can be blended with synthetic e-fuels, the latter becoming a growing technology as carbon captured from the atmosphere is forced to bond with hydrogen. As long as hydrogen gas is produced using only renewable energy, this is a sound – but energy-intensive – manner of producing a carbon-neutral fuel. Ultimately, the method of production will be largely open.

To mitigate an escalating arms race between fuel suppliers, the fuel flow limits have been changed. Rather than measuring the amount of fuel injected into the engine by mass, the 100kg/hour limit will now switch to a limit based on energy, pencilled in at 3000MJ/hour. This hence prioritises efficiency in the powertrain, ►



MERCEDES-BENZ AG



MERCEDES-BENZ AG

Thomas says the new rules for 2026 will mean big changes

rather than stuffing potential energy into a single drop of fuel.

F1 is hoping that the “drop-in” fuels produced can be upscaled to mass production; since these fuels require no modifications to an existing internal combustion engine, it ensures that the products seen powering 20 (or 22, perhaps?) F1 cars can translate to the garage forecourt.

## INCREASED MANUFACTURER COMPETITION

The 2026 engine regulations have attracted the most manufacturers on the grid since 2008, with the two seasons tied on having six engine suppliers. Mercedes, Ferrari, and Renault have maintained their interests, and Honda makes a ‘return’ having realistically never left the championship. Red Bull Powertrains has linked up with Ford, the Blue Oval returning to the grid for the first time since it left at the end of 2004, and Audi becomes an F1 constructor for the first time through its majority purchase of Sauber.

The circumstances of having six manufacturers on the grid, however, are very different; back in 2008, there was something of a supplier drain when financial crises and constraints prompted Honda, BMW and Toyota to depart over the next two years, and it was only at the behest of Bernie Ecclestone and Max Mosley that Cosworth was returned to the fold for 2010.

This time around, new manufacturers have actually been tempted in by the progression of the regulations. It’s not just F1’s growing popularity and more favourable financial terms that have provided the incentive to join, although



F1 cars will run on fully sustainable fuels

ETHERINGTON/MOTORSPORT IMAGES

those will have surely greased the wheels.

Initial hybrid introductions were not overwhelmingly popular in 2009 when KERS (the precursor to the MGU-K) was made available. BMW, Renault, McLaren-Mercedes and Ferrari produced their own 80bhp motors, but the first two dropped it partway through the season having found limited potential. Ultimately, it attracted no new manufacturers – it’s only in recent years that the more sophisticated hybrid systems have been of interest...

## KEY BATTLEFIELDS

Teams have a key concern about the 2026 engine specifications: in their simulations, excessive lifting was required to charge the battery enough to deliver the full power promised by the motor generator unit. Max Verstappen reported that in his earliest simulations of the 2026 package, he had to downshift along the straight at Monza to help recharge for the rest of the lap.

“Like Formula E, software will become a hotly contested area for performance gains”



Red Bull will build its own engines from 2026 in partnership with Ford

THOMPSON/GETTY IMAGES/RED BULL CONTENT POOL

SCHLEGELMILCH/MOTORSPORT IMAGES



Spot the engine manufacturer from 2008: Mercedes, Ferrari and Renault are still part of F1



HONE/MOTORSPORT IMAGES

Symonds predicts that simulation scares will not be a factor in 2026

F1 chief technical officer Pat Symonds refuted that, explaining that more advanced simulations show that this would not be necessary following modifications to the rulings. He stated that “the performance profile of a 2026 car in simulation now doesn’t look terribly different to 2023”, given the evolution of the regulations that were initially put out.

Ultimately, it will be up to the teams to find ways of recovering energy throughout the course of a lap to ensure that the 350kW MGU-K maintains its up-time for as long as possible. Determining where the car needs the full 1000bhp and where it doesn’t will be key to that, so mapping out usage will continue to play a part. Like Formula E, software will become a hotly contested area for performance gains.

Powertrain efficiency will continue to be important, as per the 3000MJ/hour energy flow regulation set out for 2026. The current internal combustion engines are just over 50% efficient, meaning that they convert over half of the raw energy available in an uncombusted fuel into forward propulsion; this may drop slightly with the removal of the MGU-H, since teams may burn more fuel off-throttle to help spool the turbo up and eliminate lag on corner exit.

Active aerodynamics are also set to tie in to the 2026 regulations, and F1 is still in the process of defining the boundaries for this. Although the overall desire is to create a situation that eliminates DRS trains, the active aero package will also have a role to play in helping the cars regenerate energy to ensure that the full 350kW of power is available from the motor. It is expected that, to replace DRS, wings will be flattened on the straights; with the reduced drag, this puts much less demand on using the energy in the battery pack to generate speed.

The concerns over not having enough energy recovery do not extend to every circuit, merely the very fast ones, but Symonds and F1 are adamant that this won’t be a problem once 2026 rolls around. It’s likely just posturing – and once F1 reaches its all-new rules cycle, don’t be surprised if those issues don’t end up occurring. ■

# HOW A **LOST LOTUS** WAS BROUGHT TO LIFE

Over 50 years ago, a Can-Am Lotus design was penned but never built. Now, using modern methods and technology, the Type 66 monster – dubbed the Lotus Black Sabbath by its creators – has finally been produced

BY STEPHEN LICKORISH



**C**ontinuation cars are all the rage at the moment. Recreations of everything from pre-war Bentleys to outlandish BRM Formula 1 machines, and plenty more besides, can be found in the historic motorsport scene. But, rather than following this well-trodden path, Simon Lane wanted to do something different when he was appointed executive director of the newly formed Lotus Advanced Performance special projects division at the start of last year.

Mindful of the much-loved marque's looming 75th anniversary, he aspired to create something truly special – a car that combines Lotus's illustrious history with modern-day technology. Fortunately for Lane, a chance discovery by Clive Chapman – son of company founders Colin and Hazel – in 2015 provided the key to making such an idea possible.

Chapman Jr had been searching through old F1 designs when he happened across something very different. Inside a tube, on microfilm, were drawings of what turned out to be a never-built Can-Am racer, the Type 66, penned by Lotus draughtsman Geoff Ferris. Chapman was intrigued and was subsequently asked to write an article about it for *Motor Sport* magazine's celebration of Can-Am at 50. A few renders and models were created, but that

was seemingly the end of this incredible car's stop/start story. That was until a conversation between Lane and Lotus design director Russell Carr shortly after Lane joined last year.

"I was sitting in Russell's office and he talked me through this [the 66] and it was like discovering an unreleased Beatles song," recalls Lane. "In Lotus history terms, this is an incredible race car, which has clear Chapman traits all over it, that no one knows about – and, not only that, it looks absolutely beautiful."

The 66 followed a largely unsuccessful previous Can-Am foray a few years before with the Type 30. But, with many of Lotus's contemporaries subsequently entering a category that also attracted the greatest drivers of the day, and was arguably the most exciting series around, Chapman tasked Ferris with coming up with a design for 1970. Yet, amid the huge number of other projects Lotus was working on – not least developing the revolutionary 72 that changed the face of F1 – the Can-Am racer was quietly forgotten about as attention turned elsewhere.

But upon hearing about Lotus's equivalent of a lost Beatles track, Lane instantly decided he wanted the 66 to be LAP's first creation. After securing the blessing of Chapman Jr, and persuading the rest of Lotus's management of the merits of



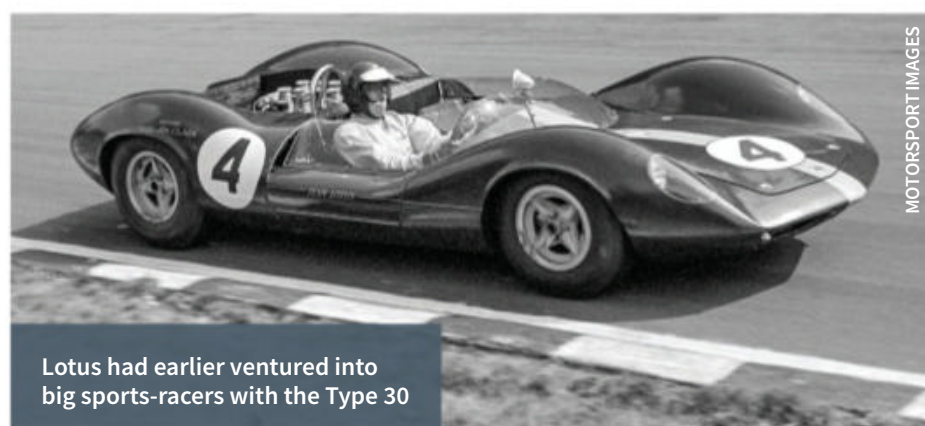
ALL PICS: LOTUS/DAVID COYNE



The Type 66 blends an old design with modern tech and has eye-catching trumpet stack from its V8 (inset)

an expensive project to build just 10 examples (mirroring the 10 races of the 1970 Can-Am campaign) of this track-focused collectors' car, each with a £1.1million price tag, the hard work really began.

Adding to the challenge of bringing a 50-year-old design to life was the fact that Ferris's original drawings were not complete – and some contained different versions of the car to match the changing Can-Am regulations. "There's not really a collection that absolutely fit together – the dimensions are slightly different,"



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Lotus had earlier ventured into big sports-racers with the Type 30

says Carr, who highlights the presence of a high wing on some designs and an integrated one on others as a key difference, brought about by the flimsy appendages being banned on safety grounds: "You either get two drawings that are slightly different because one has the wing on struts and one hasn't, or you can even see where Geoff has erased some lines and changed things. So we had to make the best judgement of how to fit them together."

In total, over 1000 hours of CFD work went into creating the present-day version, pulling together the old drawings and adding enhancements and modern safety features. "We applied better surfacing on it because some race cars had beautiful surfacing on them, but they were designed really quickly and it was all about winning on the day and only for a few races," continues Carr. "But, obviously, a collector is going to look at and love this car for years, so it's making sure a panel's not too flat because then it will look hollow, and putting just enough shape in it."

"We also had to integrate a few things which were to do with modern requirements. So a little bit of a change around the front end because the original car had a floating wing and we wanted to integrate a crash box in front of the driver's feet. The Type 72 was the car of the moment so we designed the nose to reflect ▶

# THE CLOSEST FEELING YOU CAN GET

The visual differences between sim racing and real life have gradually diminished over the years, but that isn't only the case with the software. The same also applies to the hardware, as equipment devised for virtual competition has found its way into actual racing cars.

Italian sim hardware manufacturer Cube Controls is familiar with this trend. It created the steering wheel for Honda's latest Civic Type R TCR, which uses identical components to those present on its commercially available products. Last year Cube Controls also partnered with Mercedes-AMG to supply steering wheels for its GT2 racer and the limited-edition GT Track Series weapon.

But for sim racers, according to company co-founder and designer Massimo Cubeddu, a real-world racing wheel contains in-built crash-test specification and waterproofing features "they don't need", which only drives up the cost. That explains his excitement about the Cube Controls x Mercedes-AMG – GT Edition SIM Wheel, released in September, which provides the closest feeling possible to what you would get when racing in the GT2 European Series in terms of both design and ergonomics, while keeping to a reasonable price.

"We used the same styling and concept of the steering wheel," says Cubeddu. The 32cm diameter is identical, as are the shifters, while grips too are unchanged. However, there are clear differences that can be explained by Cubeddu's own sim racing background.

He started out 15 years ago with a trusty Logitech G25, but it had only two buttons that "were quite limiting the performance". He duly produced modifications that were sold on a small scale, forming the nucleus of the company he started in 2016 with Fabio Sotgiu.

To Cubeddu, a steering wheel is "not just a plate with buttons thrown on, it's a human interface device and you have to take this into account to elevate the experience". As such, there are considerably more options for sim racers to customise relative to the simpler but "way more expensive" GT2 and GT Track Series versions. These include the ability to change the colour and brightness of each button, adjust the paddles and shifters, and the addition of rotary switches and joysticks "to make the experience more rich".

"We're offering the same concept design-wise as the real race car, with some extras," adds Cubeddu. "It makes sense to have the best of both worlds and have two slightly different devices so both the drivers and sim racers are happy."

The deeply held passion for sim racing at the heart of Cube Controls meant it wasn't short of input into the design for the sim variant, which was developed alongside the racing version. Cubeddu closely follows new automotive and motorsport trends to inform designs, and a desire to continually innovate has paid dividends. From 26 units in year one, it expects to have produced 4000 by year's end.

Remaining on top is a constant challenge but, with its latest offering earning positive feedback from users, the Mercedes collaboration only cements Cube Control's market-leading status.



[www.cubecontrols.com](http://www.cubecontrols.com)

LOTUS/DAVID COYNE



that. Also, the attitude of the front wing changed because it wasn't really doing very much where it was, it wasn't reacting with the airflow, so the pitch of the wing changed. And cooling hadn't really been tested out in the day, so we've done a lot in simulation form to make sure there's good airflow to the radiators and the openings are big enough."

Carr and his team were mindful of making the tweaks subtle to ensure the original design still rang true. "Geoff Ferris has seen the car and it looks correct to him," says Carr. "You had to hold your hand back not to go too far and make sure you do it justice."

Lane says one of the few stipulations Chapman Jr placed on the project was that the car must be safer, easier and more fun to drive than the daunting machines of the Can-Am era it was born from. "What we've done is create a car that looks and sounds like the original, but has aero we know 100% works and is much safer," he explains. "It has a proper crumple zone front and rear and a crash structure, and race ABS, traction control and power-steering, so it's much easier for the amateur to drive. Also, it's much faster than the original would have been because it's got more power – it will be contemporary GT3 pace."

Carr adds: "It's really the best of both worlds. It's got all the spirit and visceral experience of the car of the period but it's got all the benefits of everything we've learned over 50-odd years to make it safer. Simon came up with this great thing of saying it was like discovering a lost Beatles track and I said our job then – like when someone finds an old tape or recording and has to remaster it – was to amplify all the bits that are exciting and important and take away all the noise that is a distraction and an irritant, and at no point lose what Chapman would have seen and loved."

It seems the Lotus team has navigated that tightrope to perfection, and the statistics behind the car are staggering. The pushrod V8 engine produces a roaring 125 decibels of glorious

**"Our job was like when someone finds an old tape or recording and has to remaster it"**

noise – as well as 830bhp. And with the final version of the car set to come in at just under 900kg, that gives a seriously impressive power-to-weight ratio. It's therefore no wonder that, rather than referring to the 66 as Lotus's lost Beatles track, Carr says it better represents Black Sabbath!

An initial show car was unveiled at Monterey Car Week in August, just weeks before Lotus's 75th anniversary and merely 10 miles down the road from Laguna Seca, a 1970 Can-Am venue. With the car clad in a colour scheme that is unmistakably the Gold Leaf-liveried F1 72's of 1970, Emerson Fittipaldi – the likely driver had the 66 ever raced in period – was also on hand for the launch.

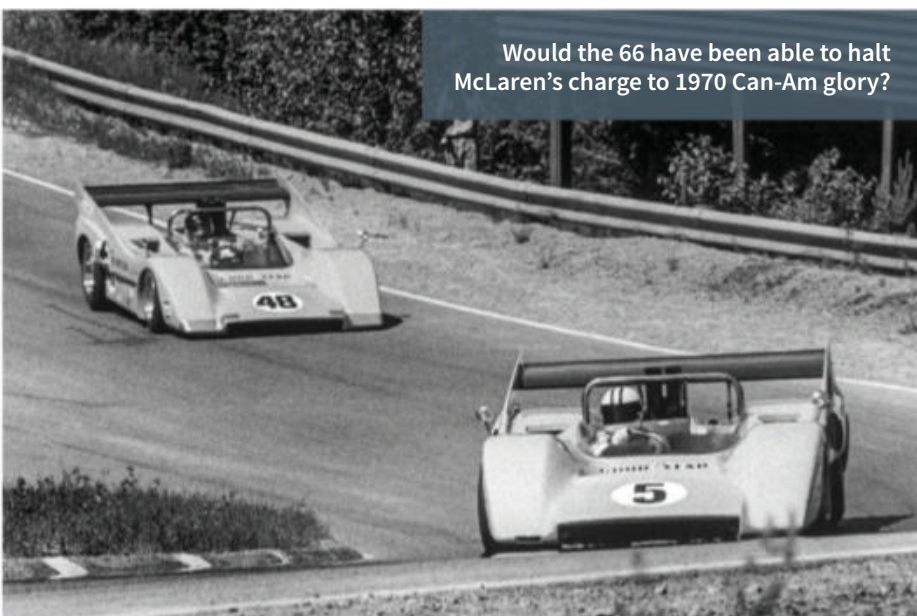
As impressive as the new creation is, there is still a feeling of what might have been. "Clive said to me this could have been the Type 72 of Can-Am had Lotus made it," says Lane. There were certainly the classic hallmarks of a revolutionary Chapman car. Take the side-mounted radiators inspired by the 72 that contrast with the front-mounted ones of the other 1970 machines. Or the rather liberal interpretation of the two-seater Can-Am rules with the planned presence of a jump seat.

For those involved, there is a clear sense of pride in finally ensuring that this forgotten Lotus gets the appreciation it deserves. "We're all very lucky boys and girls to have been involved in this one – it was a dream project," says Carr. "I'm just old enough that I can remember Can-Am cars thumbing through your magazine. As a kid, there would be a few tantalising pictures of Can-Am cars and just being really excited by them."

Now, if you have an incredibly healthy bank balance, you can also share that excitement. Construction of the 10 customer cars is set to begin in early 2025, but not all have yet been sold. And, while Type 66 remains the focus for now, the inevitable question concerns what comes next for LAP. Lane is somewhat coy when he says that there are "potentially" other similar projects in the pipeline. "But we have very, very limited other opportunities, so I don't want to give the impression we've got another 10 of these up our sleeve," he clarifies. "We certainly haven't!"

Regardless of what the future holds, there is one final touch that completes the Lotus circle. The final assembly for the 66s is set to be carried out by Classic Team Lotus – Chapman Jr's operation that features several stalwarts of the Lotus glory days. "You could argue this will be the first Chapman-built Lotus track car in decades," says Lane. And that really will be the most fitting of codas to this rediscovered Lotus track. ■

Would the 66 have been able to halt McLaren's charge to 1970 Can-Am glory?



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# HOW TO BE AN ACE ENGINEER

John Judd looks back  
on a career working to  
extract usable horsepower

BY JAMES NEWBOLD

**T**o most people, the scenario facing John Judd in 1988 would be a dictionary definition of stress. Arriving into Formula 1 as an engine manufacturer, his Engine Developments company had undertaken to supply three teams including reigning world champion squad Williams, fresh from its Honda split. That would bring pressure, but the needs of Leyton House and Ligier also had to be met, while Judd had Formula 3000 and Indycar on his plate as well. But when asked if he's known a more fraught time, his response is telling.

"I wouldn't say it was stressful, it was OK," he replies. "I don't find engineering generally that stressful. It's the business bit and people that give you stress!"

Raised in 1950s Coventry, the young Judd "was very keen on airplanes" and aged 11 had a working model with a diesel engine that fired his passion. "My career is just an extension of that," he says, "doing stuff that I do for a hobby anyway."

An apprenticeship at Coventry Climax set him on his way, but Judd's big break came when he was recommended for a job at the Brabham Racing Organisation. Seconded for months at a time to assist Repco, he spent much of 1966 and 1967 travelling back and forth from Melbourne but quickly understood "how special Jack [Brabham] was".

Working with the "brilliant, intuitive engineer" was a career highlight for Judd: "I'd say that 1966, 1967 was probably the best time really, being around people like Jack and Ron [Tauranac]. I was happier in

my work than anyone has the right to be."

Judd became partners with Brabham in 1971, but Engine Developments didn't have an easy start. He recalls "struggling badly and having a job to stay in business" but, after one of John Surtees' DFVs was tested on his dyno, business gradually picked up and Judd became a respected DFV preparation specialist working with numerous F1 teams. Judd-built engines also dominated SuperVee and Formula 3.

Dreams of becoming an engine manufacturer were realised after Honda came seeking troubleshooting advice for its Formula 2 V6, which had disappointing results with Tauranac's Ralts. Judd's "quite lucky" discovery that the fuel mixture was running too lean and simply advancing the ignition could yield handy benefits made Honda receptive to further tweaks. Some "bodged-up" cylinder heads that "gained 30 horsepower lower in the range" duly won first time out at Spa in 1981.

Three subsequent Honda F2 titles meant Judd was encouraged to continue honing the 2.65-litre V8 engine he'd devised for its aborted Indycar entry. The AV debuted in

1986, the same year Engine Developments delivered a fleet of 12 Honda-badged BV F3000 engines, and won at Pocono in 1988 with Bobby Rahal. "It was just expansion, expansion, expansion!" Judd says of the period his Rugby operation arrived in F1.

It stayed there until 1997, taking eight podiums with Judd-badged engines and a further two with Yamaha. Victory proved elusive, but Judd says near-misses at the 1990 French GP and 1997 Hungarian GP are "not a big cause of regret".

Afterwards, Engine Developments aided Nissan in conquering the British Touring Car Championship and won the Daytona 24 Hours in 2002. Judd labels the GV V10 platform first used by Scuderia Italia in 1991 as "the best thing we ever did", with upscaled versions proving successful in Dome and Pescarolo prototypes. An IndyCar return in 2012 wasn't properly funded by Lotus, but as he reflects on an "enjoyable and professionally satisfying life", Judd at 81 remains passionate about supervising design work. As he puts it: "I'd sooner come here than go to the golf course with all the other old farts!" ■

Judd remains  
passionate  
about engine  
design at 81



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## TOP TIPS FROM JOHN JUDD

- Take a job that you'll enjoy, don't just go for money. That will serve you better long-term than money will short-term.
- When hiring, we'd seek people who worked on their own cars. We wanted engineers that liked engineering, not somebody who just picked it as a career.
- Don't take yourself too seriously. For those lucky enough to be clever, it isn't necessary. If you're not, then you'll look an even bigger fool.



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# MAKE IT REAL



Ph. Mario Pulicella

With the new Cube Controls x Mercedes-AMG - GT Edition Sim wheel, sim racers can experience the thrills and challenges of real motorsport.

To commemorate AMG's 55th anniversary, Cube Controls designed and produced steering wheels that were made for the Mercedes-AMG Track Series and GT2.



Ph. Mario Pulicella