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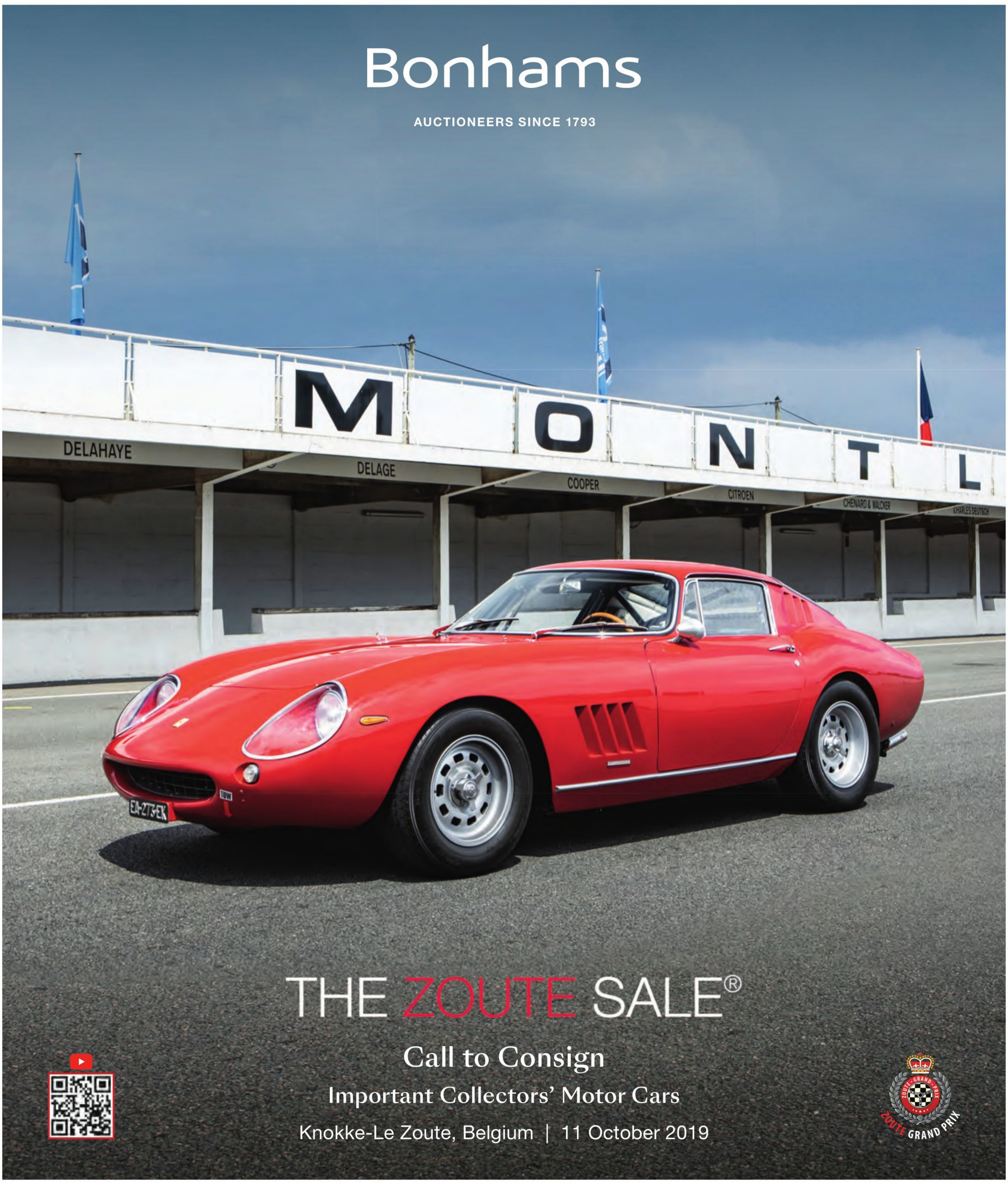
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MOTOR SPORT

THE EDITOR

"Will any of the W Series drivers go on to make a mark in Formula 1?"

I SPENT A LATE SUMMER SUNDAY AFTERNOON LYING ON THE grass in a clearing by Westfield Bend at Brands Hatch last month, scoffing blackberries picked from the brambles behind me, waiting for the coming deluge.

It started as a low rumble from Paddock, grew louder through Surtees and increased an octave through Hawthorns until suddenly it was upon me – a chaotic wall of noise as 18 DTM cars flooded past so close you could smell the tyres. DTM is one of the few races that Brands can be allowed to stage without noise restrictions, and it is immediately apparent. As the race two leader, and eventual winner René Rast, in his number 33 Audi RS5, passed I tapped the stopwatch on my phone and settled back for 1min 22.59sec of peace and quiet, until the Teutonic onslaught returned.



Such, as my colleague Simon Arron would say, are the charms of Brands. The Sunday DTM race was thrilling, ran in front of a proper crowd, confirming the wisdom of the move to bring the championship back to the circuit last year for the first time since 2013. It was also a first chance to see the R Motorsport Aston Martins in action on home soil – a ragged sounding rocket if ever there was one. In the event, Audi claimed honours with all three podium spots – and two more in Saturday's opener, however Marco Wittmann's BMW snatched glory in that one.

It was good to see a genuine headline act at one of my favourite UK circuits. But it wasn't the only reason I travelled from north London to Kent.

The weekend also played host to the finale of the W Series. This is the women-only racing championship that was launched to much fanfare last year and immediately divided the opinions of fans and drivers in equal measure. On the one hand there were those – many women racers among them – who argued that by segregating along the lines of gender the series was doing a disservice not only to women but also to motor racing, which, almost uniquely among top sports, has always allowed both sexes to compete against one another on the same platform.

On the other side of the argument, were those (this magazine among them) who pointed out that the current system, although theoretically sound, clearly wasn't working in practice when the last time a woman started a top-flight F1 grand prix was Lella Lombardi back in 1975.

What was unarguable was that, with the W Series swinging a deal with Channel 4 to broadcast its six races, it was good to see another motor sport on terrestrial TV. And much of the racing was thrilled, too. Not only that but the organisers showed other series how to think on their feet and mix things up for no other reason than that they could. A prime example being the penultimate round of the year at Assen when, on a whim, they decided to stage a non-championship reverse-grid race. It was smart, agile thinking that resulted in great entertainment.

But back to Brands Hatch. Certainly, the stops had been pulled out in the paddock with a rather garish display of purple and yellow balloons, around the 'W Village' area. A saxophonist was jamming over the noise of DTM qualifying, and bean bags littered the floor. Truck racing this was not. But that wasn't the only thing that was unusual.

The demographic was one of the most diverse I have seen at a race meeting: young and old, male and female. This magazine does not pander to political correctness and likes to think that virtue signalling is activating a car's indicators in good time for the benefit of the driver behind, but there was no denying the sense of energy and optimism around the W Series enclosure.

And, as the father of two girls and stepfather to a third, it was doubly encouraging to see people of all three's age groups (7-14) milling around, playing racing games on the simulators, talking to the engineers and posing for selfies with the drivers.

Ah, the drivers... will any of them – newly crowned champion Jamie Chadwick included – make it to the F1 grid as the organisers of the W Series have stated their aim to be? It seems unlikely. It is surely too late for them even now. But, I couldn't help thinking as I watched the crowd of young girls surrounding Chadwick et al and peering over the ropes of the garage, that perhaps one of these young fans just might be able to in the future.

Before I left Brands, I managed to grab a celebrating Catherine Bond Muir, the brains behind the series, in order to congratulate her on the season. "It's a great day for British motor sport," she said. "It's been the perfect day, it couldn't have gone any better."

Perhaps she was premature: three days later it was announced that Alice Powell, the winner of the Brands Hatch race, would make her IMSA SportsCar Championship debut at the Virginia Raceway with Heinricher Racing later in the month.



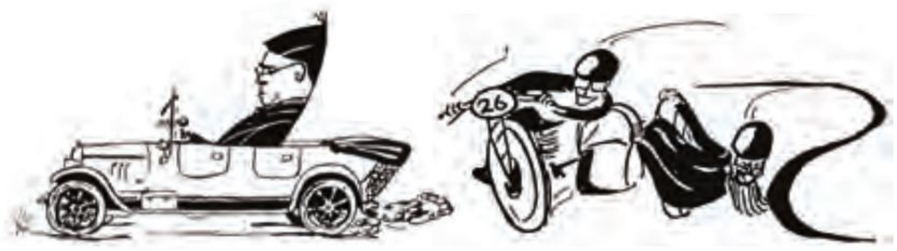
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NEXT ISSUE: OUR NOVEMBER ISSUE IS ON SALE FROM SEPTEMBER 25

MOTOR SPORT

IN THE SPIRIT OF BOD AND JENKS



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Details matter.



With only three in existence, tracking down a Brawn GP chassis for our cover story wasn't easy. Fortunately, we received a tip-off about the location of the only one that actually still runs. Owned by Ross Brawn and stored in a secure barn in Northamptonshire, this is the chassis Jenson Button took his six wins in, still in the Brazilian GP livery from its title-winning moment. Being in a barn, we had to line the walls with black sheets to create a studio around it to achieve the desired effect.

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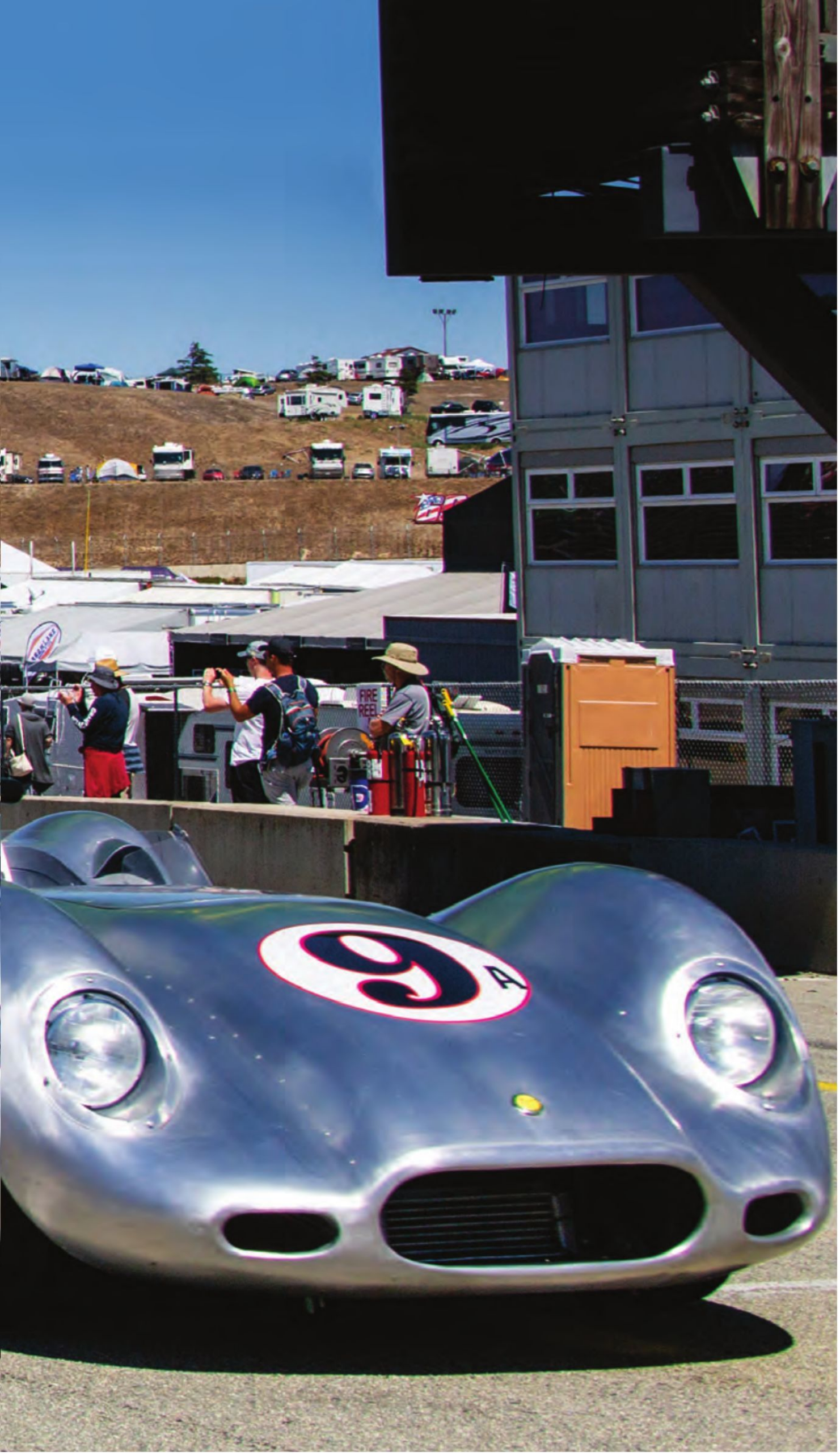
The magic of Monterey

THE WORLD'S BIGGEST CAR show took place earlier this month, as the rich and famous of the automotive industry descended upon Monterey Car Week.

The seven days, held on the sun-soaked California coastline, featured everything from static car displays and concours to moving roadshows, motor sport events and even a botched auction to steal headlines.

Perhaps the highlight was the Rolex Monterey Motorsports Reunion, which took place at Laguna Seca. This year the event celebrated 50 years of IMSA sports car racing, marking the first time the meeting has featured a series as its star attraction. Around 550 cars took part in the event, with bulging grids featuring everything from the humble Formula Ford 1600 up to historic Formula 1 cars, Trans-Am, Group C monsters and more. Two-time F1 world champion Mika Häkkinen was the event's star guest, running demonstration laps aboard the 1970 McLaren M8D/3 'Batmobile', which was raced in period by Dan Gurney and Peter Gethin following the loss of the marque's founder Bruce McLaren when testing the prototype at Goodwood that June.

Away from the track, RM Sotheby's sale, or lack thereof, of the Porsche Type 64 made headlines for all the wrong reasons after the auctioneers overinflated the price by a heady



$53m after a communication error resulting in an upset room and bidding being halted.

This year's show featured a renewed focus on motor sport, according to many attendees. The hottest ticket in town was not Sunday's champagne-soaked Concourse, but the smaller, more exclusive event known as The Quail: a Motorsports Gathering. As the name suggests it focuses on performance cars and those with a racing history. Tickets started at slightly sobering $950.

The Rolex Motorsports Reunion featured some stunning machines. Above, Al Arciero's Lister Knobbly leads a packed 1955-61 sportscar field



Applications open for first 'Motorsport Olympics'

CALLING ALL DRIVERS! MOTORSPORT UK is recruiting racers to compete for their country at the inaugural FIA Motorsport Games.

Unveiled by the FIA and SRO Motorsports Group, the Games are an Olympic-style tournament pitting drivers against one another for national pride.

Six categories have been selected for the inaugural Games, including touring cars, F4, drifting, karting slalom and esports while a GT race will headline the event. The full entry list has yet to be published but the competition is based on the GT Nations Cup, which had competitors from 18 countries.

Participating nations are responsible for organisation of its own entry, with one entrant per category for each country.

Motorsport UK, the domestic governing body, has opened applications to represent Team UK. "We want to ensure the strongest representation possible," Motorsport UK technical director, John Ryan told *Motor Sport*. "We will consider all applications received and will be planning our representation over the next fortnight."

Anyone can apply to represent the UK as long as they hold a British passport and relevant FIA racing licence. Individuals will be required to provide their own vehicles that meet homologation, with the exception of the F4 and karting, which will be provided.

The Games will award medals and will have an opening and closing ceremony.

Let's make a date, or not...





Clashing fixtures have created issues for drivers in both WEC (*above*) and Formula E, forcing many to choose sides

MOTORSPORT IMAGES

THE FIA HAS PLEDGED TO UP ITS efforts to better coordinate the calendars of its top-line series in future after a fixture standoff between Formula E and the World Endurance Championship created difficulty for several star drivers in both series.

The original iterations of this year's eight-round WEC schedule and the 12-round FE series revealed an initial three clashes - with the WEC's races in Bahrain, Circuit of the Americas and Spa-Francorchamps all conflicting with FE events.

WEC organisers argued that its calendar was revealed last August, but FE countered that the logistical difficulties of staging its street race events meant its calendar wasn't flexible. WEC has reacted by switching the date of its Spa event to a week earlier, but drivers such as Toyota stars Sébastien Buemi and José María López both face tough choices on where to race on the two remaining clashing dates. Other drivers affected include André Lotterer (Rebellion & DS Techeetah), Alex Lynn (Aston Martin & Jaguar) and Sam Bird (Ferrari & Virgin Racing).

Lotterer suggested his lack of a factory seat in WEC would lead him to favour FE, while Ferrari has already replaced Bird in its WEC plans with Miguel Molina. Lynn acted as a stand-in for Jaguar Racing in FE this year, and will likely stick with Aston.

Things are less clear for López and Buemi - with López saying his WEC deal with Toyota will take precedence and Buemi adding that he may have to take each event on a race-by-race basis.

The clashes have drawn criticism from both drivers and fans, leading FIA president Jean Todt to suggest his organisation should be doing more to help coordinate its series. Todt did attempt to create a calendar commission to bring officials from top championships together, but reported that it did not meet.

"There is probably a bit of misunderstanding and some difficulties about the calendars," Todt said. "It's something I've been expressing very often. Clearly, we know there is interest with certain drivers to participate in both championships. So now, in light of what's happened, I've asked my people to see if some solutions can be found.

"I must say, it's not easy, as each championship has its own needs. I feel a bit unsatisfied that this calendar commission did not meet to try to address this problem before. But it's never too late to try."

The WEC season gets underway at Silverstone on August 31/September 1.

Dominant Chadwick clinches title



With two wins and three podiums, Chadwick took W Series title

JAMIE CHADWICK CLINCHED THE FIRST ever W Series championship last month, finishing fourth during a thrilling season finale at Brands Hatch.

The British driver, who has led the series since the first race in Germany, secured the title by 10 points as fellow Brit Alice Powell took the chequered flag to win on the day. Chadwick said: "To be the inaugural W Series champion is simply unbelievable. It'll sink in soon I'm sure, but it hasn't yet."

The big question is where does it go from here? Once the gloss and publicity of its debut season wears off, the series will need to continue to impress next year.

And for some a true test of its success will be whether it can launch drivers into higher categories. As Tiff Needell, a critic of the concept in its early days, tweeted after Chadwick's win: "Big congrats to @JamieChadwick55 for taking the inaugural @WSeriesRacing crown. Hope she can now get a good F3 drive and take on the men as well!"

The DB4 GT Zagato brings the stunning original lines back into production. Below, the new DBS GT is slightly more divisive





Aston's most costly car close to completion

THE FIRST EXAMPLES OF ASTON Martin's stunning DB4 Zagato Continuation - the most expensive production car ever made by the firm - will be delivered to customers before Christmas.

Built at Aston's dedicated Heritage and Continuation facility at Newport Pagnell, only 19 of the track-only DB4 Zagatos will be made. The company says it is using original manufacturing and finishing methods to accurately recreate the finish of the original design of 1960-63.

The manufacturing process is such that each of the 380bhp straight-six-engined cars demands around 4500 hours to complete.

"The cars are only sold as a set, and cost a whopping £6 million"

And for the ultimate accessory, each DB4 Zagato Continuation will come flanked by a new DBS GT Zagato - the Italian firm's re-styled version of Aston's modern range-topping Superleggera. The cars are only sold as a set and cost a whopping £6million plus taxes. Buyers will have to wait an extra year before collecting their DBS GT, however, which will be available in late 2020.

The DB4 Zagato is the latest so called continuation model from Aston, following modern versions of the DB4 GT (priced at £1.5m) and plans for a 'Goldfinger spec' James Bond DB5 already underway.

Silver Spitfire's trans-globe epic

GOODWOOD AERODROME ECHOED ONCE again to the rousing sound of a Merlin V12 in August when a war veteran Spitfire took off to begin a round-the-world flight, the longest ever attempted by the legendary WWII fighter. David Coulthard was among 400 guests watching

Pilots Matt Jones and Steve Brooks of the Boultbee Flight Academy begin their circumnavigation, which aims to visit 30 countries. After 27,000 miles via Iceland and Canada, through the USA to Russia and back across south-east Asia and Europe, the aircraft will touch down again at Goodwood in December.

Finished in non-military polished bare metal, the 'Silver Spitfire' is a 1943 MkIX, which flew 51 'sorties' in WWII, flown by pilots from Australia, Canada, Norway and Trinidad as well as the UK. Preparation for the adventure involved a complete strip-down and fitting long-range tanks, but the famous aircraft is otherwise original barring modern radio and iPad for navigation.

Planning the epic trip took two and a half years, said Jones, adding that the team had to arrange for caches of special fuel in more remote places. With an accompanying support crew and spares in a Pilatus PC-12 aircraft, the two pilots aim to make some 100 stops before their return to the Sussex airfield, where the Spitfire was based in 1945.



It now has long-range fuel tanks, and an iPad, but is otherwise a completely original 1943 Spitfire MkIX. Below: The planned route for the journey

King of cool's coolest car

A COUPLE OF YEARS AGO THE PORSCHE 917 THAT STARRED IN THE FILM *LE MANS* sold for a blockbusting $14m. If that seems a bit rich - but you still hanker after some Steve McQueen automobilia - then perhaps a more modest dune buggy is more up your street.

Bonhams is selling the Myers Minx in which McQueen took co-star Faye Dunaway for a white-knuckled ride in the 1968 film *The Thomas Crown Affair*. Developed by Bruce Meyers, the fibreglass-bodied dune buggy quickly became the embodiment of the cool, open-air California lifestyle set to a Beach Boys soundtrack.

Typically, however, McQueen had this version modded for the film. "I helped them design it, so I'm kinda proud of that," he is quoted as saying. "It's set on a Volkswagen chassis with big ol' wide tires on mag wheels, Corvair engine in the back... It's very light, you know. It's pulling about 230 horses and weighs about a thousand pounds."

The Buggy will be sold at the Bonhams' annual Amelia Island, Florida auction next March.

It's not a Porsche 917, but Steve McQueen's buggy from *The Thomas Crown Affair* is going up for sale with Bonhams

ALAMY

"The polished, bare metal Silver Spitfire flew 51 sorties during WWII"

Baxter takes top spot at Prescott



Baxter wrestled his Riley-ERA to the fastest time up Prescott's short course to claim Mays-Berthon Trophy

SIMON ARRON

JAMES BAXTER (RILEY-ERA) CLAIMED THE main prize at the Vintage Sports-Car Club's annual Prescott showpiece in August, a 40.36sec climb putting him more than a second clear of closest rival Nick Topliss (ERA R4D).

His success earned him the coveted Mays-Berthon Trophy and capped a successful weekend for the VSCC, which drew its customary large crowd and attracted an entry of more than 270 cars for the only event that still takes place on Prescott's 880-yard 'short' course (for which Baxter still holds the record, a 39.68sec run at the wheel of ERA R4A in 2015).

One of the closest battles was fought in the class for pre-1941 racing cars of 1150-1500cc. Father and son Terry and James Crabb shared the wheel of ERA R12C and the former proved incredibly consistent, his four runs over the weekend separated by just 0.48sec, but James eventually managed a quicker ascent to take victory by 0.09sec. Crabb Jr also came away with the award for fastest young driver.

The VSCC returns to Prescott on September 28, when drivers will tackle the full, 1127-yard hill.



McLaren has form at Indy: Peter Revson finished second in 1971, before Rutherford won for the team in 1974 & '76

IMS

McLaren commits to full IndyCar campaign

FORTY YEARS AFTER IT LAST COMPETED in America's single-seater mainstream on a full-time basis, McLaren has announced that it will do so again from 2020.

The Woking-based team has twice dabbled with the Indy 500 during the past three seasons, challenging for victory with Fernando Alonso in 2017 but failing to qualify earlier this year. From next March, however, McLaren will enter two Chevrolet-powered Dallaras for the full IndyCar campaign, in association with established team Arrow SPM [Schmidt Peterson Motorsports].

Three-time Indy 500 winner Johnny Rutherford was the last driver to represent Team McLaren in a comparable championship, taking his M24B to a brace of victories in Atlanta en route to fourth place in the 1979 CART PPG World Series.

McLaren's sporting director Gil de Ferran, a winner of both the Indy 500 and the now-defunct CART series during his racing days, will lead the firm's US operations. He said: "IndyCar is a natural fit given our legacy and determination to succeed at the top levels of international motor sport. Our ambition is to compete consistently for wins. We acknowledge the challenge, but are committed to this partnership."



The team will be known as Arrow McLaren Racing SP and existing co-owners Sam Schmidt and Ric Peterson will continue in their management roles. McLaren's drivers for 2020 have not been confirmed, but it is unlikley to be Fernando Alonso. As *Motor Sport* reported back in July, Alonso (*pictured above during the 2019 Indy debacle*) and McLaren have ended their driver partnership.

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MARK HUGHES

"It is like a real-life arcade game, with a queue of young drivers outside"

ONLY A FEW MONTHS AGO Alex Albon looked to have missed the Formula 1 boat entirely. In his second year of F2 he'd finished third in the championship, but it was the two guys ahead of him – George Russell and Lando Norris, both already with strong F1 links – who were promoted.

Albon was a couple of years older than them, had been on and off the Red Bull Junior programme and was now on his way to Formula E, like many before who'd fallen just slightly short of the final hurdle.

Then came a late call from Dr Helmut Marko, prior to Red Bull buying him out of that Formula E drive with Nissan and propelling him into F1 with Toro Rosso. Just half a season later he finds himself in the senior team alongside Max Verstappen in a car that's won two of the previous four races.

The Red Bull conveyor belt moves fast. Catch it right and it can rocket you to the top (Verstappen, Daniel Ricciardo before him). But it twists and turns and, if you stumble, it spits you out just as quickly (Sébastien Buemi, Jean-Eric Vergne, Daniil Kvyat and now Pierre Gasly). It's like a real-life arcade game, with a queue of eager young drivers lining up outside for their turn – and a few who've fallen off hanging around at the side, waiting for a chance to jump back on.

Does Albon, with such limited F1 experience, have the stuff to allow him to stay upright on that crazy conveyor?

He's still raw, still capable of throwing it off while pushing for more at an inappropriate time (as in China on Saturday morning, or Hungary during Friday afternoon). But that just might turn out to be his strength; that 'push for more' is very much part of his style. He attacks the track gung-ho, can drive around instability and seems not to have the need for a car to be tailored exactly around his preferences before he can key himself in. His first experience of an F1 car in the wet was in the race at Hockenheim, where it didn't take him long to be running in a solid fourth place, not putting a wheel out of place on a day when even the biggest stars were throwing it off the track. But for late nothing-to-lose gambles for slicks from those much further back, there's every chance he'd have stood on the podium.

You see it early in the weekends, too, when the track's still dusty and everyone's playing themselves in. He's just out there doing his stuff, finding that balancing point where he's got a little too lairy and bringing it back just slightly from there, the way Gilles Villeneuve used to do it, or Max Verstappen.

More often than not, he'll be much faster in the early practice sessions than the more experienced Kvyat. But he's not always then been able to make the right calls on set-up as the track grip improves and all the variables have to be brought together in a crescendo for that final qualifying lap. That's where his inexperience shows. But driving the car: that's easy. It was no bother for him as he found his way around Albert Park on his debut, using the bumps and kerbs between the walls to extend the width of the track at all the right places, hitting them at the right angles and speeds, like he was still in his kart. His car control is wonderful and he's not shy about using it to get out of situations in which his ambition has put him.

The Red Bull RB15 is a challenging car to drive, though. At least it's now quick and challenging, but still it requires some manhandling to extract its best, not something with which Gasly felt comfortable.

To get the sort of performance that put it on the Hockenheim front row, Verstappen was having to pitch it into some of the faster corners to banish its initial understeer, even in sixth gear. That takes confidence in your car control. In the same places Gasly just went with the understeer but would then be left fighting the car mid-corner as the front gripped up.

This was just a little snapshot of the many different challenges the Frenchman faced in the RB15 – and with the added pressure of Verstappen as his reference point, too. In a car more in tune with his own driving style, Gasly would not have got into such a vicious downward confidence circle and would likely still be there.

But those specific traits probably won't present Albon with as much difficulty as they did the more technical Gasly. As such, the baseline speed should give him and his engineers something more to work with.

But still he's very inexperienced – and still has the incumbent Verstappen in the other car.

"If Albon can shine, he's set to be a megastar with a glorious career ahead"

If Albon can shine in such circumstances, then he's set to be a megastar with a glorious career ahead of him. But if he looks merely OK... Red Bull and Honda are looking to 2020 as a season in which they can challenge for major honours.

In terms of the world championships for constructors and drivers – and in points taken from rival teams – the second car needs to be scoring consistently well. Albon has half a season to show whether he could fulfill such a role.

That's one very tough gig, but don't write him off...

Since he began covering grand prix racing in 2000, Mark Hughes has forged a reputation as the finest Formula 1 analyst of his generation
Follow Mark on Twitter @SportmphMark



MAT OXLEY

"The Americans wouldn't allow a bunch of Commie bike nuts into the country"

SEPTEMBER 1 2019 MARKS THE centenary of the birth of Walter Kaaden, the German engineer who transformed motorcycle grand prix racing by creating the modern two-stroke engine. Between 1958 and 2011 (after which MotoGP went fully four-stroke), two-stroke bikes won more than 2000 grands prix, all directly or indirectly attributable to the great man.

Kaaden, a former weapons engineer who worked on the Henschel Hs-293 *Gleitbombe* (guided missile) and ME 262 jet-powered fighter plane, ended the war on the east side of the Iron Curtain, where he set about building the world's most powerful race bikes. His state-owned employer MZ had scant resources, but it didn't matter, because Kaaden was a genius who noticed two-stroke possibilities where others saw none.

"The most promising possibility to gain performance lies with the exhaust, basically a downstream supercharger," he once wrote.

Kaaden's 1961 125cc MZ was the first normally aspirated engine to produce 200bhp per litre. The bike should have won that year's world championship, but instead MZ's star rider Ernst Degner defected during the Swedish GP and sold Kaaden's secrets to Suzuki. The very next year Suzuki won its first world championship, as later did Yamaha, Kawasaki and others, all using Kaaden's two-stroke tricks.

Following Degner's defection the GDR authorities mostly forbade Kaaden and his mechanics from travelling to The West. Thus MZ's racing exploits were much curtailed. But where there's a will there's a way...

At the end of 1960 Kaaden hired British rider Alan Shepherd, who enjoyed success on 125, 250 and 350cc MZs. After 1961 Kaaden accompanied Shepherd to races when he was allowed, but other arrangements had to be made when he wasn't.

In 1963 Shepherd had an entry for the Italian GP at Monza, but Kaaden wasn't given clearance to attend, so both parties drove to the Brenner Pass on the Italian/Austrian border, where the bikes were switched from the MZ truck to Shepherd's Austin van.

Setting up a two-stroke GP bike was never easy. The engines were fickle, affected by the slightest change in ambient pressure and temperature. And also by engine wear.

"If the cylinder wears, the port profiles change, and so does engine behaviour," wrote Kaaden. "So you may tune an exhaust to suit a certain engine, then after the race you change the piston and the engine doesn't have the same power as before. So you can't tune the engine to the smallest detail, because in the meantime other components can wear so much that they require changing, and it all starts over again."

Despite such constraints, Shepherd went well at Monza, telephoning Kaaden whenever he needed advice. The pair had agreed that if the engines required more serious attention, the work would have to be done by Kaaden on the Austrian side of the Brenner pass, a 450-mile round trip from Monza. Luckily that wasn't required, and Shepherd finished second in the 350cc Italian GP and fourth in the 250.

"Kaaden watched the Japanese factories take his ideas"

The 1964 championship began at Daytona, USA. Obviously there was no way the GDR would allow Kaaden and his crew to travel to the heart of western decadence, nor would the Americans allow a bunch of Commie bike nuts into their country, so Shepherd went alone.

But first he had to get the bike. Shepherd climbed into his Austin once again and set off for the Berlin corridor, the 120-mile strip of neutral asphalt that linked West Berlin to West Germany. The bike swap was made at Helmstedt, ironically the same East/West border crossing used by Degner's family when they had escaped in the boot of a car.

The MZ-RE250 was air-freighted from London to Florida, after Shepherd had abandoned the Austin, which broke a conrod near Cologne. Things went almost as badly at Daytona - Shepherd was so far adrift that on the eve of final practice he called Kaaden in Zschopau.

This wasn't an easy or cheap procedure. At first the American telephone company refused to connect a call to the GDR. Finally, under pressure from Daytona, it relented. Shepherd made the call, but at £30 a minute in today's money, it had to be quick.

He recited his problems to Kaaden, who quickly decided the cause was low-grade fuel. "Don't interrupt me now," he told Shepherd. "Here is what you must do... Do all that and I think you will win! Goodbye."

And Shepherd did win, after hurriedly making some adjustments to compression, ignition and carburation. That year the 28-year-old scored two more podium results - at the Isle of Man TT and Spa-Francorchamps - to end the campaign third overall, behind the mighty Yamaha and Honda factories.

MZ continued to make occasional forays into grand prix competition over the next decade, taking its final victories in 1971. Kaaden passed away in 1996, having watched the Japanese factories take his ideas and, with it, control of motorcycle racing. "Every time you build something good, someone steals it," he said shortly before his death. "I have to accept it. I cannot change it."

Mat Oxley has covered motorcycle racing for many years – and also has the distinction of being an Isle of Man TT winner

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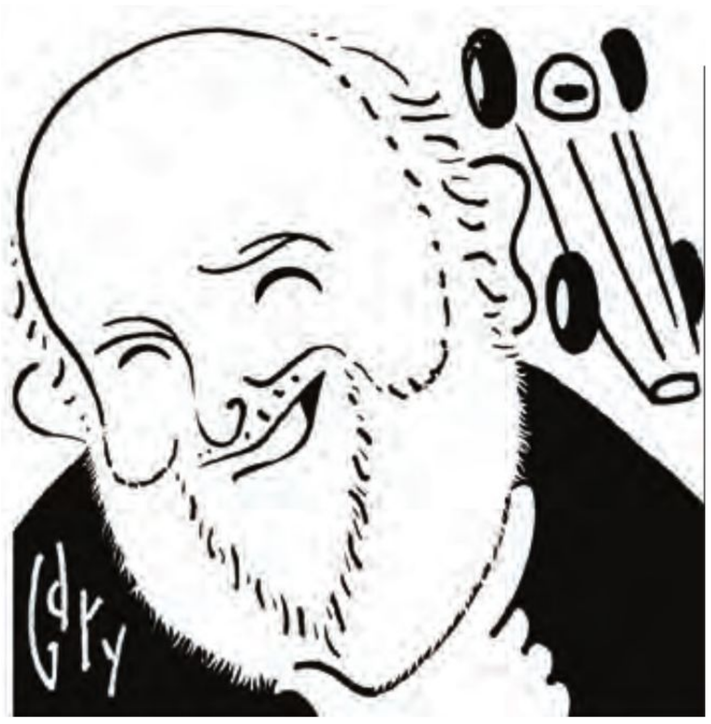
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DOUG NYE

"Based on the evidence, Mercedes' paint-scraping legend holds little water"

REFLECTING UPON THIS year's extraordinary German Grand Prix, one might reasonably assume that hell will freeze over before the current Mercedes-Benz F1 team management will ever again let the parent company's promotions and PR department dictate frontline racing affairs.

I suppose it just seemed like a good idea when some bright spark identified the Hockenheim race as being the brand's 200th F1 Grand Prix, and in Mercedes-Benz's 125th anniversary year, too. How fitting for the race in question to be a German GP – the three-pointed star's home event. From that point forward I assume that the momentum to "do something special" became unstoppable.

So, Mercedes-Benz did three things. It opted to repaint the W10s in a special livery. It opted to have a Netflix film crew embedded with the team that weekend. And it opted to have its pit crew and executive personnel rigged out in various forms of allegedly 'vintage' racing attire...

I can picture our old friend, this magazine's Continental Correspondent Denis Jenkinson, gnawing his lower lip over the very notion. He would then have skewered one of the PR people with his most penetrating gaze – and have barked either "Harrrummpphhh" or – I'd guess much more puzzlingly for a German audience – "Rhubarb!" – a derogatory phrase borrowed from the *Goon Show*.

Well, it's all in the record book now how the race went for Mercedes: two starters, race led, one finisher, 11th place subsequently upgraded to a points-scoring ninth thanks to rule infringements by a rival team.

Three things strike me about Mercedes' three fateful pre-race PR decisions. The first is that any company proud and protective of its public image is well advised to be extremely wary of consorting too closely with an embedded independent film unit. One awaits with interest any finished documentary result. Significantly, Lewis Hamilton declared post-race "I won't be in the Netflix show much, because I was sick the whole time – I won't let them release that".

As for the supposedly 1955-garbed pit crew. Well, to a man they seemed almost suicidal over the unexpected and pretty much bungled 50-plus second pit-stop triggered by Hamilton's own error, when he knocked off his front wing against the outfield barrier. What struck me was that in their '50s-style white overalls they demonstrated a genuine '50s-style pit stop.

And then we come to the question of the team's white-nosed 'celebratory' – or 'semi-retro' livery at Hockenheim. The promotional people at Mercedes have clung firmly to the company legend that when their 750kg Formula Grand Prix cars made their winning debut in the 1934 EifelRennen at the Nürburgring, they had been delivered to the circuit painted in the contemporary German national racing colour of white.

In his autobiography, one of retired team director Alfred Neubauer's jolly yarns claimed that in Nürburgring scrutineering the cars were found to exceed the 750kg maximum weight limit. He promptly ordered them to be stripped of their white paint. In bare aluminium the cars just scraped under 750kg, enabling them to start the race – and for works driver Manfred von Brauchitsch to win it.

"In their 1950s garb, Mercedes' pit crew executed a 1950s stop"

Well, it's always been a nice story, but the balance of contemporary evidence exposes it as simply untrue. That EifelRennen debut for the new W25 GP cars took place on June 3, 1934. It shouldn't have been the W25s' racing debut. That had been scheduled for the previous weekend's AVUSRennen, in Berlin, on May 27. There, both the new rear-engined Auto Unions and the W25s had appeared in practice, but only the Auto Unions actually raced. The Mercedes were withdrawn with fuel system problems.

Surviving photographic evidence confirms that the new Auto Union P-Wagens were finished in polished aluminium or silver – not white. Three Mercedes-Benz W25s practised – driven by Caracciola, Brauchitsch and Fagioli. At best only one of the cars was painted white, the other two bare aluminium.

The following weekend at the EifelRennen only two W25s competed, driven by Fagioli and Brauchitsch. This was run to Formule Libre rules, not to the 750kg GP Formula, so beyond useful practice before the German GP (on July 15) there was no need to scrape in below a weight limit. Long-surviving works mechanic Eugen Reichle recalled: "The cars never had been painted white, so there was no paint to grind off...". The photo record shows bare aluminium W25s, even in practice.

So Mercedes' paint-scraping legend just doesn't hold water. In 2007 I was involved in a symposium at Daimler-Benz Fellbach, which pretty much debunked the whole thing. Neubauer's ghost writer Harvey T Rowe (of the contemporary *Quick* magazine) was present. He defended Herr Neubauer's reputation while admitting he just made notes as the great man told his stories.

Plainly, the great Mercedes' PR unit still seem schooled to think otherwise. At Hockenheim, 2019, such freewheeling with the truth didn't do them great honour... But I will admit to being glad the team – the pure-bred Racers – then made up for it in Hungary.

Doug Nye is the UK's leading motor racing historian and has been writing authoritatively about the sport since the 1960s

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ANDREW FRANKEL

"Hagerty's Festival had a rogue's gallery of ghastliness... I loved it"

WHAT WOULD YOU DO if you saw a 1976 Vauxhall Chevette parked at the side of the road? Not an HS or anything flash, just a common or garden, base-spec Chevette. Would you barely register it, look as you passed, slow down then look back over your shoulder, or even actually stop? Me? I'd cross the road. And until a few weeks back, I would not have really been sure why.

Certainly it would have little to do with the fact it was a Chevette, although I always thought that next to some of the rubbish built in the UK in the 1970s, the little Vauxhall was an attractive, blameless kind of car. But having now spent a day amid an entire field full of elderly ordinariness, I think I now have a better understanding.

The event was Hagerty's Festival of the Unexceptional, whose Concours de l'Ordinaire had the doubtful honour of counting me among its judging panel. They were all there: every car that's ever been made a figure of fun like Allegros, Marinas and Trabants, and those you'd forgotten ever existed in the first place, like Fiat Tempras, Triumph Toledos and Chrysler Horizons. Or, as in my case, tried to forget. There were Maxis and Hunters, Vivas and Avengers, Astras, Cavaliers, Datsuns and Dafs. A rogue's gallery of ghastliness, an entire hall of hideousness... and I loved it all.

Nor did my enjoyment stem remotely from a desire to laugh at these cars, much less their owners who fell into two distinct camps: the heroically passionate whose mission was to show why the world had got it wrong when it came to their car, and the wryly amused whose eyes were fully open to the awfulness of their automobile and loved it all the more for that.

I didn't love any of the cars I judged, but I was delighted beyond words that they still existed, were cared for and, in the vast majority of cases, were still well used. It was like dropping anchor on a desert island and finding fit and well an entire boatload of shipwreck survivors who've been missing for the last 40 years. And I suspect you, like me, have seen far more D-types, DBR1s and GTOs than Chevettes in recent times.

I also think Hagerty may also have timed the Festival exceptionally well. I enjoy drooling over priceless machinery as much as the next man, but as we head to an all-electric future and the headlines are full of 2000bhp hypercars no one can afford or use, the balance provided by the Festival of the Unexceptional is both stark and refreshing. Perhaps that's why this year's event, the sixth in succession, was by far the biggest. I shall be back for more next year.

ON THE FIRST WEEKEND OF AUGUST I went to the Bentley Drivers' Club meeting at Silverstone and was reminded of the appeal of small events like this. I adore the Goodwoods, the Spa Six Hours, Donington Historic Festival and other big fixtures, but both as a spectator and competitor, there is much to be said for the small club meetings.

"Officials would think that my car's crocked, and take pity on me"

For competitors the egos tend to be under closer control on track, so there's less chance of tangling with someone who's forgotten he's a middle-aged amateur just having a fun day out. For spectators the races are shorter and more frequent, and there's no one in a hi-vis jacket saying you can't park there.

I took part in the Bentley handicap race - those charming about-face races where the grid goes one by one in reverse order from the pit-lane and timed so that if the handicappers had a perfect day at the finish we'd all cross the line at the same time. So we all crawl around in qualifying, trying to go sufficiently slowly to ensure a lowly grid position but not so slowly the handicappers smell a rat. As ever I was in the 1921 TT car - the oldest Bentley racing in the world today - armed with an inspired plan. Come qualifying I did a few fairly slow laps, then came into the pits, jumped out of the car, looked around tutting loudly, fiddled a bit here and there, tightened the radiator cap and returned to the fray only to return to the pits for good the following lap. Of course the handicappers would think my car was crocked, take pity on me and, given I was already in the oldest car in the field, that none had a smaller engine and I alone had no front brakes, give me a massive head start.

Turns out they're smarter than that, and I duly lined up seven places back. With the Bentley now miraculously recovered, it didn't take long to dispatch those who had started ahead and as I crossed the line to start the final lap I led the field with no one else in sight feeling very pleased with myself. And then with two corners to go, they all turned up at once, from monstrous 8-litre leviathans and things with aeroplane engines to modern 6-litre, 12-cylinder racing Continental GTs. I got swamped. I think I finished ninth. And now I've confessed all here, if I manage better than last next year, it'll be a crowning achievement.

The only sadness was the absence of any factory presence. In Bentley's centenary year it's a shame the Crewe firm could not have arranged for some of its priceless collection to be there for the public.

A former editor of *Motor Sport*, Andrew splits his time between testing the latest road cars and racing (mostly) historic machinery
Follow Andrew on Twitter @Andrew_Frankel

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JENNIE GOW

"Typical Eddie, we all thought. Why would Hamilton leave McLaren?"

WHAT IS IT ABOUT Formula 1 driver announcements coming during the summer break? Just as I had turned off my social media notifications and packed the suitcase to head off on holiday, Red Bull announced that Alexander Albon would be replacing Pierre Gasly.

So, there I am – along with a lot of other journalists, I suspect, who use the mid-season break to have their holiday – scrabbling around with a suitcase and sun tan lotion in one hand and a mobile phone in the other trying to get a quote from someone who wasn't already 'out of office'.

This isn't the first time Red Bull has done it, either. This time last year, just as the summer shutdown was starting, my phone lit up with the news that Daniel Ricciardo was leaving for Renault. As with Albon, the announcement caught everyone in the paddock by surprise. Just one month before we had all been reporting that team principal Christian Horner was close to signing the Australian for another few years...

Some transfer moves in Formula 1 take forever to come about and are entirely predictable – see Lance Stroll's move to Racing Point after his father bought the team, or Alonso to McLaren after he was replaced at Ferrari by Vettel. Robert Kubica's return took a while, even though it was on the cards for months. But I love the way it works in F1 because the whispers and growing speculation are all part of the game.

Think back to the sensational news that Lewis Hamilton was set to join Mercedes. The first rumblings began on September 5th 2012, when Eddie Jordan announced Hamilton was set to leave McLaren. "Typical Eddie," we all thought, because why on earth would Hamilton leave the team that had signed him as a boy to go to a relatively unsuccessful rival? But of course Eddie had heard it from Bernie and Bernie had heard it from Niki, so you suddenly realise that the musings of Eddie were actually spot on. Alas it's hard to get scoops like that any more now Bernie is no longer in the game.

Some of the biggest rumours of driver moves in recent years have surrounded Fernando Alonso. Could he still come back to F1 even now? When he was in F1 he was always being linked with 'other teams' and ironically made moves at the wrong time and to the wrong place numerous times.

One move I will always remember was the news that Vettel was leaving Red Bull for Ferrari. It came at Suzuka and the whispers it might happen were suddenly confirmed on the Saturday morning. I recall running down to the back of the Red Bull garage where a visibly upset Christian Horner spoke to us about Vettel's decision. You could see it was a hugely personal subject for him to talk about. But us hacks couldn't be too sympathetic, our minds were already racing, calculating the implications. The key one being that Vettel's news meant Alonso was leaving Ferrari, and we all knew he was headed for McLaren, but no one would announce it.

"A simple slip of the tongue is seen as clear and obvious intent to get rid of a driver"

The paddock is a little like the back gardens of old terraced houses. All the mechanics and engineers, hospitality and marketing members, shooting the breeze in between sessions and some of those little whispers give you what could be an exclusive. A simple slip of the tongue as a team principal, or an answer to a question that leaves even the slightest margin for misunderstanding is seen as clear and obvious intent to get rid of a driver. Of course, that's not the case most of the time, but when you have the world's media analysing body language, talking to contacts within the team, and analysing every word everyone says, jumping to conclusions with only half the information can be easily done.

Every year there is at least one seat in contention in the top three teams – that's just the nature of the sport – so every year around this time journalists whip themselves up into a fervour and start hypothesising.

Of course most rumours turn out to be just that. Some of my favourites in recent times have been Ricciardo going to Ferrari, Hülkenberg to Ferrari, Räikkönen to stay at Ferrari, Vettel to leave Ferrari and head back to Red Bull. Max Verstappen has constantly been linked with moves to other teams, even to the point that Mercedes was about to sign him when Red Bull crept in and promised him an F1 drive, and that sealed the deal.

Audi was supposedly coming into F1 to supply Red Bull with engines, then there was Porsche and Aston Martin. A grand prix was definitely going to happen in London, and New York... It can be advantageous to start a rumour in the paddock if you're a money man, and even a well-timed tip off by a driver or team boss can mean the deck of cards suddenly stacking up on your side.

But mostly the F1 rumour mill exists because of the febrile atmosphere of the paddock. Gossip, mischief and desire for a good tale can combine to create an entirely plausible situation that is nonetheless entirely untrue. Unless it turns out to be true, of course. In which case, can I make a plea for it not to happen just as the rest of us are about to go on holiday.

Jennie Gow has been a staple of the BBC's Formula 1 broadcasting team since 2011, working across both TV and radio

Follow Jennie on Twitter @JennieGow

German GP Hungarian GP

Hard knocks on home turf

The German GP was supposed to be a Silver Arrows celebration, but instead became a waterlogged nightmare. **Mark Hughes** watched the drama unfold

At Hockenheim Mercedes was celebrating the 125th anniversary of the Daimler company's involvement in the sport. It had bankrolled the German Grand Prix into not being lost to the 2019 calendar and so was taking maximum promotional advantage. Everywhere you looked the three-pointed star was present, ditto images of various racing Mercs and Benzes from history - and in a final flourish the current W10s were finished partly in white, the traditional racing colour of Germany before the advent of the silver arrows in 1934. The jagged line ahead of the cockpit where white transitioned to silver represented the moment of that change. The *belle époque* 'Mercedes' font on the car was from the early 20th century, back when the name was first applied to what had previously been Daimler.

The historical pedants would point out that 125 years ago (1894), there was no such brand as Mercedes, that it flowered into existence in 1901, named after the daughter of the Daimler company's main financier. But that's to nitpick; the company was there at the start, the brand a few years later. Daimler powered the 'winning' (it was complicated, let's not get distracted) Peugeot of Albert Lemaître at what is recognised as the very first motor sport competition, the 1894 Paris-Rouen trial. Essentially, Gottlieb Daimler invented the petrol engine while fellow inventor Carl Benz created the first car. The two companies raced against each other at the dawn of the sport until they merged in 1926.

The Mercedes team members were dressed in period costume - mechanics, engineers, marketeers, strategists. But the car was up to the minute. It featured a major aero upgrade incorporating cooling tweaks. The new package comprised front wing, barge boards, sidepods (with a slightly outward orientation of the radiator inlets for better cooling) and rear wing endplate. It was said to be worth half a second per lap.

Except it didn't seem to be quite translating. Lewis Hamilton, feeling unwell enough that Esteban Ocon was on stand-by, nonetheless secured pole but the Mercs were split by the ever-improving Red Bull-Honda of Max Verstappen. That contest might all have been for the second row, however, had the Ferraris run cleanly. An intercooler leak stopped Sebastian Vettel while Charles Leclerc's car suffered a failed fuel pump in Q3. The red cars thus lined up only 10th and 20th around a power track at which they'd looked the fastest of all. A new Shell fuel was introduced, to take advantage of what is believed by rivals to be Ferrari's extra cooling of the engine's inlet charge at full throttle. It is not known if the failures were linked to increased stresses from this, but that was certainly being speculated.

Whatever, that was Ferrari's present to Mercedes on this anniversary weekend. But on race day Ferrari would soon enough be right there as Hockenheim's layout played well to the car's power advantage.

In the race Hamilton had initially dominated on the wet track, with Bottas fending off an attacking Verstappen. But a series of safety cars and virtual safety cars kept resetting the pack, with the circuit seemingly forever on the verge of being ready for slicks, but not quite. Leclerc had used a VSC to pull back most of his early deficit and by lap 26 had jumped



The idea was sound as Mercedes turned back the clock with traditional dress, but the smiles soon faded

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Mercedes car meets Mercedes ad hordings in an ironic twist as Lewis Hamilton skates off on cold slicks to lose the lead at Hockenheim

Verstappen and Bottas as Ferrari fitted him with a set of slicks with which to take the battle to Hamilton. The latter pitted for slicks a lap later and was just exiting the pits when Leclerc lost control on the still-wet final two turns, running out onto the ice rink-like run-off area and from there into the barriers. By now it had begun raining again and under the Leclerc safety car Hamilton could get no heat into his slicks - and he lost it at much the same place as Leclerc, but managed just to glance the barriers and keep enough momentum to crawl to the pits for a new wing and a change back to intermediates. The team, which had been expecting Bottas, had the wrong tyres ready and the new nosecone was in the back of the garage. So it was a disastrously slow stop by the costumed crew. Hamilton blamed himself for not having insisted on inters earlier, as he could see the black cloud arriving. That was where Mercedes lost the race and, with Leclerc not around, it all played beautifully for Red Bull and Verstappen, who were on the way to a second victory in three GPs.

Merc's problems just compounded in the way the safety cars and VSCs did not dovetail with its strategy calls, Hamilton falling near the back after taking a 5sec penalty for missing the pit entry bollard as he crawled back, and losing more time with a Turn One spin. Everything thus rested on Bottas. The car was super-difficult in the damp and slow on the straights. Eventually he too lost control at Turn One - and hit the barriers hard. Perhaps the celebrations were a distraction to the team. Vettel, meanwhile, from last on the grid, finished second, going some way to atoning for crashing out of the lead here last year. Daniil Kvyat gambled on an early switch to slicks to record Toro Rosso's first podium since Vettel won the 2008 Italian GP, with Lance Stroll doing the same to take fourth for Racing Point. Alex Albon's Toro Rosso was a superb sixth - the rookie having impressed hugely by running fourth in his first F1 drive in the wet.

A WEEK LATER, THE HUNGARORING CHANGED the emphasis from power to downforce - to leave it a straight Mercedes vs Verstappen

Trackside View

Turn 12, Hockenheim, Germany



Mercedes and Red Bull barely register Turn 12, taking it absolutely flat out

Probably for the last time for at least a couple of years, the F1 cars tacked the fantastically fast entry to Hockenheim's stadium, the old Mobil Kurve, these days known blandly as Turn 12. That label doesn't begin to get across the spectacle of a current-generation car through there, sixth gear with just a brief lift before turn-in to the blind exit right-hander.

On Friday morning the two Mercs and Verstappen's Red Bull appear to be dismissing this corner as if it were nothing, neutrally balanced and flat, confident to use up the outer extremities of exit kerb without lifting the throttle. Every other car, while still flat to the floor after a brief lift on entry, has some sort of understeer. The Ferraris are keeping up a lot of momentum, the understeer is shallow and they look quite similar in behaviour through here to the McLarens. There will be some price to pay in tyre usage but only a little bit in momentum, given that the following 'straight' is hardly worthy of the name before the Sachs Kurve.

But the Renault is altogether a more difficult beast, in that it turns in with that same slight reluctance that obliges the driver to apply a little more lock but part way through the turn, just past the apex, that front finally begins to load up properly and the car gets more rotation. It's almost certainly an aerodynamic trait but it means the car's balance is not consistent through the corner. Daniel Ricciardo is showing remarkable adaptation in that he's carrying in an entry speed that, with the initial understeer balance, looks certain to carry him far wide, except he's anticipating how it's going to rotate further into the corner. It's not a technique that Nico Hülkenberg ever tries in the sister car.

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Est. 1977

The Kirk F. White, 1972 Sebring 12 Hours, Ferrari Daytona Competizione



1972 Sebring 12h

Image courtesy of Revs Automotive Library (revsinstitute.org)

This Daytona was developed for Kirk F. White to contest the GT class at one of the World's great endurance races, it was converted from a production car to full competition specs in period. The conversion work involved Holman and Moody (who built virtually all the competition factory Fords in their all-conquering NASCAR and Le Mans program) and Traco (who were, at the time one of the finest engine shops in the world). The car arrived at Sebring in 1972 with all the competition features as seen today - the features that are synonymous with these great GT cars. Large flared wheel arch extensions, covering 8" and 11" wide alloy race wheels secured by single locking nuts, an alloy chin spoiler, reconfigured light assemblies, a quick release fuel filler exiting through the boot lid, number marker lights, uprated suspension, and brakes from a Mk IV GT40. In all there are just 25 period Group 4 competition Daytonas recognised by the Ferrari factory, and this was certainly the fastest and most highly developed of them all with its unique specification. This car qualifies for some of the greatest events in the historic calendar - the Le Mans Classic and Tour Auto to name but two - and would be welcomed with open arms all around the world. Supplied with Classiche Certification.

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fight. And a fight for the ages it was. As Verstappen recorded his first F1 pole - and Honda's first since 2006 - and Bottas was taken out of contention by a first lap wing-damaging hit from Leclerc, so the race distilled down to Verstappen vs Hamilton, the young pretender leading the king of the pride, leaving the others behind.

Hamilton prodded and pushed, forcing Verstappen to go harder than ideal for the tyres in order to keep out of DRS range. Red Bull pitted its man as soon as he had enough of a gap to rejoin without getting snagged in the Ferraris. So, Mercedes left Hamilton out longer, to give him newer tyres than Verstappen when he rejoined, 5sec behind. The Mercedes race pace was revealed for the first time as Hamilton unleashed everything to slash that gap down to almost nothing within two laps. Game on.

A dizzying dice then ensued as they fought their way through backmarkers, tyre deg and - in Hamilton's case - brake temperatures. Hamilton, with his electrical systems fully armed, used his faster exit out of Turns Two and Three to devour the Red Bull up the hill towards the sixth-gear blind exit of Turn Four - and went for a move around the outside there. But as Verstappen held his line and Hamilton was forced to bail out over the run-off area, so it seemed the Red Bull driver had prevailed during the crisis moment, as Hamilton was forced back into brake temperature control mode.

But so big was their lead over all the others it allowed Mercedes an option: an extra stop for tyres that would be 23 laps newer than Verstappen's, with 22 laps to run. Hamilton was far from convinced but complied and rejoined 19sec behind. Hamilton's pace as he caught up forced Verstappen to ask for more than his tyres could give. Seven laps from the end Verstappen declared his tyres dead. Four laps later Hamilton passed for his seventh victory around the Hungaroring.

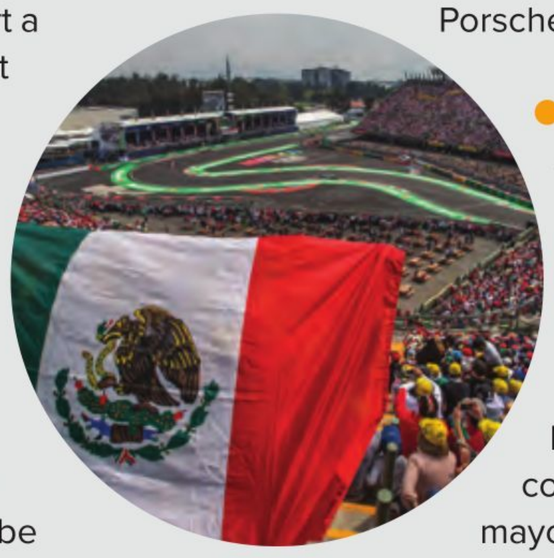
Regardless of getting back on its victory juggernaut, Mercedes entered the summer break under no illusions about the potential threat of the resurgent Red Bull, even if its engine supplier first appeared in the sport only 55 years ago.

Word on the beat

Rumour, gossip and news from the F1 paddock

● **RED BULL** is promoting **ALEX ALBON** to its senior team from the Belgian GP, with **PIERRE GASLY** swapping places and returning to Toro Rosso for the balance of the campaign. Gasly has struggled for form since graduating to Red Bull at the start of this season.

● **LIBERTY** has confirmed that F1's plan is to go to **24 RACES BY 2021**, but to do so with the same number of power units as currently used. However, in discussions about a **22ND RACE** next year, some teams are asking for an extension on the components. "We support a 22nd race [in 2020] if that means more revenue," said Ferrari's **MATTIA BINOTTO**, "but we need to be careful about the extra costs. If for 2021 we are discussing 24 races but no extra engines, increasing the number of units for next year would be simply wrong, because it would mean more revenues but then more costs, which would make no sense."



● Other teams are not supportive of a 22nd race next year, regardless.
CLAIRE WILLIAMS said in Hungary: "I don't even think there should be 21 races. Personally, I think there should be five fewer." All 10 teams are required to be in agreement for an extra race to be added.

● The discussion about a 22nd race has come as the regional Catalunya government is believed to have approved a plan to contribute to funding that would rescue Barcelona's **SPANISH GRAND PRIX** – previously set to be dropped from the calendar next year. The Spanish and German Grands Prix had been expected to make way for the additions of **VIETNAM** and **HOLLAND**.

● **MERCEDES** would not be willing to underwrite a **GERMAN GP** on the 2020 calendar, after having supported this year's race, hence its probable disappearance next season. **HOCKENHEIM**, meanwhile, is being redeveloped to house an extended Porsche driving centre.

● The **MEXICAN GP** has secured a three-year extension to its contract – which runs out after this year's event – meaning it will remain on the calendar until at least 2022. Ahead of the confirmation, Mexico City's mayor said: "I also want to tell you that this is thanks to a group of businessmen who made this possible because this time the city is not using any public funds."

● **MAX VERSTAPPEN**, on being asked after qualifying on pole in Hungary how his **PRACTICE STARTS** had gone, given how bad his getaways from the front row had been in Austria and Germany, replied: "Yeah, they were all good." An amused **VALTTERI BOTTAS**, who'd qualified alongside him in Hungary, chipped in with, "I had a really good practice start."
MV: "Yeah? I had a wheelie off the line!
VB: "Yeah? Me too!"

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Analogue thrills return

In a world of semi-automation, Porsche has gone old-school, says **Andrew Frankel**



The new Cayman GT4 makes you work as a driver, but it rewards you richly for your efforts with a thrilling ride

IT USED TO BE SO SIMPLE. THERE WAS a time when all cars came with manual gearboxes and normally aspirated engines. There was no other way for a car to be. Now some small family hatchbacks and shopping cars can be so configured, but sports cars? Machines you might actually choose to drive for fun from mainstream manufacturers?

Well happily Mazda still makes the MX-5 that way, as does Toyota with the GT86. After that, I'm struggling. You can't even buy a normally aspirated Lotus any more. Audi still makes an R8 without turbos but the third pedal was lost long ago. So thank heaven for Porsche, for this new Cayman GT4 (and its open equivalent the Boxster Spyder) has swapped the unlovely flat-four turbo motor for a new 4-litre flat-six breathing air at atmospheric pressure, and automatic gearchanging is not even an option. In anything you might remotely describe as 'its class', that makes it unique these days.

It shows proper commitment from Porsche to create this new motor for such an apparently niche product. It's based on the 3-litre engine in the new 992-series 911, but shorn of its turbos and necessarily bored and stroked out to the requisite four litres. Indeed this seems like such an effort, I'd be amazed if the same engine is not used for the next GT3, albeit turned up to 11. As it stands it produces 414bhp, a useful 54bhp improvement upon the next most powerful Cayman GTS. Then again, the GTS has more torque and the option of paddle-shifts meaning that, on paper, the GTS remains the most accelerative Cayman despite being the best part of £15,000 cheaper.

A missed opportunity, then? By no means. Porsche has built some very rapid GT-series cars in the past, but not even the very fastest ever felt like pure speed or (the rapid acquisition thereof) was its reason for being. What matters about these cars is that they must be exquisite to drive, even by the lofty standards of 'normal' Porsches.

And the GT4 is. Eventually. I'll share with you that I was a little disappointed at first. I'd read all about the engine and its GT3 front suspension and its bespoke spring and damper rates and got really rather excited by the prospect. But once you've walked past the car with its new aero pack (which doubles the downforce of the old Cayman GT4 with no increase in drag) and settled in the cabin, it all looks very familiar. There's a bit of Alcantara here and there and the odd GT4 badge, but save the optional carbon-fibre seats in the test car (try before you buy, especially if you're generously proportioned), it's very standard in here.

Even the flat-six motor doesn't thrill when it fires up because engines of this configuration were always in Caymans until three years ago and this one doesn't sound particularly savage at all. So you start driving and it feels lovely, but so do all Caymans. There's not much to mark this out as being a particularly special version. Not yet at least.

You have to find some space and make it work, and that requires you to make an effort too. In these days of instant turbo gratification and seamless automatic shifting, you forget you can't just plant a foot on the floor and expect the car to do the rest for you. You have to change down a gear or three, and even then let the revs rise before the engine will do its best work: peak torque doesn't arrive until 5000rpm. The GTS not only has more, it's all there at just 1900rpm.

But how those efforts are rewarded!





"It does that thing where its responses are so close that you feel a part of the machine"

I won't be the first to observe that the amount you put in is commensurate to what you are able to extract, and it's not just the engine that responds to a bit of engagement from the driver: the whole car comes alive.

It does that thing, increasingly rare these days, where its responses are so close to your instructions you feel so much part of the machine that where you stop and it starts becomes increasingly obscure. You can be reminded by some lousy heel-and-toe work that it's not always man and machine in total harmony, but it's even got that covered thanks to an 'auto-blip' button that matches revs to your downshifts. I didn't use it much because I liked the discipline of trying to get it right myself, but I appreciated the thought.

But not as much as I liked the way the car manages to maintain its ride height across the most challenging landscapes of strange cambers, unpredictable road surfaces and tightening radii, while retaining ride quality I'd put at least on a par with that of a normal Cayman. Such interests are usually diametrically opposed. So too the provision of outlandish levels of mechanical grip with just about the sweetest breakaway characteristics I've had the pleasure to encounter in a mid-engined machine. Those who describe its handling as akin to that of an Escort MkII are of course wildly over-egging the pudding, but I can see from whence they come: with a diff strong enough to allow drifting on demand but sufficiently gentle not to permit unchecked understeer, it is a fantastically faithful machine. And as most owners will take theirs on a track, this is an important characteristic, too.

What, then, to make of this split personality? The old Cayman GT4 was somehow a more special car just to get in and drive, but it was slower, its limits lower. This GT4 is almost too quiet and comfortable most of the time because it does too little to remind you what a special car it really is. Then again, in these days of paddle-shift transmissions and turbocharged engines, any sports car with three pedals, a great gearbox and an unadorned multi-cylinder engine will always have a head start over the rest that do not. And when it matters, it delivers absolutely on the promise of its looks and GT badge.

And that is what matters most.

PORSCHE CAYMAN GT4



- **Price** £75,348
- **Engine** 4.0-litres, six cylinders
- **Power** 414bhp **Weight** 1420kg
- **Power to weight** 292bhp per tonne
- **Transmission** six-speed manual, rear-wheel drive **0-60mph** 4.4sec
- **Top speed** 188mph
- **Economy** 25.7mpg **CO_2** 251g/km
- **Verdict** No gadgetry is a big bonus

Messing with the formula

Audi's crossover SUV is a hit, until you look at the alternative

HANDS UP ANYONE UTTERLY confused and bemused by the apparently limitless extent and complexity of car manufacturer model ranges? Mine are both in the air, and I do this for a living.

You might have thought a warmed- over Audi crossover SUV is just the kind of niche within a niche product whose presence within *Motor Sport* may not necessarily enrich our pages. And I'd probably have agreed with you, until I drove it. But as it turns out, this SQ2 has a certain something, in addition to its pleasantly rugged and, for Audi, quite distinctive appearance.

Think of it instead as what it actually is: a rebodied Volkswagen Golf R, still the best all-round fast hatchback going. And now we see this Audi in a rather different light. It's only a little more expensive than the VW, has a more prestigious badge and seems scarcely any slower. So all good then?



The SQ2 has its merits, but doesn't use its underpinnings perhaps as well as it could

Nearly. The problem is that Audi will insist on tuning the car its way. I can see the desire to create a different feel to the Golf, but when the Golf is so damn good, why mess with that formula? The result is a car that rides less well and steers less fluently.

The SQ2 is a very capable small SUV but, like them all, it works only until you consider the cheaper, better hatchback from which it is derived.

AUDI SQ2

- **Price** £36,800
- **Engine** 2.0 litres, 4 cylinders, turbo
- **Power** 296bhp at 5300rpm
- **Weight** 1510kg
- **Power to weight** 196bhp per tonne
- **Transmission** seven-speed double clutch, four-wheel drive
- **0-60mph** 4.8sec **Top speed** 155mph
- **Economy** 33.2mpg **CO_2** 192g/km
- **Verdict** Great, but still not a Golf

Living the Trophy life

Is Renault still royalty in the world of hot hatchbacks?



YOU CAN'T ACCUSE RENAULT OF pulling its punches when it comes to its fast hatchbacks. This Trophy version of the hot Mégane looks to have the dream specification: no hefty all-wheel drive, manual 'box, a limited-slip differential, bespoke suspension, lightened brakes and even a flyweight battery.

It's yours for just over £30,000 which seems very reasonable, especially relative to the same car you can buy in Nürburgring lap record-breaking guise (for hatchbacks) which costs, wait for it... £72,140.

Back in the real world, the Mégane is as focused as its specification suggests with all the good and bad that implies. Because it's quite compact and incredibly grippy, it'll dispatch country roads at supercar speeds. I liked the enthusiasm of an engine based on that in the Alpine A110, but with the boost increased somewhat.

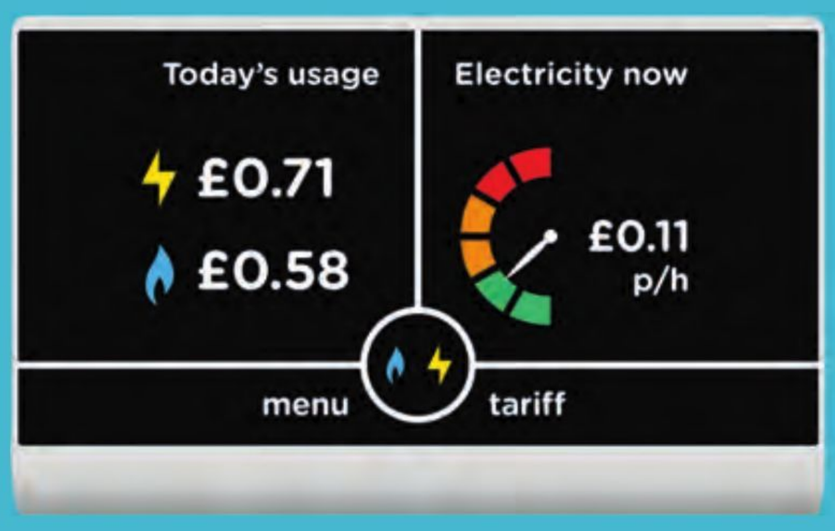
But it is quite narrowly defined. Ride quality is not great and grip levels fall off a cliff in the wet, as you'd expect from such a stiff car. The interior is quite cheap in feel, too. A Honda Civic Type-R looks hideous by comparison, but would be an easier car with which to live and probably no less fun point to point. So if you're a fast Renault devotee, and there are plenty out there, this one won't disappoint; but if you're just after a fully rounded fast hatchback, there are better options available.

RENAULT MEGANE RS 300 TROPHY

- **Price** £31,835
- **Engine** 1.8 litres, 4 cylinders, turbo
- **Power** 296bhp at 6000rpm
- **Weight** 1419kg
- **Power to weight** 209bhp per tonne
- **Transmission** six-speed manual, four-wheel drive
- **0-60mph** 5.7sec **Top speed** 162mph
- **Economy** 34.5mpg **CO_2** 183g/km
- **Verdict** Quick, fun, but it has its flaws



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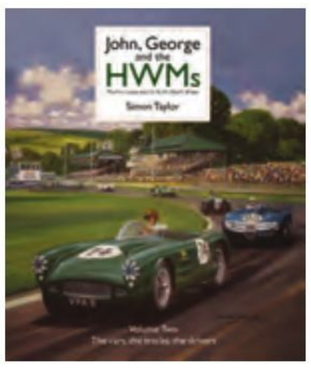
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Sage-green pathfinders

Gordon Cruickshank surveys a rich tale of a team which led the way for Brits abroad



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shop.motorsportmagazine.com



JOHN, GEORGE AND THE HWMs
Simon Taylor
Published by EVRO, £130
ISBN 978 1 910505 32 8

NOT AN EASY TEAM NAME FOR 'furriners' to pronounce, yet when this unknown outfit with its chunky, purposeful-looking Formula 2 cars began snapping at the heels of the Continental works teams in the early 1950s it was suddenly a name to watch.

Of course, we know HWM didn't become another Williams, or even an Aston Martin. From two West London garages, in Hersham and Walton, it blossomed into an amazingly active racing team and subsided once more to a successful (and continuing) car dealership – at least avoiding the fate of Connaught and Alta who simply withered. Those are the bookends of Simon Taylor's work describing how engineer John Heath and racing driver George Abecassis formed a business and a racing team and ended up building their own cars, until Heath's death on the Mille Miglia in 1956 put paid to a brave competition effort.

One volume of this classily boxed pair covers that story, a second the cars, tracks and drivers, and Taylor diverts on the way into 'chapterettes' on people, things and places such as fiery mechanic Alf Francis, the HWM badge (based on John Heath's family arms) and the importance of hill-climbing – something dear to Simon's heart.

But first, the sub-title: "The first racing team to fly the flag for Britain". I tackled Simon over that, and he referred me to his Introduction, which says "Other cars had worn the green with distinction down the years, not least Napier, Sunbeam, Bentley and ERA...", but that HWM's "exhausting programme of three or four cars at two dozen or more events a year represented a comprehensive programme that had never been attempted before". Which is a fair defence. Tiny as it was, HWM would race wherever there was start money, its offset cars doubling as sports or F2 entries, and often mixing it with grand prix machinery. While BRM floundered, HWM was showing that handling and grit made up for power and cash, paving the way for British glory to come.

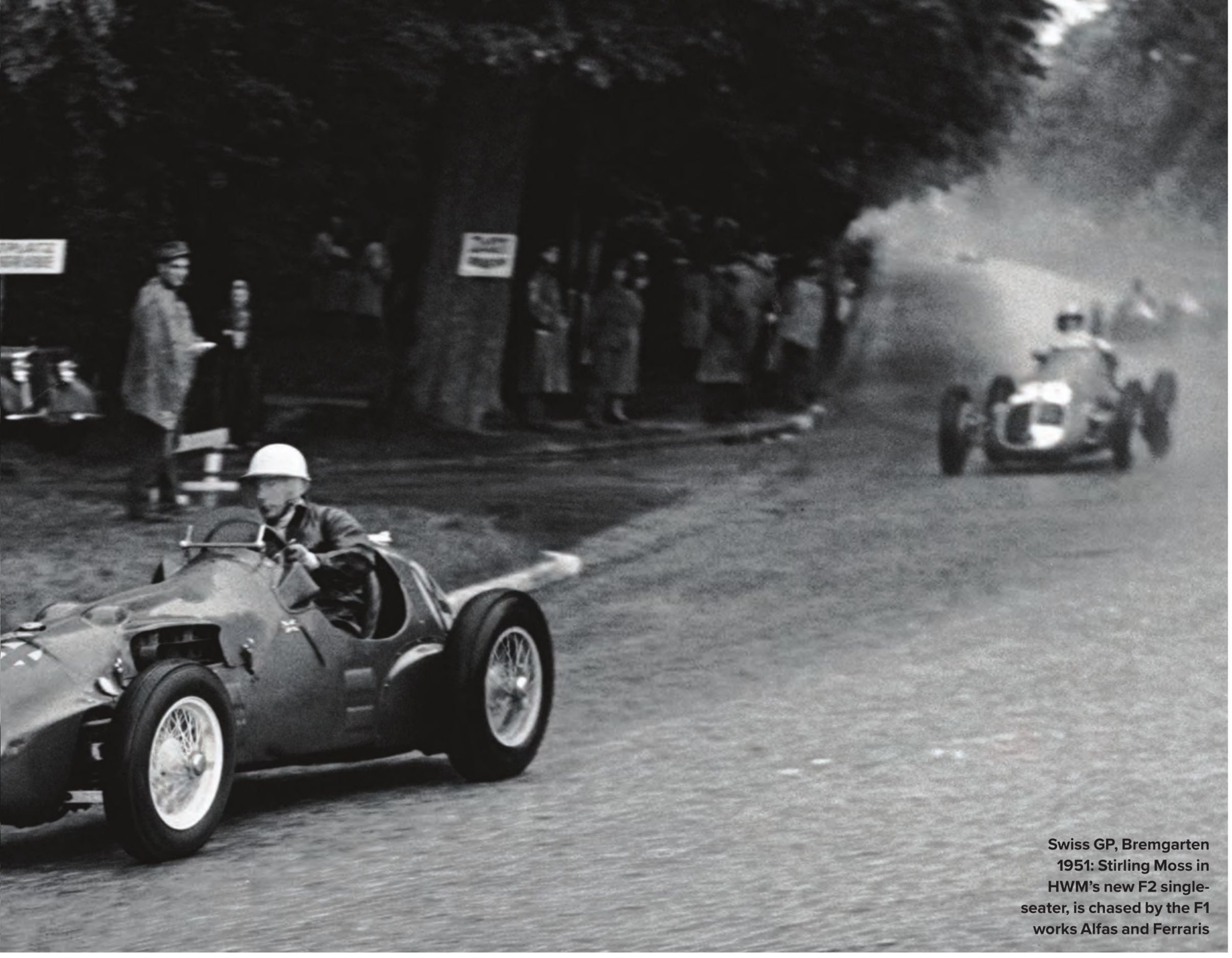
Simon came to the subject in a romantic way: as a schoolboy he was gripped by a picture of the 'Stovebolt Special' (an HWM sports car packing a Chevy V8, in case you've never heard it tackling Prescott), dreamed about it long after and 43 years later bought it. He's competed with it ever since. The burgeoning HWM files he assembled from that point were the basis for the book, and he has clearly burrowed into every written record and tackled everyone relevant he can find, using personal letters and photos to flavour the history with reminiscences both amusing and tough.



Naples 1950: Moss headed Cortese's Alfa until a major smash – but Macklin's HWM was second

Many photos of the team in the workshop, loading trucks or pausing at customs posts give you a rich taste of what it was like to grind over mountain passes in a 30mph converted bus with feeble brakes, one person trying to sleep in a hammock while one drove, with bribes of booze and dirty pictures to smooth border crossings and the constant risk of getting lost. One mechanic dropped off the back of the convoy and was found in tears unable even to recall which circuit they were heading for. Another was discovered shivering and snow-covered hours after the race car he was steering broke loose from the truck towing it, and nobody noticed. Yet they were so keen they put up with all this even though Heath told them he could only afford fish and chips and Woodbines as overtime pay.

Does that make them sound a shambles? They weren't. That was the normal life of a race team then, and this was a tight-knit operation on a borderline budget which nevertheless gave a young Stirling Moss his first works drive. Moss raced an HWM more



Swiss GP, Bremgarten 1951: Stirling Moss in HWM's new F2 single-seater, is chased by the F1 works Alfas and Ferraris

MOTORSPORT IMAGES

"It was a tight-knit operation on a borderline budget which gave Moss his first works drive"

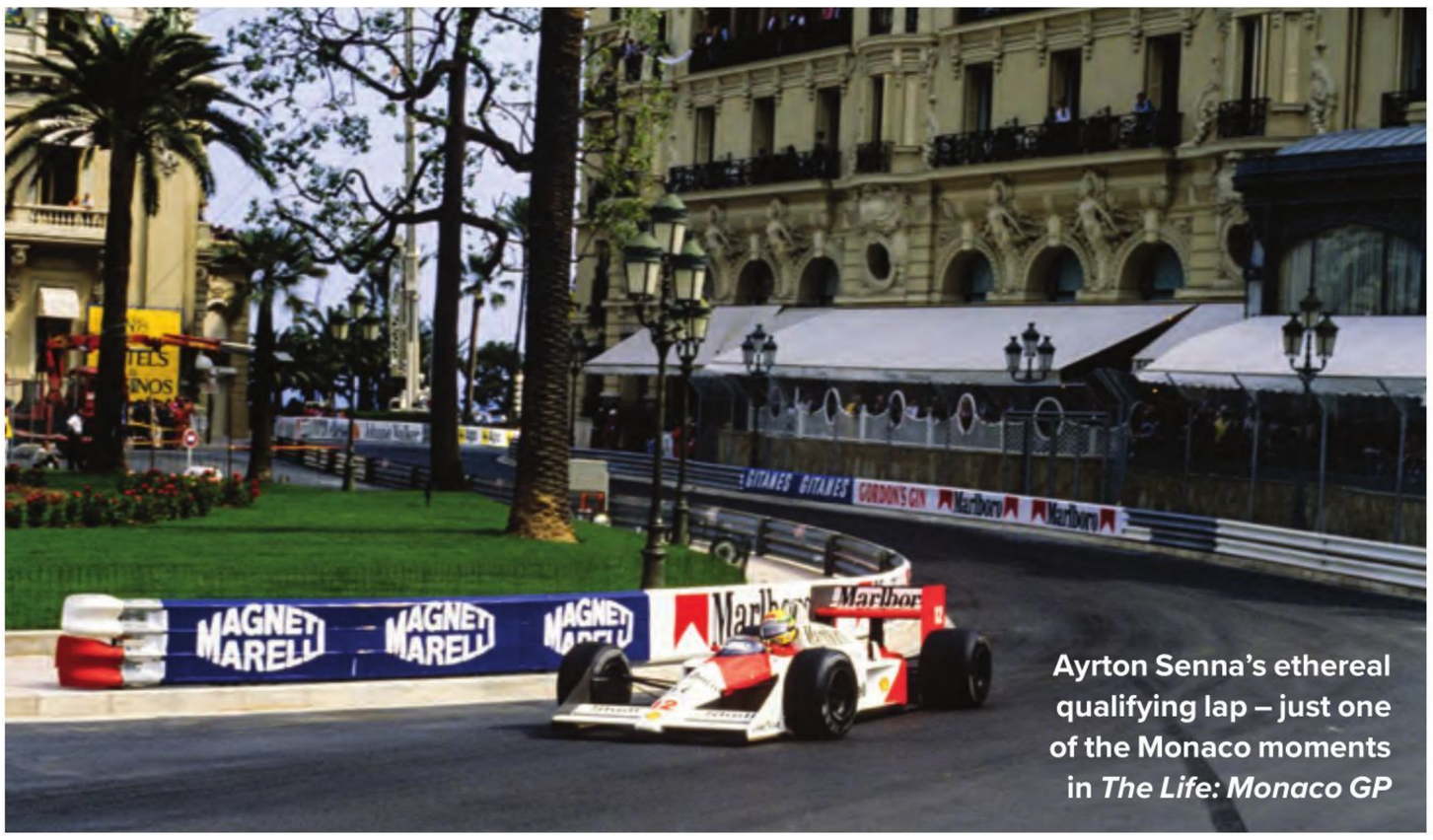
than 40 times and in his Foreword points out that for a while HWM was the most successful British single-seater team of all. In Formula 2 the Alta-engined cars were fast if not always reliable – the eternal story when money is tight – and attracted such drivers as Peter Collins, Lance Macklin and Duncan Hamilton, and if the 1954 essay into F1 failed, the later Jaguar-engined sports cars held their heads high, especially the two which raced as HWM 1 (the first of which contested the Mille Miglia with *Motor Sport's* DSJ as navigator).

All that is mere results; more interesting is hearing what it was like to work for, or to run, a little team. How draughtsman/engineer Eugene Dunn discovered the team designing its chassis with chalk on the shop floor, or that they called Heath 'The Baron' while the mechanics were 'the 'Orribles'. Yet that was jest; the boss would muck in when needed. Languid and always dapper, Abecassis, of course, had a racing career outside HWM and Taylor weaves that into his tale along with the 1950s racing scene. Heath also raced but knew he wasn't in the same class, so it's sobering to learn that he had "a funny feeling" about that fateful Mille Miglia, reluctantly going ahead just because everything was arranged. More painful is a picture of the hasty will he scribbled the night before "in view of the hazards of motor racing".

A year or so after that crash the team's racing dried up and HWM reverted to dealing in competition and road cars of all sorts. It still exists in the same place, now the world's oldest Aston Martin dealer.

A mere 19 cars emerged from the HWM works and Vol 2 lists their stories, along with HM Altas, Healeys and Facel Vegas and a coupé that might have sired some road cars – plus a section headed Of Arguable Ancestry – before detailing tracks where they raced (nice maps and posters) and adding profiles of HWM drivers. Amusingly this volume starts with a warning "Beware chassis numbers!". Packed with quality illustrations, both sections feature Michael Turner paintings on their covers. But it's those insider stories, entertainingly relayed, that make this so much more than just a history.

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Ayrton Senna's ethereal qualifying lap – just one of the Monaco moments in *The Life: Monaco GP*

MOTORSPORT IMAGES

A sideways look

Famous highlights of the grand prix world's most glamorous track – plus some things you may not know, says **Robert Ladbrook**

MONACO IS PERHAPS THE most complex Formula 1 venue of all, and remains an enigma to this day. Whatever your views on its suitability as a modern grand prix race venue - many deride it for its lack of action with today's faster, wider cars - there's no question that the principality has been the basis for more motoring stories than perhaps anywhere else. That then explains why author Stuart Codling has taken a rather more abstract approach to this work, as a refreshing alternative to your usual motoring-flavoured book. Part sporting digest, part cult memoir, part historical document, part travel guide: even if you think you know everything there is to know about Monaco's quirks, you'll undoubtedly find something new here.

The usual bases are covered, such as the track's development and the changing safety demands placed on it by drivers dunking their bare-bones single-seaters into the harbour. There are also less conventional chapters on Monaco's royal family, its political relationships with neighbouring France and wartime positioning, and even an entire section dedicated to Grace Kelly.

Those seeking pure motoring content are well catered for, with a rich history of the race's origins and defining moments over time, including a fascinating look at what happened to William Grover-Williams, winner of the first ever Monaco race in 1929. A character with a mysterious past, some thought him a real-life James Bond-style spy, some reported him executed by the Nazis, some reckon they got his autograph after bumping into him at circuits 20 years later...

Monaco's relationship with all things celebrity is explored, as are its sightseeing attractions, gambling obsession and there's even a few Airbnb recommendations for those not willing to shell out for a luxury hotel. Throw in cycling with F1's secretive 'Chain Gang', the mystery of Jaguar's missing $300,00 diamond, recollections of Ayrton Senna's out-of-body qualifying lap and a selection of quotes and sources from media around the world - including *Motor Sport*'s Bill Boddy - and you end up with a thoroughly researched and entertaining distraction from the norm. It's also beautifully presented, with extended binding and luxurious matte paper. My one gripe is a lack of immediate captions for many pictures - there are some on a dedicated section at the back, but it can be a nuisance to flick to that for reference. Overall though, it's well worth a read.



THE LIFE: MONACO GRAND PRIX
Stuart Codling
Published by Motorbooks, £20
ISBN: 978-0-7603-6374-4

RALLYING 2018: MOVING MOMENTS

Anthony Peacock, Reinhard Klein, Colin McMaster

McKlein – the photographic amalgamation of Reinhard Klein and Colin McMaster – is the definitive name in rallying photography. So, whenever it puts a new book out you're guaranteed some great shots. That is true of this latest update, which essentially serves as a season review for the main series in world rallying during 2018. Each WRC round is covered, with editorial telling the story of each round and a 'moving moment' picked out for each as a highlight. The German and British championships also get their turn, as do the WRC2 and Junior WRC sub-categories. But you'll buy this for the photography first and foremost. The addition of spotters' guide-style barrages of cars from samey angles from each round drags a bit however, and leaves you wondering if it would have been better to have a little less in order to make more of the few. **RL**

Published by McKlein Publishing, £49
ISBN: 978-3-947156-03-0

MINI SCRAPBOOK

Martin Port

It is doubtful if a single syllable remains unspoken on the topic of Sir Alec Issigonis's signature design, and yet... This isn't a simple rehash of anything that's gone before, but a bright, engaging pictorial romp through 60 years of the British motor industry's most recognisable creation (plus many derivatives that never progressed beyond concept stage). Author Martin Port provides much engaging background detail, but the outstanding achievement is the curation of some wonderful photographs – featuring, among others, Peter Sellers, Christine Keeler, period advertisements, scale models, slot cars and a beautifully timed shot of Malcolm Leggate's inverted 1275GT at Castle Combe in 1977. It is also an object lesson in how to produce a high-quality book for a very competitive price. Recommended. **SA**

Published by Porter Press, £20
ISBN 978-1-907085-94-9

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1982 ATS D5 F1 / 1987 PORSCHE 962 C / 1989 TIGA GC 289 C2 / 1995 VENTURI 600 LM / 2000 LOLA B2K/40 / 2009 ORECA FLM09t

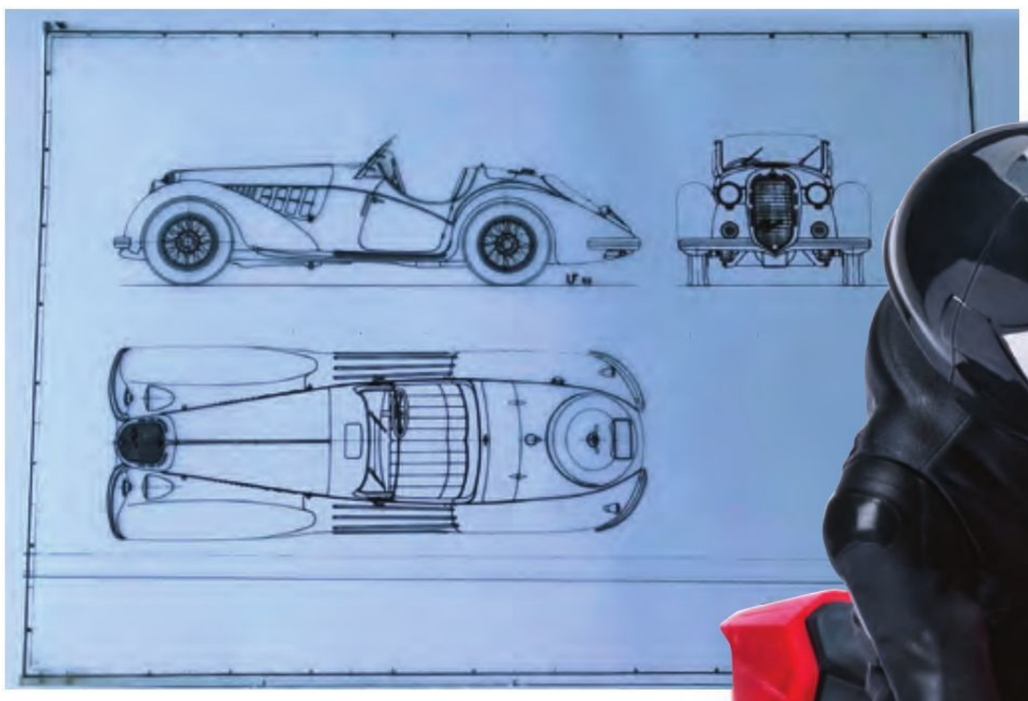
Product of the month

Power for your overdraft

You could buy a whole car, but why bother when you can have a real Formula 1 engine?



IN SEARCH OF A TALKING POINT STATEMENT piece for your front room? Have enough spare change for a well-sorted sports car hanging around? What you need is an actual F1 engine... on a plinth! Ferrari has recycled the spare versions of its all-conquering three-litre V10 F2002 GA engine, which powered both Michael Schumacher and Rubens Barrichello to 15 wins from the 17 races that year - Schumacher's tally being 11 on the way to his fifth world title. Each unit is meticulously polished, so no fear of oil stains on your Persian rug, and mounted on an engraved display plinth and supplied with a certificate of authenticity.
£75,000, Store.Ferrari.com



ALFA ROMEO BLUEPRINTS

Maybe you can't stretch to an actual pre-war Alfa, but here's a rare chance to purchase a pre-war Alfa blueprint. Collector Studio has 30 on offer covering sports and grand prix cars from the 1929 6C and Bimotore to post-war TZ and Duetto, some redrawn in the 1960s by Alfa designer Luigi Fusi, some his own 1960s work. On acetate, around 3ft wide.
Prices start at £175, collectorstudio.com

DUCATI PANIGALE V4 RC BIKE

Ever fancied popping a wheelie with one of Ducati's range-topping Panigale superbikes without the fear of putting the £35,000 machine through a hedge and you flat on your bum? Well, now you can do exactly that whilst also having the benefit of saving a heap of cash on both the bike and its tyres. Canadian manufacturer Spinmaster has partnered with Ducati to create this Upriser remote control model, accurately recreating a Panigale V4 and rider. It allows you to pull wheelies at will, and do donuts for days. It's also very clever, thanks to some revolutionary technology on the rear wheel helping it balance, even on uneven surfaces and top out at a heady 12mph. *£149.99, Spinmaster.com*



This toy is available from the Motor Sport shop *shop.motorsportmagazine.com*



FORZA HORIZON 4 LEGO SPEED MASTERS

Anybody familiar with this section will know by now that LEGO is most definitely not just a toy. We love it. And now, thanks to the developers of Forza Motorsport, we can all live out those fantasies of actually getting to drive our brick-built creations. The Danish firm's Speed Champions collection is brought to life through this expansion pack for the Forza Horizon 4 Xbox game, allowing you to jump between the photo-realistic real-world cars and the LEGO originals such as the McLaren Senna, Monte Carlo Rally Mini and Ferrari F40. It's worth it for the in-car viewpoint alone. You do have to already own, or buy, the Forza Horizon 4 game, then the LEGO pack is a downloadable extra.
Forza Horizon 4 Ultimate Edition (Includes all DLC) £79.99, LEGO Speed Champions expansion pack: £15.99, Xbox.com

LEGACY LEGENDS BRAWN GP MUG & COASTER

If you're after some retro racing liveries for your daily brew then Legacy Legends' range of racing-themed mugs is a must. Each design is modelled on either a classic race or rally car livery, with added patina and lovely aged oiliness and rustiness. But they also do more modern variants. Why not mark a decade since Brawn GP's F1 success with these matching mug and coaster sets?
Coasters from £4.95, mugs from £7.95, legacylegends.co.uk



EPIC MERCEDES-AMG F1 CHAIRS

Bring some Formula 1 prestige, and some much-needed comfort, to your backside with this officially licensed office chair of the soon-to-be six-time constructors' champions. Made by German gaming seat company Noble Chairs, it features embroidered three-pointed stars down the spine and is fully adjustable. Not guaranteed to make you type like Lewis Hamilton.
£350, noblechairs.com



MEMORABILIA, CLASSIC AWARDS

Just because you didn't win them doesn't mean you can't show off these vintage trophies



ISLE OF MAN TT WINNER

Original 1958 trophy presented to a rider at the TT, but unknown who won it. Complete with original programme.
$750, racinghalloffamecollection.com



AJ FOYT PLAQUES

Presented to Foyt commemorating wins in his home state of Texas. Larger one celebrates both 1976 USAC Stock Car and IndyCar wins. Smaller is for a 1978 USAC Stock Car win.
$1500, racinghalloffamecollection.com



NASCAR WINTER NATIONALS

Base made of marble, wood and brass with brass car atop. Daytona International Speedway, 1962. Winner unknown.
$1000, invaluable.com



Drag racing might not capture too many motor sport headlines, but as a spectacle it has few peers

LYNDON McNEIL

Thunder enlightening

Drag racing at Santa Pod offers an eye opening and raucous change of pace from other forms of motor sport

September 5-8, Santa Pod Raceway, Great Britain

MINI BREAK

On paper it sounds almost trivial - a competitive bout that lasts fractionally less than four seconds. That, though, is all that separates the leading FIA top fuel dragsters from terminal speeds in excess of 300mph. The 2019 European Championship season ends as it began, at Santa Pod - often overlooked, but operational since 1966 and one of the UK's most charismatic motor sport venues.

It is also a welcome survivor. With Shakespeare County Raceway (near Stratford-upon-Avon) having closed, to make way for a housing development, and York Raceway presently inactive, Santa Pod is for now the UK's only permanent drag strip.

Few things in life can match drag racing's capacity for sensory overload. It's a short, sharp fusion of light, smoke and sound. Particularly the latter...

While the top fuel drivers generate the headline numbers, the support categories showcase boundless creativity, some of it a product of old-fashioned home engineering - expect to see everything from lowered, bewinged Ford Populars to Mk1 Cortina estates (via, perhaps, a Morris Marina van).

And if you think some of the cars stray beyond the boundaries of common sense, wait until the bikes appear (Frenchman Éric Teboul will be doing 200mph demo runs on a rocket-powered two-wheeler). There are countless sideshows, too, including Granny Turismo - as far as we know the world's only shopping trolley dance display team.

The meeting begins on Thursday, when the FIA classes don't run, but gets fully into its stride on Friday - when there is a twilight qualifying session for top fuel and funny cars. Adult Sunday tickets start at £35, kids under 16 are admitted free and there is no supplement for paddock access. Details can be found at santapod.co.uk/eurofinals.php.

Stout ear defenders recommended...

LOCAL KNOWLEDGE

- **HOW TO GET THERE** Postcode is NN29 7XA, but Santa Pod advises ignoring your sat-nav and exiting the northbound A6 at Wymington. From the M1, head east along the A45 from J15, towards Wellingborough, and follow signs.
- **ALSO GOING ON** Monster trucks, stunt driving, funfair, Battle of Britain Memorial Flypast, drag passenger rides in a two-seater, live music, full camping facilities.
- **DON'T MISS** Fancy some time in Northants? The WEC is at Silverstone on Sept 1 (*see right*), while the International GT Open takes place at the same venue on Sept 7-8.

WEC: ROUND 1

Aug 30-Sept 1, Silverstone

With the super-season long since done and dusted, the World Endurance Championship settles into its new autumn-to-summer seasonal pattern. The European Le Mans Series forms part of the supporting cast.

FORMULA 1: ROUND 13

Aug 30-Sept 1, Spa, Belgium

It's a touch under three hours from Calais – assuming the Brussels ring road is clear – and one of the most accessible mainland European tracks for UK dwellers is also one of the best. Book now.



GOODWOOD REVIVAL

Sept 13-15, Goodwood

The 22nd edition of what has become a popular staple on the British social calendar. The format rarely changes, but there's still nothing else quite like it. Except perhaps the Goodwood Members' Meeting...

HISTORIC SPORTS CAR CLUB

Sept 21, Brands Hatch

A one-day clubbie on the shorter version of Brands. Pretty much the whole venue is viewable from the Paddock Hill grandstand – a perfect platform from which to watch Historic Formula Ford.

BRITISH SUPERBIKES

Sept 20-22, Assen, Holland

A traditional motorcycle racing temple – and the only overseas venue of the campaign for the BSB warriors. Customary free pit walks available. Dickies British Supersport Championship also features.

MORE SEPTEMBER EVENTS

Sept 13-15	MOTOGP, Misano
Sept 14-15	BRITISH GT, Donington
Sept 14-15	BTCC, Knockhill
Sept 20-22	MOTOGP, Aragon
Sept 21	VSCC 6 Hrs, Snetterton
Sept 21-22	INDYCAR, Laguna Seca
Sept 29	NASCAR, Charlotte

TRACKDAYS. RE(DE)FINED.

Getting on track is the ultimate thrill for any true petrolhead. You can also drive these legendary race circuits for yourself - but in the best possible way!

It's all here - the Nürburgring, Spa-Francorchamps, Dijon Prenois, Ascari Race Resort and Circuit Portimao; something for every taste!

There are few things more exciting than testing yourself against the Nürburgring, or climbing Eau Rouge Corner at Spa-Francorchamps.

A relaxed, sportsman-like atmosphere and limited entry numbers on RSR Premium trackdays mean you can finally experience both of these circuits (and more!) the way they should be experienced!

Bring your own favourite "track-tool", or hire a car from the extensive RSR sports car fleet - there's just no excuse not to get on track!

People are raving about the quality of the track time during these RSR Premium Events, so get in contact today to reserve your own space!

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- 29.07.2019 (Mon)
- 06.08.2019 (Tue)
- 09.09.2019 (Mon)
- 18.10.2019 (Fri)
- 19.10.2019 (Sat)
- 07.11.2019 (Thu)

Nürburgring Nordschleife (Germany)
- 26.08.2019 (Mon)

Dijon Prenois (France)
- 28.10.2019 (Mon)
- 29.10.2019 (Tue)

Ascari Race Resort (Spain)
- 18.04.2020 (Sat)
- 19.04.2020 (Sun)

Circuit Portimao (Portugal)
- 21.04.2020 (Tue)
- 22.04.2020 (Wed)

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Motor Sport live

An exciting programme of live events will allow readers to get closer than ever to some legends of the sport

In the slipstream of our successful Formula 1 preview evening in London earlier this year, *Motor Sport* is gearing up for a series of exciting reader events this autumn. Each is designed to give readers the opportunity to engage more closely with the magazine, to chat freely with the editorial team... and, at our new Game Changers evenings, to quiz some of the most interesting and influential personalities to have graced our sport.

More details of further events will be released in due course, but in the meantime we hope to see you at any or all of the below very soon.



TRACK DAY

Donington Park

Donington Park might have changed significantly since it hosted spectacular pre-war grands prix, but it remains one of Britain's most popular and engaging venues - fast, flowing and littered with significant elevation changes.

Motor Sport track days differ from the norm. In addition to time spent on the circuit, participants will be able to draw on advice from expert instructors - including Tiff Needell, who will also participate in a Q&A session to discuss his career both behind the wheel and in front of the TV camera.

Date Tuesday, October 22, 2019
Time 7.30am-5pm
Location Donington Park GP Circuit, Castle Donington, DE74 2RP
Ticket £425. *Lunch and Tiff Needell Q&A included*



TRACK DAY

Brands Hatch

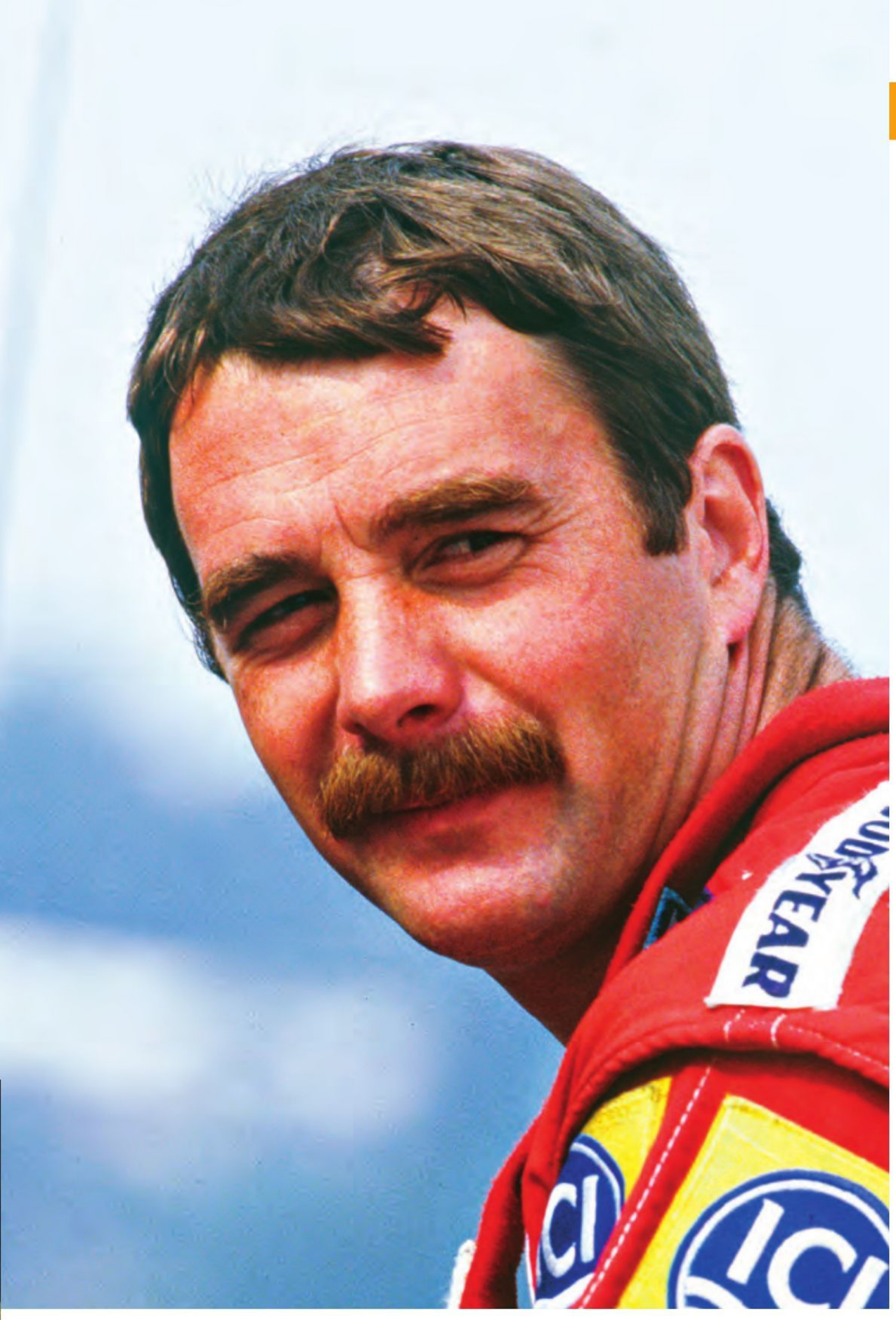
The British Grand Prix's alternate home from 1964 until 1986, Brands Hatch has hosted almost every type of motor sport on two, three and four wheels. Taken far more quickly than might seem possible to the naked eye, Paddock Hill Bend remains one of UK racing's greatest - and most rewarding - challenges.

As at Donington Park, expert instructors will be on hand to offer useful tips - and Tiff Needell will again be present, to share both advice and some fascinating stories from his twin careers as a racer and a broadcaster.

Date Wednesday, November 13, 2019
Time 7.30am-5pm
Location Brands Hatch Indy Circuit, West Kingsdown, DA3 8NG
Ticket £250. *Lunch and Tiff Needell Q&A included*

SPECIAL OFFER

Book both *Motor Sport* track days and receive a £10 discount. Use code MOTORSPORT2019 at the checkout. For reservations, *motorsportmagazine.com/events* or call 0843 453 3000



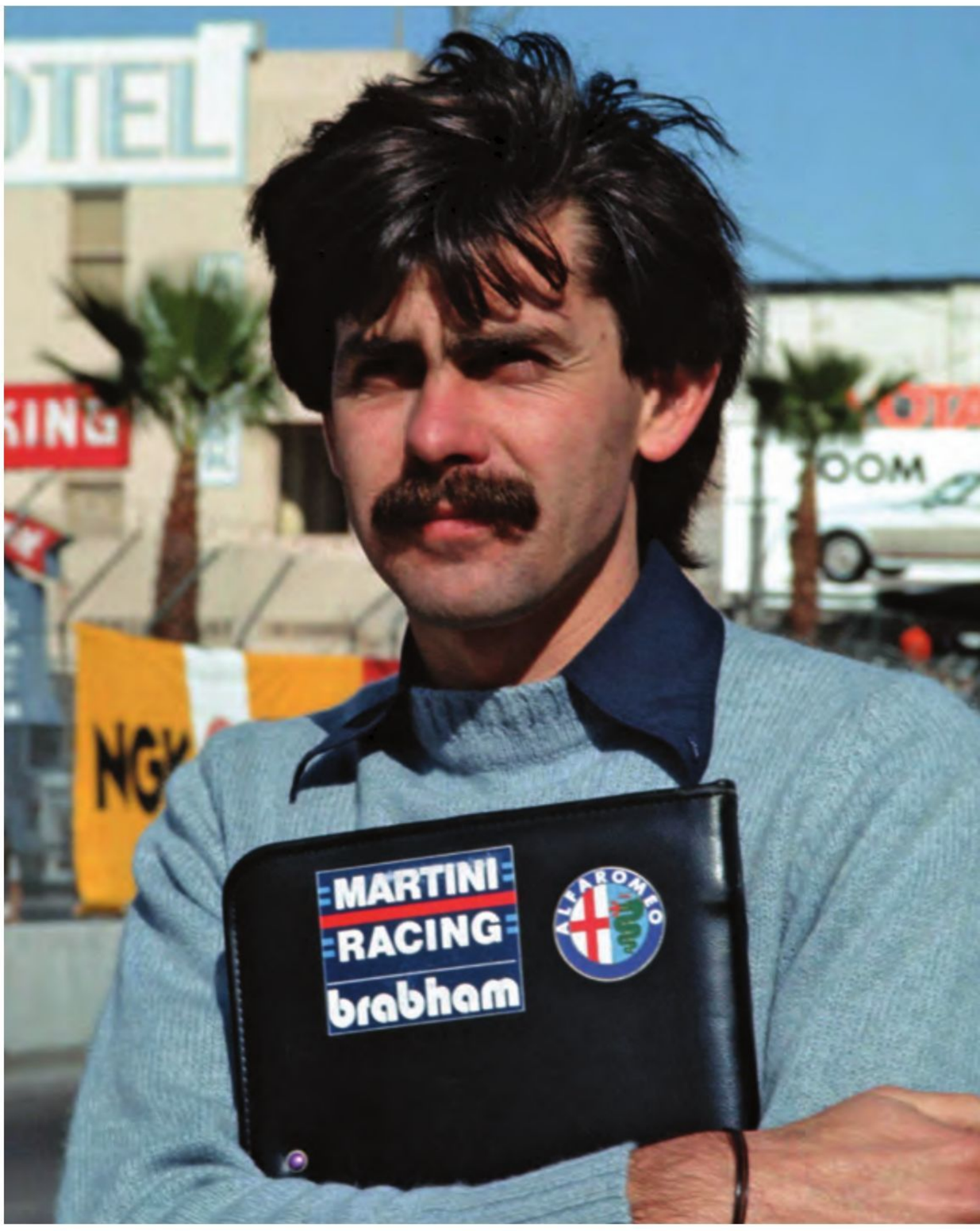
GAME CHANGERS

Nigel Mansell

Join *Motor Sport* for an exclusive evening with 1992 world champion Nigel Mansell, who played a major role in making Formula 1 headline news during an enduring series of epic duels with such as Ayrton Senna, Alain Prost and Nelson Piquet. He came within a blown left-rear tyre of the title in 1986 and was one of the world's most recognisable sports stars by the time of his coronation six years later. He subsequently won the CART World Series and since his retirement from racing has gone on to become both a scratch golfer and a member of the Magic Circle (his card tricks in the *Motor Sport* office a few weeks ago left us scratching our heads for days afterwards).

Mansell's busy schedule allows precious little time for public appearances, so this is a rare opportunity to listen to one of Britain's most charismatic and successful racers. After being interviewed on stage by members of the *Motor Sport* editorial team, he will take questions from the floor before making himself available to sign merchandise and pose for photographs.

Date Tuesday, September 10, 2019
Time 6.00-8.30pm
Location Central London
Ticket £60. *Welcome drink included*



GAME CHANGERS

Gordon Murray

Born in South Africa but based for many years in the UK, Gordon Murray is one of motor racing's most celebrated innovators - and his cutting-edge ideas continue to break fresh ground in a variety of domains.

Having forged his reputation by overseeing successful Formula 1 designs for Brabham and, subsequently, McLaren, Murray turned his hand to the McLaren F1... which was never intended as a racing car yet scored outright victory in the 1995 Le Mans 24 Hours.

A self-confessed 'problem solver' with a passion for wine, architecture and rock music, his latest initiative is the T.50 - a V12-powered three-seater with a £2 million price tag and a mission to rewrite the supercar rulebook.

He is the very definition of a game changer and *Motor Sport*'s evening with Gordon will be a perfect opportunity to find out what makes him tick, the source of his inspiration and, of course, recollections of his time in F1.

Date Friday, September 20, 2019
Time 6.00-8.30pm
Location IET, 2 Savoy Place, London WC2R 0BL
Ticket £50. *Welcome drink included*

SPECIAL OFFER

Book tickets for both Game Changer evenings and receive a £10 discount. For full details, go to *motorsportmagazine.com/events* or call 020 7349 8491

Diving into the history books

Fifty years ago Doxa revamped the diving watch industry, and now celebrates that landmark with some special editions

FROM THE 25TH ANNIVERSARY of the revival of A. Lange and Söhne to the half-century of the famous Rolex 'cyclops' date window, 2019 has been a year of horological birthdays - with one of the more notable being a diving watch that's become a cult collector's piece.

The model in question is the Doxa Sub 200 T.Graph that became the production version of the SUB concept shown at the 1967 Baselworld watch fair. As well as being water resistant to 300 metres (100 metres more than the Rolex Submariner), the SUB concept also featured a patented rotating bezel incorporating the U.S. Navy's 'no decompression' limits, a ratchet bracelet clasp and a screaming orange dial.

The first watch to use the colour, the Sub Concept was not designed merely to look the part, but as a functional instrument that was obtainable only from dive shops.

Doxa's product boss, Urs Eschle, was inspired to make such a serious underwater tool by the burgeoning number of magazine articles, documentaries and TV shows that came about following the perfection of SCUBA during the 1950s. Diving watches, such as the aforementioned Submariner and Blancpain's 50 Fathoms, had been available for more than a decade, but they were mostly worn by military and professional divers and were expensive.

Eschle saw a market for a more affordable watch made for the growing army of amateur divers. In 1962 he developed the original Doxa Sub with the help of Claude Wesly, a member of aqualung co-inventor Jacques Cousteau's underwater exploration team.

Eschle refined the range, releasing both the Sub 200 T. Graph and the Sub 300T Conquistador in 1969, the latter being the first to feature a helium release valve in order to prevent a build-up of tiny molecules of the gas from blowing the crystal off during a diver's ascent to the surface.

The SUB 300T and its derivatives became the default equipment of many professional and amateur divers, even finding fame in film on the wrists of Robert Redford in 1975's *Three Days of the Condor* and Matthew McConaughey in 2005's *Sahara*.



To mark both the 130th anniversary of the Doxa dial name and the 50th anniversary of the Sub 200, the firm is introducing two special models - an 18 carat gold Sub 200 T. Graph powered by an original Valjoux 7734 movement and available in just 13 examples, and a steel re-issue of the standard Sub 200 that will be released in an edition of 130. *Doxa SUB 200T Graph in gold. £37,000 on rubber strap, £59,000 on special request gold bracelet; SUB 200 130th anniversary, stainless steel (pictured), £1000.*



First designed for drivers, but made considerably more famous by becoming the first watch to be worn on the moon during the Apollo XI expedition of 1969, the Omega Speedmaster has been re-commissioned in this platinum-cased special edition. Fitted with a 'reborn' version of the Calibre 321 hand-wound movement used in the original 1957 model, it gets an onyx dial, while the three subdials are made from meteorite. *Omega Speedmaster Moonwatch 321. £45,000 omega-watches.com*



BAMFORD WATCH DEPARTMENT started out as a maverick maker of bespoke Rolex models. Now it is the official customiser of TAG Heuer and Zenith - and has partnered with jeweller/artist Black Badger (AKA James Thompson) to create 10 Carrera models with dials made from 'Fordite' - the name for the accumulation of overspray in automotive paint booths. The dials are made by slicing the surplus paint into discs, revealing the unique swirl of colours within. *BWD X Black Badger Fordite TAG Heuer Carrera £5500*

Precision is written by renowned luxury goods specialist Simon de Burton

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Left: Stig with a young Tom (front, left). Right: A much more mature Tom on duty with BMW in American GT racing

BMW

RACING LIVES

Stig & Tom Blomqvist

FROM RALLYING ROYALTY TO racing at one of the highest levels, the Blomqvists have conquered two of the major disciplines in motor sport. Stig enjoyed a 33-year World Rally Championship career that culminated in him taking the 1984 WRC title, having driven for brands such as Saab, Subaru, Audi and Mitsubishi. Tom rose to prominence in junior single-seater racing, winning the Formula Renault UK title in 2010 before starring in F3 and landing a factory DTM deal with BMW. He's currently racing GT machinery for the German brand.

Interviews by James Mills

STIG: I don't know why my parents came up with the name Stig for me; they just wanted a name that was different to my father's, as we're both named Lennart.

My dad did some rallying, at a local level, and so did one of my uncles, and it was looking quite fun. My first play with a car came when I was about seven or eight. I'd drive around at the family's summer house, outside Örebro, but I soon went further.

Saab started to notice how I was going in local rallies. It was going that well, so in 1965 it started to help me, saying I could borrow engines and gearboxes and bits for my car, and that continued the next year.

By 1969, at the RAC Rally, I got full support from Saab. I was entered in a 96 V4, and I remained with the brand until 1980 when it stopped rallying, because it said it didn't have a car that was suitable for rallying. It was sad.

The Saab 99 Turbo, in the beginning, was quite normal to drive. I didn't have to do much to adapt my style. The turbo was quite small and the engine was not tuned that much, but the response was there. It was only later on, as we got a bit more power, that it become a bit more tricky to drive.

While Saab was waiting for the Turbo to be homologated, I got the chance to drive the Lancia Stratos. It must have been Sweden, 1978, and because Saab was the importer of the little Autobianchis it had a bit of connection with Lancia, so it made the arrangement for me to drive the Stratos on the Swedish Rally. The car was fantastic. It was such a nice car to drive; the balance and the response and whole set-up. I could have happily run off with the Lancia, but I was under contract with Saab!

At my first test drive with the Audi Quattro, in Ingolstadt, I couldn't believe

what a big difference there was. Four-wheel drive was incredible; the traction out of corners was really good. It was a big step.

Some drivers complained about the weight at the front and understeer, but for me, coming from front-wheel drive, it was quite easy to adapt – I already knew how to manage understeer and my technique worked well with the Audi. I don't think there has been any rally car as influential; everyone had to think differently for it.

Hannu [Mikkola], Walter [Röhrl] and Michèle [Mouton] and I were all competitive. It was quite difficult for Audi to get the whole thing working smoothly but we got on well enough. Today's drivers have it tough. The cars are so closely matched, because of the regulations, that the drivers cannot afford to make a single mistake or they're 10 seconds off! In our time, the stages were so long and the cars so different that we could have a puncture and catch up again.

I don't think the Group B cars got too powerful. We would have liked to have more power! The sport was really unlucky; a year later the Group A cars were beating all the stage records. Henri's [Toivonen] accident was the bad one but the biggest issue was control of the crowds and positioning people safely, especially after Portugal [in 1986].

I met Kim, Tom's mother, at Rally New Zealand in the early '80s. When Tom was young we bought him a quad bike and you could see he had some talent, skidding around the place. It was only when I took him to a friend's local kart track that he started to show an interest in racing.

When we separated, I was still travelling a lot, so we were concerned about the impact on the children. Tom looked after himself really, and did a good job for himself. For example, in 2009 he did the Swedish Formula Renault and he was sending emails to the sponsors, and they thought, 'Bloody hell, he's 15 yet he is writing and talking like he's much older.'

I gave him some advice along the way, but to be honest he did a very good job himself.

I don't own any of my old rally cars, and wouldn't try to track one down now. The prices are crazy now for an original one! I'm lucky to have worked for so long and be paid until 2006. Since then, I've done testing and also been a brand ambassador for Audi, so I have been lucky, as we weren't paid anything like today's drivers. And this year I have started the Stig Blomqvist Academy [a winter performance driving school].

TOM: I live in Monaco, where I'll be out running and pass Lewis Hamilton walking his dog or Novak Djokovic jogging.

I do a lot of road cycling. There's a great little community of us who do it; it's heaven for riding here – the roads, the weather, the views. I'd go with Alexander Wurz, Stoffel Vandoorne, Brendon Hartley, Paul di Resta, and sometimes we'd end up riding with an ex-pro cyclist, so the stakes would be raised!

It's strange; here you are completely surrounded by success in all walks of life. It puts life in perspective, you can keep wanting more, and I think that sometimes can be a bad thing. I moved to New Zealand when I was six. Mum wanted to move because she'd grown up there, and she wanted to take my little brother and I there. It was a great place to grow up.



Stig Blomqvist's world title came in 1984, courtesy of five wins, including victory on Rally Sweden in the Quattro A2

MOTORSPORT IMAGES

It wasn't until 2009 that I was pushing my dad about starting to race cars. I left school at 15 and went to live with my father in Sweden and raced in Swedish Formula Renault. Living with Dad was a bit weird. We were close, even though we'd lived so far apart, but I was still young, didn't speak Swedish or have any friends there. I don't think he knew what to do with me.

"I don't think Group B cars got too powerful... we would have liked more!"

Dad taught me to drive. He's a perfectionist, into the detail and quite old school, like teaching me to be kind on the gearbox. He took me for a ride in the Quattro S1, once in the snow and once on Tarmac. That thing was awesome!

I moved to Britain in 2010. And even though Dad couldn't fund my racing career, I managed to win British Formula Renault that year. I was still young and a bit naive and I thought 'This is going to be easy' but then for the next three years I didn't make much progress, and didn't have enough funds. A lot of people helped me along the way, and I have to thank them for that.

I sacrificed a lot. My mates were back home, and I was lonely, yet there was never a plan B. Mum was always saying, 'You've gotta keep going' but at the same time she'd add in that motherly way, 'You can always come home', but I wasn't a quitter.

I didn't speak openly with Dad about that. He probably never knew. I never discussed those feelings with him. A lot of the time, I was at race meetings on my own.

When he was there people would come and ask for a signature. As a kid, you're like, 'Wow! Dad's famous'. Yet as a race driver, you spend a lot of time on your own, a lot of time having dinner by yourself. But you just have to deal with it, just as you have to deal with all the bad luck and mini-setbacks that seem to be outside of your control.

In 2014 I got a big break. My 2013 F3 season as a Red Bull Junior hadn't gone well. The car wasn't great. Then Sean Gelael's father, Ricardo, sponsored me, taking me, Sean and Antonio Giovinazzi to Carlin.

I finished second in the championship, and earned a shootout with BMW, and that's what led to my DTM drive. It's a tough environment, because you've got to perform and you've always got someone who wants your seat, young guys coming up. But BMW is loyal and it gets the best out of its drivers.

Formula E ultimately didn't work out. It's harder to jump into those cars and be quick than any other race car; it requires such a different skill set but amongst such top-level drivers there's no time for you to get used to things and bed in.

Now I'm in the BMW M8 GTE. It's well suited to fast, flowing circuits and I enjoy driving it in the US, where the racing is more straightforward.

Follow James on Twitter @squarejames

HISTORIC AWARDS 2019

The inaugural Royal Automobile Club's Historic Awards have been created to recognise excellence and outstanding contributions to the UK's historic motoring and motorsport industries.

Nominations close on Monday 30 September and are now invited for the following categories:

1. Competitive Event
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3. Race Series
4. Collection
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6. Personality
7. Outstanding Journalism

The Awards dinner will be held on Thursday 21 November 2019 at the Royal Automobile Club on Pall Mall, culminating in the presentation of the Royal Automobile Club's Lifetime Achievement Award.

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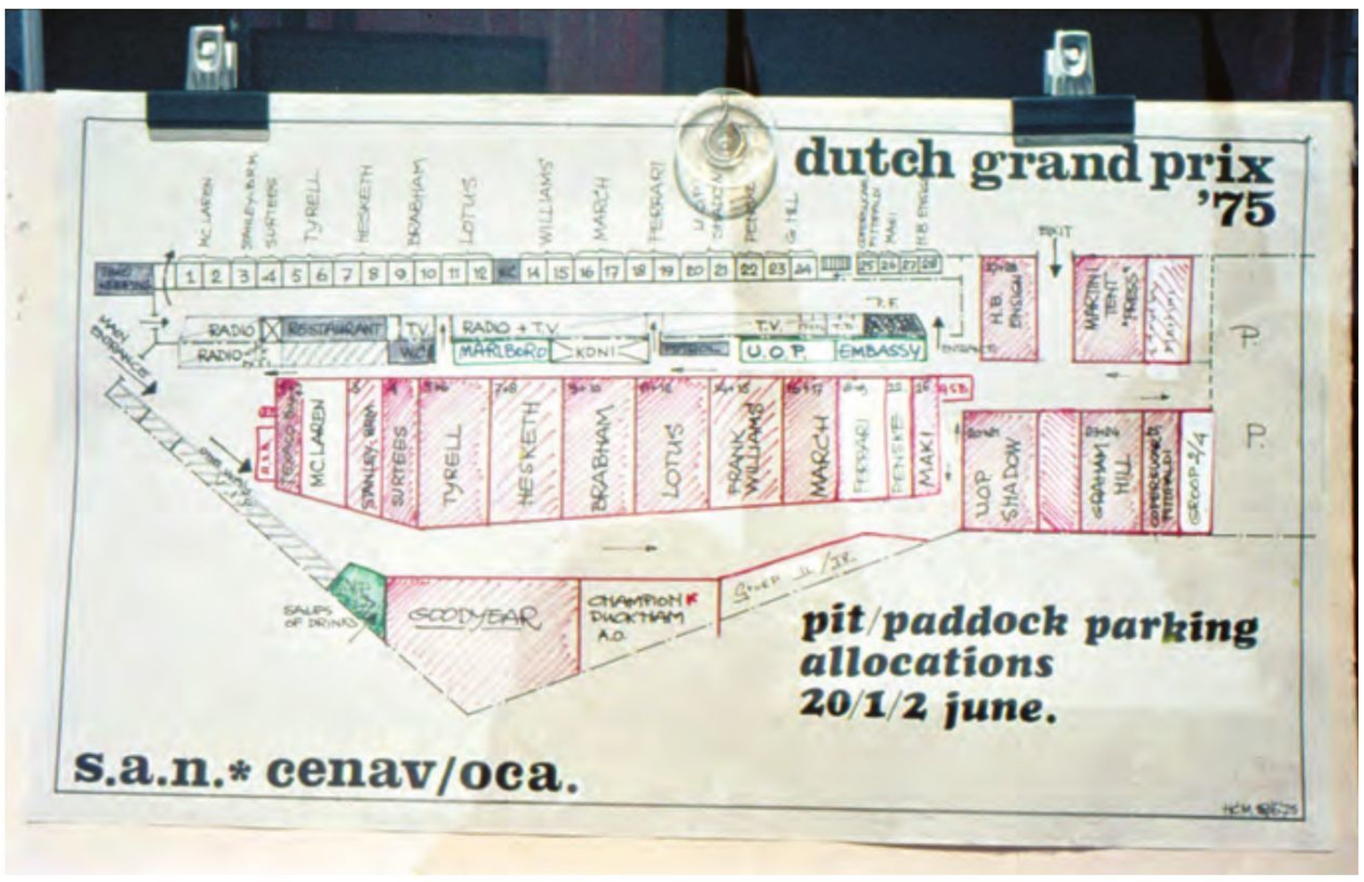
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LETTERS



IN WORD ON THE BEAT (*MOTOR SPORT*, *JULY*) YOU MENTIONED THAT TEAMS WILL not be able to take their usual motorhomes to the revived Dutch Grand Prix next year, due to the limited amount of space in the paddock.

I attach a photograph of how they used to manage (*above*).

DIRKJAN DE WIDT, VIA EMAIL

ARE THE NEGOTIATIONS TO EXTEND the British GP contract Silverstone's gamble (*Motor Sport, August*)? Up to a point I suppose but, as you suggest, Liberty's gamble was or might still be of a different order. Those of us involved with BRDC issues over the last 20 years were fully aware the previous contract with FOM could never run to its full term without bankrupting the club. If one assumes Liberty were aware of this when they bought CVC's rights, then the loss of the British GP was never in doubt and they were simply playing hardball.

On the other hand, if they were not properly aware of it, things might well get trickier. You will doubtless recall the US conglomerate IPG's foray into UK motor sport that included hosting the BGP and leasing Silverstone; it ended with them shouldering big losses and walking away.

MIKE KNIGHT, VIA EMAIL

I FELT A RESPONSE WAS NEEDED TO THE concept (*Motor Sport, June*) that the Wales Rally GB needed to be moved to 'somewhere more accessible'.

How is Wales any less accessible than Kielder? I recall the furore when it was announced that Rally GB was to move to Wales, citing the same argument that it was difficult to access - mainly because some people wanted the event to remain somewhere inaccessible that happened to be closer to them.

I agree that it is a good idea for the UK's major rally to be run in other parts of the country, but to say that Wales is a difficult location is a poor excuse. The idea of rotating locations is good enough on its own, surely?

NEIL DAVEY, NEWPORT, SOUTH WALES

THE EAGERLY AWAITED ARRIVAL OF *Motor Sport* continues a run of great pleasures that for me dates back to 1961. However, some odd inaccuracies did creep into the September edition. Your justified praise for the Brabham BT7/Dan Gurney overstates their illustrious record.

In 1964 the combination almost achieved the mark you set (either winning, leading or starting on the front row at each Grande Epreuve) with the exception of Gurney's home GP, where he still ran well. But 1963 was a different, more mixed season. I feel no need to labour the point, just don't 'over claim'.

While I have your attention, you are surely way off the mark in imagining that the fourth iteration of the Zerex Special 'must have had 500bhp'. At the time, and dependent on which of the two Traco-Oldsmobile Bruce McLaren used, *Motor Sport* gave more realistic figures of 315bhp and 380bhp.

But keep on the noble traditions of *Motor Sport* and tolerate your loyal readers occasionally querying the statements of younger authors.

JOHN DREW, WANSTEAD, LONDON

I WOULD LIKE TO PRAISE THE EDITORIAL team for your work on every issue of *Motor Sport* magazine. I'm a long-time buyer and avid reader, so please keep up the good work!

But in the interests of achieving as near to perfection as possible for the magazine, I would like to point out one small error in the very interesting "Lunch with Michèle Mouton" article (*Motor Sport, August*)...

The picture of the speeding Audi Quattro on pages 62/63, whose caption reads: "The madness of the Group B era: spectators scurry to avoid the winning Audi, Sanremo 1981" should read "The madness of Group B era: spectators scurry to avoid the Cinotto & Radaelli Audi, Sanremo 1981".

Granted the picture in question doesn't shows us the car's rally number, but we can read the registration number, in this case IN-NL 77, the car driven by Michele Cinotto. As an aside, the winning Mouton & [Fabrizia] Pons quattro was registered IN-NL 88, while the third works car, assigned to [Hannu] Mikkola & [Arne] Hertz, was the IN-NM 61.

CARLES BOSCH, BARCELONA

Ed: Quite right, Carles. Great spot. Michele Cinotto and Emilio Radaelli set seven fastest stage times before crashing out on SS26.

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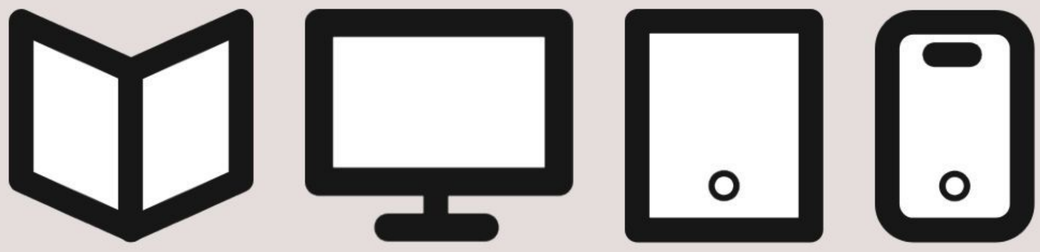
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HIGH PERFORMANCE

WHEN BRITAIN RULED THE ROADS

by Peter Grimsdale (RRP: £20)

In January 1964, a team of red and white Mini Coopers stunned the world by winning the legendary Monte Carlo Rally. It started a golden year for British motoring, which climaxed when *Goldfinger* broke the box office records and made James Bond's Aston Martin the world's most famous sports car. *High Performance* tells the story of legendary British marques, examining the story of these cars and the mavericks who dreamt them up.





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The Ultimate Underdog

A decade ago, a Formula 1 team rebounded from the brink of closure to assume a new identity and shock the sport with an unprecedented world title double. There had never been a story quite like it – and it's unlikely to happen again. **Simon Arron** spoke to the chief architect

PHOTOGRAPHER **STUART COLLINS**

BRAWN GP: 10 YEARS ON

IT'S ALWAYS THE SAME WHEN A FRESH group of Formula 1 regulations is implemented. Cars appear slightly odd when the first publicity shots appear, but after watching for a few laps you swiftly forget that they ever looked any different. During the opening free practice session of 2009 in Melbourne, however, one car continued to stand apart – not so much for its stance as for the way it was presented. Predominantly white bodywork, a few complementary flashes of fluorescent yellow, scarcely a sponsorship decal worth the name... The team might have been short of resources, but its performance reserves ran deeper than anyone might have anticipated. Jenson Button was on the cusp of winning six out of the first seven races, the springboard to a successful world title conquest that even today, a decade on, stands apart as one of the great and most unlikely achievements in modern F1.

The sport has featured a litany of drivers who became one-hit wonders, but teams? There have been occasional bolts from the blue (newcomer Wolf winning its maiden grand prix at Buenos Aires in 1977, for instance), but nothing that has had the sustained impact of Brawn. It was a story that hinged on an improbable confluence of factors – one manufacturer pulling out, teams pitching in to assist a wounded rival and a top driver exploiting an improbably well-honed chassis while adversaries struggled to catch up... then clinging on to that early-season advantage as financial reality bit.

It's a story that's unlikely ever to be repeated at the top level.

In the formative stages of its genesis, the Brawn BGP 001 was destined to become the Honda RA109 – and there was little reason to suspect that would change. After a dismal 2007 campaign, Honda hired former Ferrari technical linchpin Ross Brawn to get its F1 project back on track – and with new rules on the horizon, the Englishman opted for a long-term view. "By the time I came on board," he says, "the specification of the 2008 car was fairly settled, so my main focus was to restructure the organisation and get stuck into the 2009 programme. We felt there was no point pouring resources into the existing car because we had this big opportunity coming up on the horizon. I'd agreed a three-year deal on the basis that the first would be to build and assess, the second to show what we were able to do and then the third to try to challenge for the championship."

Late in November 2008, however, Brawn and fellow team director Nick Fry were summoned to Honda's UK office in Slough. "We were told very simply that they were shutting the operation down," he says. "We'd had our budget approved for 2009 and everything was in place, so Nick and I really had no idea what lay in store. We were told to return to the factory, let everyone know and then shut it down. Before we went any further, though, we requested our legal counsel and the first thing they did was advise Honda that they couldn't simply close the factory, because we had more than 700 people and these things require a formal consultation process, to look into viable alternatives. That bought us some time and we were able to start discussing the feasibility of finding a new owner.

"At first we certainly weren't thinking about taking it on ourselves. That became more of an option when we saw the calibre of those who were expressing an interest in the team. It's like the old Groucho Marx joke, 'I wouldn't join a club that would have me as a member.' I wouldn't have wanted to work for some of the people who were trying to buy the assets... It was apparent after a while that there were no serious potential buyers, they were all chancers."



Eventually, it became clear that the cheapest, most elegant solution would be for Honda to provide a rudimentary budget for the year ahead rather than simply closing the whole operation. Brawn says: "The deal with Honda was, 'Right, it will cost you X to close the company, pay off the redundancies and all the contracts that you'd be breaching, or we could carry on and take on that responsibility for less than X.' It was a cheaper deal for Honda and, morally, put it in a much nicer position. It wasn't great having to lay off 300 people, but we kept 400 and the team remained alive, so Honda effectively paid us a fee to take the thing on – and we had enough money to last the year. It was what I'd call a 'survival plan', certainly not a flat-out operational budget."

With no future technical support from the former parent company, a deal was done to secure the use of Mercedes-Benz V8s – and that meant carving up parts of the original design. "On the Mercedes engine the output shaft was higher than that of the Honda," Brawn says. "We didn't have an opportunity to redesign the gearbox completely, we just had to sort of change the bellhousing to make it bolt on to a Mercedes V8. We certainly couldn't look at changing the rest of the gearbox. The whole assembly – gearbox, rear suspension – was now 8-10mm higher than it should have been because we had to match it to a higher crank. That was probably the biggest compromise, but I don't think the rest was too troublesome. Mercedes motor





Ross Brawn became an entrant in his own right after Honda withdrew from F1 at short notice; below, a sticker is hastily placed on a team truck ahead of the first race

"Our times were disallowed because they assumed Jenson cut the chicane"

MOTORSPORT IMAGES

sport chief Norbert Haug was very helpful, but aware that his board was slightly nervous about our financial position. We told him not to worry and that we'd pay the whole amount up front, because we had our dowry from Honda so there was no reason not to do that and we wanted to build a good relationship. I think he was relieved when he received his cheque for full payment fairly early in the year."

On March 6, 2009, little more than three weeks before the season-opening race in Australia, the team was formally rebranded as Brawn GP. "That wasn't my idea," Ross says. "Our legal counsel Caroline McGrory proposed it. We had a whole range of possibilities and I wasn't keen on any of them - one was Pure Racing, which made me gag. We even looked at calling it 'Tyrrell' again, to honour the team's roots, but that had complications for the Tyrrell family. Caroline suggested 'Brawn', other directors were keen, and I was hugely flattered."

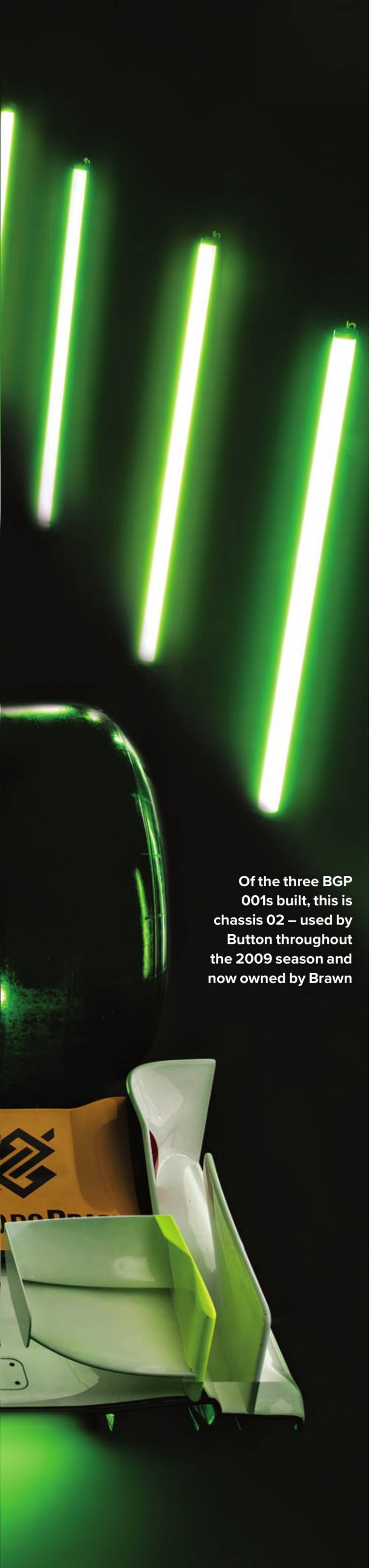
The team wasn't quite ready for the start of pre-season testing - and Brawn admits that he and his colleagues were puzzled when they saw rivals' lap times. "We had all our numbers," he says, "and realised that either we'd missed something, or else we simply had a better car than anything else running at that time. We weren't sure which, because there seemed to be such a disparity. The engineers kept poring over our figures and coming to the same conclusions, so we thought we'd see what happened."

The answer was a pace-setting performance at the BGP 001's first appearance in Barcelona, when Rubens Barrichello posted what would be the week's fastest time. Before that, team-mate Button had also caught the eye with some searing laps. "I think our first few quick times were disallowed because they assumed Jenson must have cut the chicane," Brawn says, "but for us it was a realisation that our calculations had been correct. Jenson was quick, yet saying that the balance needed some work. We were already running with a fair bit of fuel - but added more to quieten things down a bit. It was clear, though, that we had an advantage of one second per lap or more over the opposition, which is pretty unusual.

"You have to bear in mind that it had never entered our heads that we might be a title challenger. We were in survival mode just to get on the track. We thought we might be able to pull in some sponsorship if we could notch up some good results.

"That was our mindset, there was no thought about winning races, but as soon as we started running the car we realised the scale of the opportunity that was suddenly presenting itself."


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Of the three BGP 001s built, this is chassis 02 – used by Button throughout the 2009 season and now owned by Brawn

He knew, though, that the likes of McLaren, Red Bull and Ferrari had resources to facilitate a swift recovery. "There was nothing in our cupboard," he says. "In F1, by the time you've run a car for the first time you usually know what's coming along - you have all the targets for when you're going to introduce upgrades. Classically, the opening European race in Barcelona is where you see the first big changes, but we had nothing - our car was our car and that's all we had. We used two chassis for the first part of the season, built only three in total and managed just a few gentle upgrades here and there.

It was en route to Barcelona that Brawn strolled forward from about row 17 of an EasyJet Airbus to chat to fellow passengers, pontificating that he might in future have to stretch the team's budget to embrace Speedy Boarding, for the sake of extra legroom. It wasn't unusual to see Brawn and his colleagues using budget airlines during the season; on a return flight from Istanbul, EasyJet customers were surprised to find the previous afternoon's race winner Button in their midst - and perhaps more so still when he voluntarily walked down the aisle with a rubbish bag towards the journey's end, assisting with the cabin clean-up.

"We gained more recognition as the year went on," Brawn says, "and British Airways started offering me complimentary upgrades, but of course people read that the wrong way. It was perceived to be, 'Oh, they're winning now, they're starting to spend money,' but that simply wasn't true. It was BA that very kindly invited me to turn left when boarding and I should have had enough nous to realise that somebody would pick up on it and write a shitty article. I remember reading that I was 'still travelling first-class', but there was no way we would have paid for that. I wasn't going to turn it down, though..."

BUTTON'S ROLE AS A TEMPORARY cabin steward coincided with the end of his winning opening salvo. The BGP 001 remained effective into the second part of the season - Barrichello emerging triumphant at Valencia and Monza - but this was the era of 10 points for a win and eight for second place, so six victories from seven races (one of those with half-scores awarded, following the rain-enforced cessation in Malaysia) had earned the championship leader a cushion of only 26 points. That would be enough to protect him, but why did his performances tail off slightly during the summer?

"It's an intriguing question," Brawn says. "Getting the correct tyre temperatures was challenging, as ever, and there were a few races where we just couldn't do that. We didn't know as much about tyres as teams do now in terms of management and sensitivity. There are all sorts of tricks teams pull today to get tyres into their working range, but back then we sometimes just couldn't switch them on.

"Jenson had been driving beautifully, but he has a very smooth, economical style and that made him a bit more critical to tyre temperature than Rubens was, which didn't help. But I think the pressure of what had

Where are they now?

The three Brawn GP cars survive, but only one is a runner

Just three Brawn GP 001 cars were built and only one of those, chassis 02, is in driveable condition. The team's tiny budget meant few spare parts were made and many of these were scrapped after the Mercedes takeover.

Chassis BGP 001 01 Raced by Barrichello in the first 13 GPs until he crashed in qualifying for Singapore. Two wins, two fastest laps. Later rebuilt, now owned by Jenson Button, minus engine, gearbox and other parts.

Chassis BGP 001 02 Button's car for every practice and race – the title winner with four poles and six victories. Used by Mercedes GP for two years as a demo car in silver livery, now owned by Ross Brawn. Returned to running state by D3 Racing Solutions. It's the one photographed on these pages.

Chassis BGP 001 03 Used for Barrichello's last four races. Pole in Brazil, fourth in Abu Dhabi. Now owned by Mercedes, but not running.

come to be regarded as a slam-dunk world championship had an effect. Perhaps sub-consciously he began to drive a little more conservatively. When you start coming up against pressure, all sorts of thoughts enter your head - not just for Jenson, but for me and the rest of the team. I think we all got a little bit anxious - I was probably one of the only ones who had been in a world title fight before, not that it made me any more capable of dealing with the situation - so we probably didn't function as well as we could have done, but Jenson recovered magnificently."

The final denouement came in Brazil - the penultimate race of the season - where Button scythed through from 14th to fifth to push the title beyond the reach of remaining rivals Sebastian Vettel and Barrichello. Brawn says: "I'll always remember Jenson coming to me that morning and saying, 'Don't worry, I'm going to do it this afternoon.' I think he'd had a quiet night with his Dad beforehand and realised this might be his only title opportunity. He drove brilliantly that day, overtook when he could, didn't do anything stupid, pushed hard when necessary - a perfect job. But you could see it in his demeanour - there was no hint of anxiety, he turned up with an attitude of 'Right, we're going to do this' and it wasn't just false bravado - he genuinely had a spring in his step. When he crossed the line I actually burst into tears, something that had never happened before."

Coincidentally, the team had picked up sponsorship for the weekend from a local beer company, Itaipava.

"To celebrate," Brawn says, "Itaipava hired a downtown São Paulo club that was fairly, erm, raw... We went there and had an all-nighter, one hell of a party. I was 55 at the time and more sensible than some of the others, so it was lovely to watch younger members of the team completely letting themselves go. My wife Jean was with me,



Nerve centre: Button won six of the opening seven grands prix and only once failed to finish in the points

Debunking the diffuser myth

The 2009 season began contentiously, but Ross Brawn believes there was more to his team's success than trick aero

The dawn of the 2009 season was scarred by protests, rivals arguing that Brawn, Toyota and Williams contravened the latest regulations with their diffuser designs. While most took the wording of the rules literally, with single-piece diffusers of uniform height and length, the other three capitalised on a loophole that appeared to allow the central section of the diffuser to stop short of the car's flat floor, creating an opening that permitted air to flow above the diffuser and generate extra downforce.

The FIA eventually ruled that this was legal and other teams copied it, but Brawn would be the only one of the three originators to win during the season. The practice was outlawed for 2010.

"Everyone talked about the diffuser," Brawn says, "but I believe our success was due to the way our whole car was integrated. With new rules the interpretation always needs clarifying. We were spotting potential loopholes and FIA technical director Charlie Whiting quite often said, 'Interesting, nobody else has asked that' – so we deduced that we must be ahead of the game. I think we came up with a nicely integrated car, with all the aero packages working well in harmony and the double diffuser was a nice add-on.



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Focus of attention: rivals complained about the BGP 001's diffuser... then had to copy it

"The idea was devised by a Japanese engineer who was working on the aero programme. We used to give them various projects with which to play around and he came up with this interpretation that we didn't grasp initially, until we explored it more fully. That became the focus of attention, but in some ways we were quite happy for that to be the case. We knew the benefit of our diffuser compared with a normal design, but the big thing was the car's overall integration. I honestly think we would have won races with a conventional diffuser, because we had started working on the new rules very early and were higher up the learning curve than anyone else."

which was nice, and we did participate a bit, but we spent much of the night as observers, watching this wonderful thing going on – drivers, mechanics, the whole team. It was a night I'll never forget.

"I'd been lucky to taste success with other teams in the sport, but nine months beforehand this would have been inconceivable, so circumstance made it particularly special.

"I felt very proud of what we had achieved, and I still do: we had a team that competed for one year and has a 100 per cent title-winning record... It probably won't happen again and our [note that he doesn't say 'my'] name is on those trophies.

"That can't be taken away."

POST-SCRIPT

A month beyond Button's title-clinching drive at Interlagos, Mercedes-Benz announced that it was to purchase Brawn GP... and Button signed a contract to switch to McLaren for the 2010 season to partner Lewis Hamilton.

"I went on holiday when the season was over," Brawn says, "and Jenson phoned to tell me he'd decided to leave. We'd done a sensible deal for him with Mercedes and everything was looking pretty good, so who knows what might have happened if he'd stayed? It was disappointing after all we'd been through, but we got over it and we're still good friends.

"The Mercedes thing was good and bad. It was obviously great for the team's future, but with all the necessary bureaucracy it took forever to get the deal done and that caused us to miss the boat for 2010, because we didn't have the funds we needed. It wasn't until 2012 that the team got back on top of things ."

He remained part of the set-up until the end of 2013, when Lewis Hamilton marked his departure with the tweet, "Ross has been a great leader and teacher for me. He has built the foundations for us to succeed in 2014!"

Quite prescient, that.

"Guys, you've built me a monster"

EXCLUSIVE INTERVIEW

Jenson Button drove Brawn GP to victory in 2009 but, as he tells **Mark Hughes**, it was anything but a foregone conclusion



MH When the Honda decision came and the team was facing oblivion, was it a big decision to stay? You could have left.

JB Yes. I could've gone to Toro Rosso but that wasn't really an option. I still had things to prove. I'd only won one race [Hungary 2006]. Also I wasn't young any more so I wasn't going to get to Red Bull from Toro Rosso. So Brawn – or whatever it was going to be called – had to be good.

It seems amazing that Honda had that car just at that time.

Well, they'd spent all their money just on that car. The 2008 car they didn't develop at all. It was a tough year for the whole team in 2008 because we knew going in we weren't going to be developing that car because everything was going into the new regulations for '09. They put everything into it.

Including the double diffuser?

It was a Japanese guy who found the double diffuser loophole. He wasn't the only one obviously, because it was on the Williams and Toyota, too. But the great thing was, everyone was so distracted by the double diffuser they didn't see the whole, which was the reason it really worked. They were blinded by the double diffuser.

What do you remember about your first test in Barcelona?

The problem was we didn't really know how quick it was. We had all our simulations of what the car should do and we looked at the first test – which we weren't at, we missed it. We hadn't even shaken down the car yet. And when we saw the lap times from that first test we thought 'Oh no, we've got our simulation wrong because it's saying we'd be 1.5sec faster than that'. Then we turned up in Barcelona and on the first run were 0.6sec quicker than anyone. I came in and said 'Guys, the balance isn't there, we need to do this for the fast corners and this for the slow' – and Shov [Andrew Shovlin] stuck his head in the cockpit and said, 'Mate, you're 0.6sec clear of anyone else.' Oh s**t. We worked with the balance and I think we ended up 1.2sec quicker than anyone. So we put fuel in it for the rest of the winter!

The first time I actually drove it was on the Silverstone school circuit and what stood out wasn't how it felt as you couldn't get any tyre temp. It was that nothing went wrong. Nothing felt wrong. Which on a brand new car is so rare.

And that just carried on in the first race...

Yes, when we eventually got to the first race,



Button secured the 2009 world title having won six of the opening seven races, but only managed two more podium finishes over the final 10 grands prix

MOTORSPORT IMAGES

Friday was pretty good - though not as good as we expected - Saturday we blew them out the water in qualifying. The funny thing was, it still wasn't an easy race. We went for a strategy that worked, but only because Vettel and Kubica took each other out. So it wasn't going to be an easy win. At none of the races was it ever like what Mercedes has now. But every race it just fell in our laps, the team didn't make any mistakes, the mechanics were unreal, especially considering we had no practice during the winter, no pit stop practice... nothing.

And you had very little money, too?
Yeah. We had nothing. For Turkey I flew by EasyJet. That was the last win. That was a great race.

I always thought the car suited your style. Did you think that, too?
Yeah, the problem with me was always tyre temperature. At circuits like Silverstone I couldn't get the tyre temp. All through my career - that's just the way that I drive. I try to be as smooth as possible. I tried to be aggressive but it didn't work for me. Circuits like Silverstone, and other tracks like Valencia. It was tricky. Spa, too. There were tracks the tyres just didn't work on.

What changed across the second half of the season?
I remember at Turkey [where we won] I screamed into the radio 'What just happened' I was screaming with happiness. I said: 'You've built me a monster, guys'. The car was fantastic for the first half of the year then all of a sudden we were falling off a cliff.

After Turkey came Silverstone and we couldn't qualify better than sixth. I just couldn't get the tyres working.

Also we didn't develop the car through the year. The problem was that the stuff that goes on the car for race six or seven you're developing three months before, and we didn't even know if we were going to be racing at that point. I assumed it was because we had no money, but I spoke to Ross the other day and he said we didn't partly because we had to save money for 2010, but the bigger issue was building the parts when we weren't in the tunnel. The car hadn't even seen the tunnel for three months. You're never going to be able to compete. So it was lucky we had that initial advantage otherwise we'd have had no chance.

That makes you realise how amazing it was that Ross pulled it out of the bag.
The funny thing was we had a couple of people interested in buying the team. We got to the point where they were ready and we called Ross and didn't get a reply. Then called again, no reply and we thought 'hang on, something's going on here'. It turned out he'd actually purchased the team himself for £1. There was so much emotion through 2009, because we came from a group of people not having a job to winning the title. It was unreal and that continued through the year.

Did you think at any point that you weren't going to win?
I remember at Singapore [race 14] saying: 'What are we doing?'. It felt like the opposite of the first seven races. Nothing went right for us. I said on the radio we're throwing it away. And at Brazil in qualifying we messed up [in the wet]. Ross said the other day to me that with Rubens they got the strategy perfectly right, but with me we didn't get out at the right time [Button was 14th fastest on wet rubber, when most others timed things right to go for inters]. Vettel copied us so he was even further back, in 16th. It made it a fun, dream way to end of the season. If you were going to make a film about a season of F1, you'd do it like that, from adversity then with the jeopardy right at the end, 'oh my god is he going to lose!' [Jenson finished fifth, and in doing so secured the drivers' and constructors' titles].

You drove the car again recently; was it how you remembered it?
Jumping back in it felt so normal. I got in the seat and thought I have never had a seat this good... in anything!

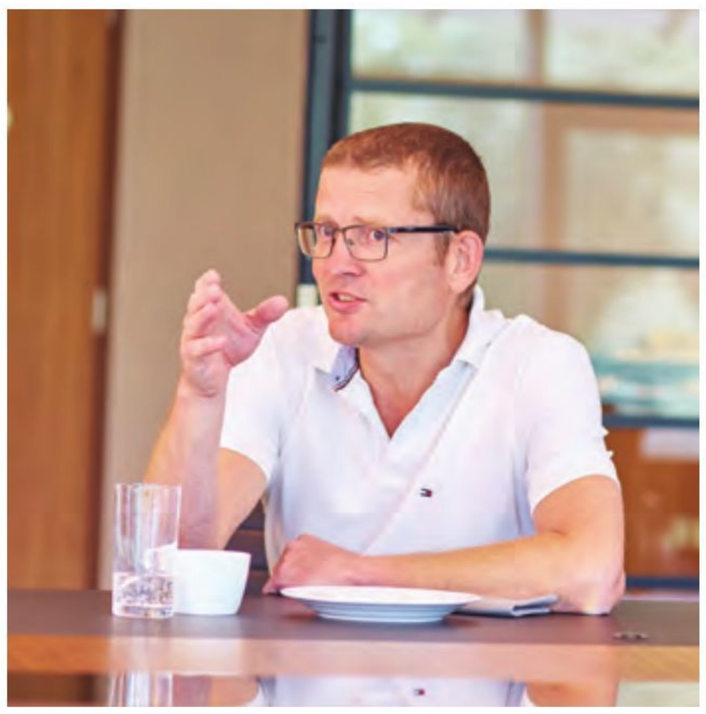
I hadn't driven the car since '09 and I've driven so many cars since, yet it was perfect. My body not moving in the high-speed corners, the throttle movement just as I like it, the brakes, steering. The steering felt quite heavy, but I think that was because it had a wider tyre on it. But you forget how small the cars were then, small but beautiful. And look at the lines of it. I know it has this big nose and the front wing is a bit square and angular, but it's so nice. It doesn't look like it's aged. That [V8] sound good too.

The car you drove is owned by Ross, and is basically one of a kind now...
They told me not to break it. Which is exactly how we had to race it! Don't touch the kerbs. I came round the last corner flat out and Ross had his head in his hands. He was so worried. There are no more suspension components because the moulds were crushed. And it's not been stress tested because they can't put that much stress through it. They said don't brake hard. The power didn't take my breath away, just the high-speed grip and the flow of the circuit in that car - and seeing Ross's face.









Clockwise from top, left: Ron Meadows (Brawn GP sporting director), Andrew Shovlin (Jenson's race engineer), James Vowles (chief strategist) and Simon Cole (chief track engineer) recount 2009 events



The Brawn GP team celebrate a victory at Monza, on its way to a world title double. A year earlier, 300 of the then 700 strong outfit had lost their jobs

Lunch with Brawn Grand Prix

The core of the Mercedes squad that dominates F1 today was forged in the chaos and elation of Brawn's title-winning year. **Simon Arron** sat down with four of both teams' key players

WHEN TV CAMERAS GO behind the scenes with Formula 1 powerhouse Mercedes, chances are that they'll focus on extravagant gestures from team principal Toto Wolff, pumping or banging his fist according to how well - or otherwise - a race is progressing. There is parallel passion a few metres away on the pit counter, but it is less flamboyant and reflects one of the most stable relationships in modern sport. Four of those atop the stools have worked with this team through several phases of ownership - and the two most 'recent' recruits joined in 2001.

Ten years ago, when Brawn GP rose from the ashes of Honda to win an F1 title double before morphing into Mercedes, they were sitting pretty much where they do today. The uniform might have changed, but their roles aren't dissimilar. The biggest difference is the scale of the team they represent.



Now as then, Ron Meadows is sporting director. He joined the new British American Racing venture at the end of 1997, just as it was in the throes of taking over the Tyrrell team to facilitate its F1 entry. Andrew Shovlin – 'Shov' to all and sundry – came on board in 1999; he worked as Jenson Button's race engineer during the Brawn campaign and is today chief engineer. Chief strategist James Vowles and chief track engineer Simon Cole arrived in 2001, when BAR was still beginning to ferment lofty ambitions that would produce 15 podium finishes between 1999 and 2005, though the team did not become a winner – and then only once, at Budapest – until ownership had passed on to Honda. That would be a rare highlight during the three largely fallow seasons that preceded the Japanese manufacturer's withdrawal and the team's rebirth as Brawn.

For context, victory in the 2009 Australian GP was only the second F1 win the four gentlemen here had known; there would be seven more during that season – and there's been another 88 since Mercedes purchased the assets that November.

To reflect on that momentous 2009 campaign, we convene in the boardroom at Mercedes AMG F1's Brackley headquarters, where catering staff have laid on sandwiches and wraps. The setting is appropriate not just because this is where Brawn GP was based throughout its fleeting existence, but because Meadows played a key role in setting up the factory. "A spade went in the ground in February 1998 and I was tasked with getting the building finished by the end of November, for a formal presentation," he says. "Cometh the day, everything was just about finished, and I did an all-nighter getting this boardroom ready. I didn't quite get the carpet finished on the stairs, but covered the sections at the top and the bottom, because I knew the suits would be coming up in the lift and wouldn't notice the bit that was missing. They arrived in three helicopters, immaculate in their cashmere jackets, and then the lift failed..."

It was on December 1, 2008 that Honda Racing directors Ross Brawn and Nick Fry summoned a select management group to impart the news that Honda was withdrawing from Formula 1 with immediate effect. "It was a Monday," Meadows says, "but we were sworn to secrecy and weren't allowed to say anything until the end of the week. That was the hardest thing, because I couldn't share the information with colleagues – and I knew the effect might be life-changing for some of them. When we'd had that first meeting, though, Ross and Nick made it clear that their intention would be to try to keep things going. Honda was stopping, so we'd just have to find another way to carry on – and I just believed in that."

Shovlin adds: "I had a half-finished house and a fully pregnant wife, so the timing wasn't terribly convenient, but you sort of knew there was a chance Honda might stop one day, because results hadn't been terribly good. It still was a bit of a shock because just before pulling out they'd pushed ahead

with some serious investment. I actually found out before Jenson did - and wasn't allowed to tell him, either."

Cole: "There were lots of car plant closures at the time and Honda was laying people off in Swindon, so the industry was unstable and there was talk about F1 needing to rein itself in, but the extent of that wasn't immediately obvious in Honda's case. They'd only just bought a new seven-post rig so there appeared to be no tapering off in terms of investment - it went from an almost bottomless pit of cash to an overnight stop."

All, though, had faith in what had been developed behind closed doors. "We all knew how good the new car might be," Vowles says, "and that led me to believe that things definitely weren't over. I was involved in the process of talking to potential buyers - wealthy men who didn't really understand F1, or what they'd be getting in to - but the level of interest told me we had a chance. I focused on looking forward to working with this team in whatever form it took - it didn't really cross my mind that it could all end."

Shovlin even turned down a firm job offer from Sauber, ahead of what would be its final F1 campaign under BMW ownership. "For me that was a backstop," he says, "but they started trying to push me into resigning. I really didn't want to leave unless I no longer had a job. I had never formally agreed to go there - and eventually, when they started becoming quite aggressive, I let them know I wouldn't be joining. It was strangely calming telling them - getting rid of the stress of somebody hassling you every day was better than the potential prospect of not having a job. I knew I'd always have regretted missing out on what I thought we had."

Once Brawn and Fry had negotiated a deal to keep the company afloat, henceforth under the former's name, redundancy notices were served as members of the team were preparing to depart for Australia. "That was tough," Vowles says, "because we knew how much everything would have changed by the time we returned."

Meadows: "In one day I had to lose 40 really good people from the race team, which was just heartbreaking."

Their feelings might have been mixed, but their competitive instincts had been stirred by the pre-season performance of the Brawn BGP 001, as the Honda RA109 (now with a Mercedes V8) would henceforth be known. The team had contemplated running Ferrari customer engines - and there was one in the design office for the purposes of measurement - but the Mercedes deal was confirmed just before Christmas. "Looking back," Cole says, "it's amazing how quickly we could install the 'wrong' engine in a car."

"We didn't attend the first Barcelona test," Shovlin adds, "but Toro Rosso was running its 2008 car with a Montréal-type rear wing, probably indicative of where they thought they'd be in downforce terms with their new chassis. Initially it was the fastest thing on the track and we knew how our 2008 car compared with that - and how the new one appeared to stack up in comparison. So we made a few calculations, taking on board that they were running with an unsuitable rear wing, and worked out that we'd probably be about 1.5sec quicker than anyone else - which surely couldn't be right... But that was probably the first indication that other teams had given up chunks of downforce while we reckoned we had more than we'd had in 2008 - despite the regulation change that was supposed to reduce it. When I first saw some of the other cars, I thought, 'Blimey, that looks like our wind-tunnel model from eight months ago.' We'd shaken ours down at Silverstone and Jenson reported that it didn't feel terribly good, but then we went to Barcelona and the speed was immediately obvious. Everyone started to say, 'Yeah, they must be running light', but someone at McLaren told us they'd calculated that they wouldn't be able to match our times unless we'd been about 90kg underweight!"

With the team's future in the balance, bookies had been offering odds as high as 80/1 on Button to win the world title. "When you're testing," Meadows says, "those in the garage don't always know the fuel numbers but can tell when the car looks quick. You always get a bit of pressure from the drivers to stick new tyres on and remove a bit of fuel, so we did and I think Jenson went about 2.5sec quicker than anyone else had managed to that point. When I turned around afterwards there was nobody in the garage - I think they were all on their laptops, trying to place bets..."

Shovlin: "I called home to suggest a wager, though with hindsight we didn't put enough on. We'd had our first child by then and the district nurse came round to do a check to find my wife on an online gambling site at about 8.30 in the morning..."

> "We're privileged at Mercedes, but Brawn feelings were special"



FOR ALL THE CAR'S SPEED, however, Brawn GP was still vitally short of resources. "We were acutely aware that we were up against teams with more people, more everything - we had a head count of about 50 in Melbourne," Cole says. "We had absolutely no fallback, either, and very few spares. Over the winter the instruction had been issued to keep parts production to a minimum - and that was misinterpreted by some people as one per car... After the Bahrain Grand Prix, race four, everything was completely shot."

Shovlin: "We were probably saved by the fact there was so much stuff in all the store rooms. The car build budget was laughably



Button won the Australian GP to kick-start his title-winning year. Below, Mercedes bought the team from 2010 and has dominated in recent years



small, in context – about one million quid for two cars."

Meadows: "I think we had enough brakes in the cupboard to last us the whole year. We built only three tubs – and the third, our spare, wasn't ready until Monaco, so one big shunt and we'd have been stuffed…"

Cole: "It was also fortunate that all the tools in our machine shop had been purchased outright, for cash, so we had no leasing bills. When Honda walked away they left behind a very solid infrastructure."

Shovlin: "When we arrived in Melbourne for the first race, we had this fantastic sense of clarity. Previously we'd had all these Honda engineers running around and changing stuff, the team was big, things happened and it was hard to keep an eye on everything that was going on. Now, all of a sudden, you just had to ask Ross – and that was the extent of the red tape."

Along with Williams and Toyota, Brawn was protested in Australia over the legality of its double-diffuser floor concept, although it was eventually declared legal and rivals quit grumbling in order to get on with making their own. "During testing people noticed that we had something," Shovlin says, "but they couldn't understand quite what it was – or how we'd constructed it legally. They were all trying to get close-up photos, so in Melbourne we waited until it was dark before taking the car to scrutineering checks. Nick Tombazis from Ferrari came running with a torch and a camera, trying to get photos of the car's underside, but there is a certain etiquette in the way you go spying on other teams. Ross appeared and said, 'If you don't f*** off I'm going to ram that torch up your arse'."

An effective deterrent, apparently.

The Brawns of Button and Rubens Barrichello duly annexed the front row (Cole: "We went out for pizza and wine – I thought it was best to celebrate in case that was our lot for the year") before taking a one-two that was less straightforward than it might have been.

"One of the guys we'd let go was Gary Holland, a gearbox specialist and also our refueller," Meadows says. "He'd decided to take Honda's redundancy package and start up his own plumbing business, so we did Melbourne with a stand-in refueller and each stop was a few seconds slower than it should have been. That really shouldn't have been

our race and I felt we wouldn't win much else if we carried on like that, so I spoke to Ross and we did a deal with Gary to fly him out to races on Saturday nights to operate the fuel rig for the rest of the year."

Victory would be the first of six in the opening seven races for Button – he was third in China, behind the Red Bulls of Vettel and Mark Webber – while Barrichello backed him up with three second places. There was, though, some good fortune. The Malaysian GP was stopped early, due to torrential rain and fading light, and didn't restart. "Just as well, really," Vowles says, "because Jenson's steering wheel was absolutely full of water and we'd never have been able to get the thing going again. Toyota should have won Bahrain – they'd tested there and proved really quick, but come the race they made the wrong tyre call at the first stop and rapidly went backwards. That was a bit of a gift. In Barcelona we had a new front wing flap that had been built incorrectly – and we didn't notice until after qualifying, so weren't allowed to change it. There seemed to be almost one incident per race."

Meadows: "In Monaco we fitted the wheel shields the wrong way around – and we also had a thing called the FFA, an adjustable front wing flap. But that never worked, as in *ever*."

Cole: "And there was no curfew in those days, so we could stay up all night confirming that it still didn't work…"

Vowles: "The camaraderie was there, because we were a small team and every one of us was doing what would have been the jobs of several people. You felt exhausted the whole time. In Bahrain, where I was trying to fix those front flap adjusters, I fell asleep on the pit floor at 3am or something."

Shovlin: "Almost everything was a battle. In Turkey we had a seventh gear that was about 40kph too short – the wind had changed direction and we fitted the wrong ratio. At one part of the track we must have been on the limiter for about 600 metres – it didn't make a massive difference to lap time and Jenson was OK because he was out on his own at the front, but Rubens had made a bad start and simply couldn't overtake. At every race we seemed to be fighting, whether it be a load of knackered old parts, updates that didn't quite work or a car that wasn't quick enough – at no point did the season feel fully under control."

While the Turkish GP proved to be Button's final win of the campaign as better-financed teams caught up with Brawn's technical head-start, he scored points in every race bar one – Spa, where he was victim of an accident triggered by Romain Grosjean (Cole: "That was the only time all season that his car returned to the pits on a flat-bed, a record of which we'd be proud with our current resources") – he had built enough of a cushion to put the title beyond rivals' reach in Brazil, the penultimate race.

> "I remember there being an attitude of having nothing to lose"

Vowles: "We'd had a bad qualifying and there weren't too many cars behind, so it was just about looking forwards – capitalising on any opportunities. I remember there being an attitude of having nothing to lose."

Shovlin: "James had worked out strategy plans that showed we had a better than 50 per cent chance of getting the result we needed, almost regardless of what anyone else did, and by Sunday it was just a case of getting on with it. Nobody was keen on trying to finish it off in Abu Dhabi, because championships can catch you out when they go down to the wire."

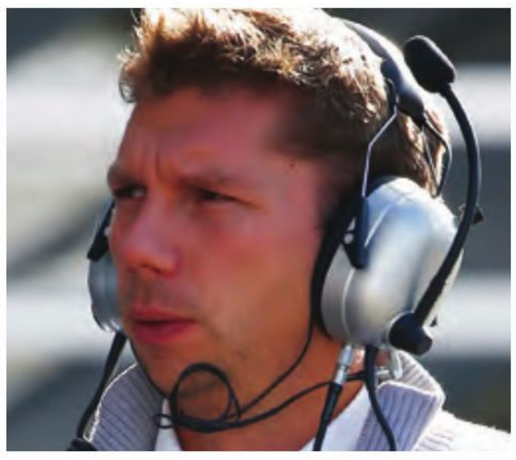
Meadows: "I think Melbourne was probably more emotional than Brazil, because it came so soon after everything that had happened over the winter, whereas at Interlagos we were all just elated. It was complete mayhem in the pit garage – about 40 or 50 TV crews all trying to get in at the same time to catch the scene. My best memory from the after-race party is our IT guy, Bert. He was a huge bloke, about 6ft 5in, and was walking around holding Ross over his shoulder… using just one arm."

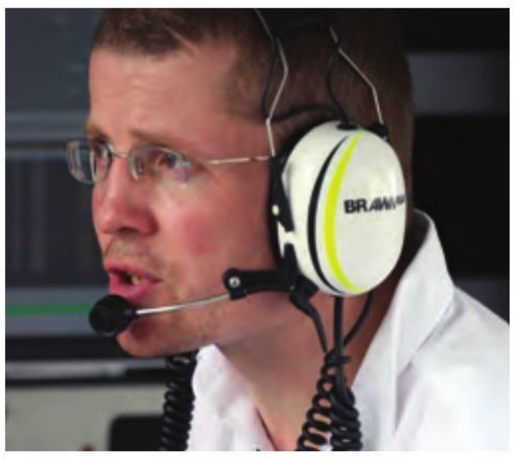
Cole: "There was never any sense of representing an organisation other than your own – we were just Brawn GP and the boss would be in the bar with us, having a beer. It was interesting to see the way the whole thing was reported outside the specialist press – it became a proper news story."

Vowles: "We're very privileged to have what we've got today at Mercedes, but I'm not sure I've ever had feelings like those I had with Brawn…"

Confirmation of the Mercedes takeover followed not long after the team's coronation – to general relief. For Meadows, one of the first tasks was to bring back some of those who had been released at the campaign's dawn. "There had been lots of people knocking around," Shovlin says, "so when we heard it was going to be Mercedes the reaction tended to be, 'Thank God for that'."

The final word goes to the man who helped build the factory in which he still works more than 20 years later. "There are so many memories," Meadows says, "but the one that comes most readily to mind is from the days following Honda's announcement. Ross called us all together into the workshop. Various things still hadn't happened, but he gave a rousing speech and said, 'We're going to fight.' That got everybody into a lather because you could sense his commitment. We realised he wanted it to work."



From left: Shovlin with Jenson in race mode, Vowles had strategy sussed in Interlagos, Meadows on the pit wall and Cole in his general engineering role

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Special delivery for Mr Clark

Ed Foster hitches a lift as Indy 500 winner Dario Franchitti drives a fellow Scot's old Lotus Cortina to a very special new home

PHOTOGRAPHER **BRENDAN MACNEILL**

The sun is breaking through to the east of Gleneagles railway station. There's the occasional car passing on the A9, 200 metres to the west, but it's quiet enough to hear the starlings and pigeons. Until, that is, the dawn chorus is broken by a popping, banging, four-cylinder motor.

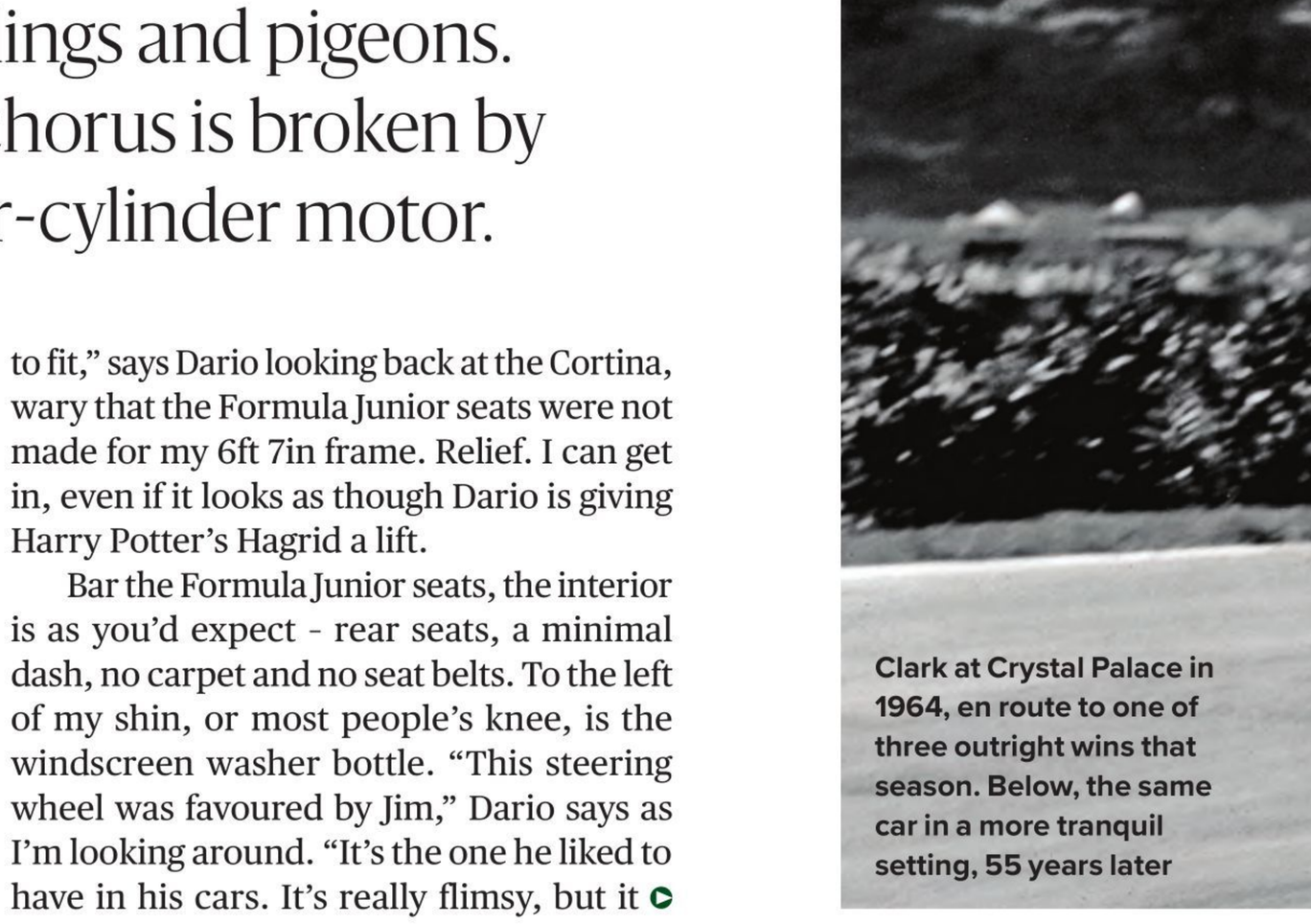
Around the corner comes the unmistakable Ermine White and green flash of a Lotus Cortina. A waiting van driver looks on in amusement - it's not every day you see one of Ford's finest here in the Highlands. What he may not have known, though, was exactly which car this was. Or who was behind the wheel.

This is BJH 417B, Jim Clark's 1964 British Saloon Car Championship-winning Lotus Cortina. In typical Clark style, he won his class in every round he entered that year, and even won three races outright when the quicker Galaxies faltered. His results in this little Cortina were superb: Oulton Park (twice) and Crystal Palace - first in class and first overall; Snetterton, Brands Hatch and Goodwood - first in class and second overall; Aintree and Silverstone - first in class and third overall. It was utter domination.

Three-time Indy 500 winner and four-time IndyCar champion Dario Franchitti pulls up by the early 20th century railway station with a cheery, "Morning mate!" Dario is a self-confessed Jim Clark nut and this Cortina is one of his most prized possessions, something he spent many years pursuing. The mission today is simple: deliver BJH 417B to the newly extended and refurbished Jim Clark Motorsport Museum in Duns, two hours to the south. This is prime Clark territory as, after being born in Kilmany, Fife, he moved to Edington Mains Farm just outside the pretty Borders town of Duns.

"I'm not 100 per cent sure you're going to fit," says Dario looking back at the Cortina, wary that the Formula Junior seats were not made for my 6ft 7in frame. Relief. I can get in, even if it looks as though Dario is giving Harry Potter's Hagrid a lift.

Bar the Formula Junior seats, the interior is as you'd expect - rear seats, a minimal dash, no carpet and no seat belts. To the left of my shin, or most people's knee, is the windscreen washer bottle. "This steering wheel was favoured by Jim," Dario says as I'm looking around. "It's the one he liked to have in his cars. It's really flimsy, but it ▸



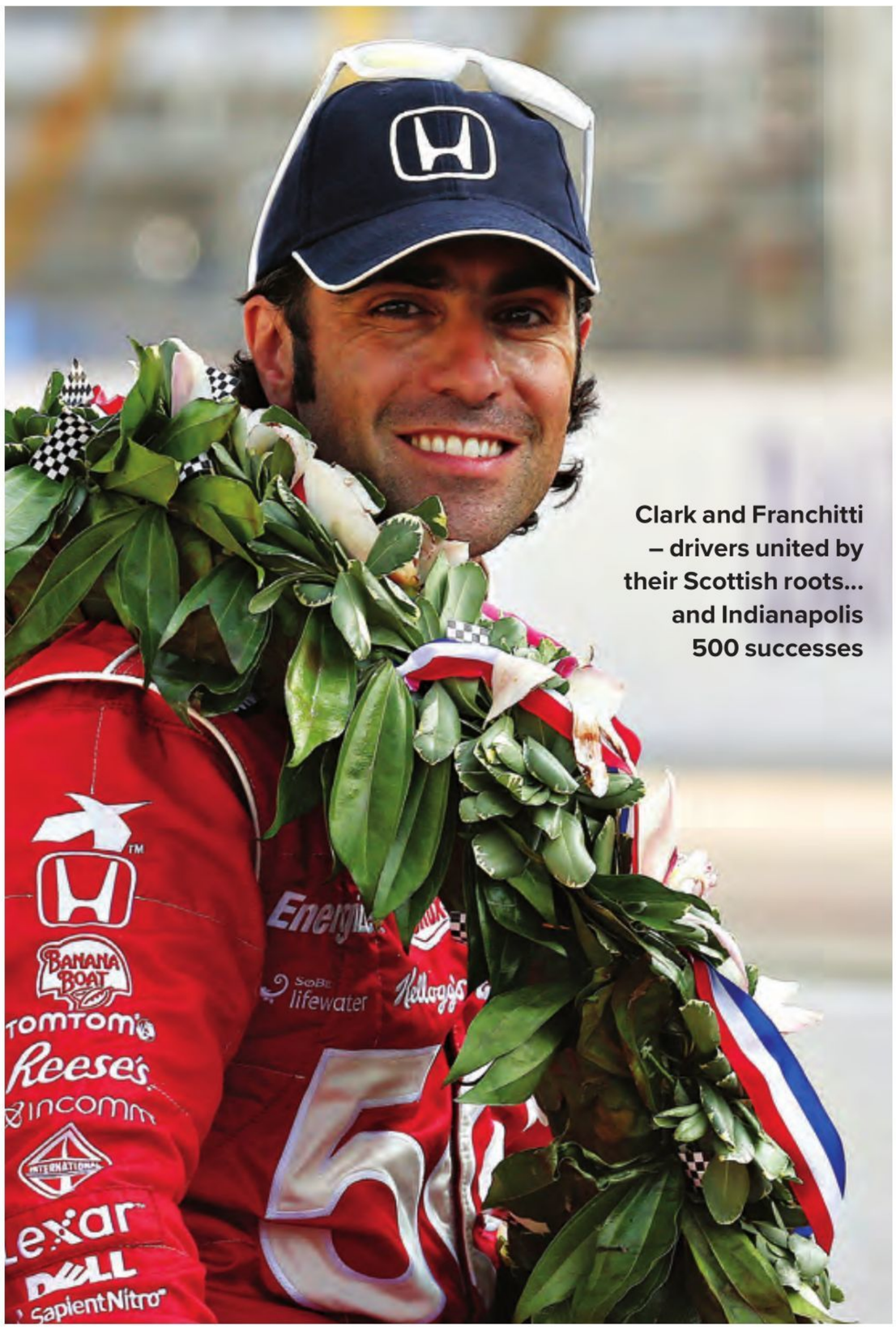


Clark at Crystal Palace in 1964, en route to one of three outright wins that season. Below, the same car in a more tranquil setting, 55 years later

MOTORSPORT IMAGES

"He won his class in every round he entered that year. His results in this little Cortina were superb"





Clark and Franchitti – drivers united by their Scottish roots... and Indianapolis 500 successes

MOTORSPORT IMAGES

"Of all the stuff in here his Indy memorabilia has a special connection to me"

feels good. The steering is actually quite heavy because it has a load of castor. If you pull away from a junction with a lot of lock on, you have to give it some throttle so that it doesn't stall."

Is that because he needs to go to the gym a bit more often? "Probably correct," he says. "I don't frequent the gym nearly as much as I used to."

We head off onto the A9, bypass Stirling on the M9 and then head around Edinburgh, eventually splitting off the ring road onto the A68. After a stop for fuel, we get onto the A-roads that will take us to Duns and the Cortina starts making sense. The car is running better - it has been sitting idle for a while - and Dario's face lights up as the two lanes become one ahead of us.

"These are the roads he would have driven in his Cortina road car - 550 VAR," Dario shouts over the noise of the engine, "and I guess, at times, they would have tested the D-type around here. The Aston Martin DBR1, too. If it needed some modifications or had a problem in the race before, they would have taken it on these roads and given it a wee clean-out. To be driving this car, on these roads, is really something special. It just feels... *right*."

I'd never sat in an ex-Clark car before, so the mixture of this Cortina, these roads and this location are enough to send your mind spinning back to the early '60s - an age of no speed limits, plus the chance of seeing world champion driver Jim Clark out testing in some exotic machinery.

Peeling off the A68 onto the A697, we pass The Lodge at Carfraemill. "This is where Jim and the guys from the Border Reivers team would stop after races either to commiserate or, more often, talk about their win," says Dario, offering a small glimpse into his astonishing knowledge of all things Jim Clark. "A pretty neat part of history. Now the roads from here to Duns get really cool."

Having not spent much time in road cars with professional racing drivers, the Cortina trip was an eye-opener. Apexes were hit





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Franchitti spent years coveting the Cortina and it is now one of his most prized assets. It will be loaned to the museum for a year or so

"The museum had welcomed more than 300,000 visitors, including Ayrton Senna"



See Dario deliver Clark's Cortina at *motorsport magazine.com*

with zero fuss, while braking, changing gear and accelerating were effortlessly smooth. It was initially quite alarming how close Dario would get to cars as he overtook them, but the throttle was always kept steady, there was never a panic. I guess that's what happens when you spend your career inches away from 20 other cars on an oval, at average speeds of more than 200mph...

We made good time, despite a diversion, and pulled into Duns on schedule. There was a small amount of relief on Dario's face – despite a tiny oil leak from the oil filler cap, BJH 417B didn't miss a beat. At the museum, a camera crew, two photographers and various journalists were waiting for him and the car. I made myself scarce and capitalised on a chance to look around the soon-to-open (at the time of writing) museum while everyone else was outside.

THE JIM CLARK MOTORSPORT Museum was formerly a 'room', which opened in 1969. It had welcomed more than 300,000 visitors, including Ayrton Senna, before the decision was made six years ago to expand the site. The room was filled to the rafters with trophies and Ben Smith, one of the three Jim Clark Trust trustees, admits that only a few were ever on display. The £1.6 million museum extension will rectify that.



Hands-on maintenance: Franchitti investigates minor oil filler leak, but that apart, BJH 417B completed its two-hour journey without a hitch

When we arrived, boxes were still being unpacked below the Lotus green lampshades and much of the memorabilia was being carefully assembled for display. Three walls of one area were covered with the aforementioned trophies. "You could spend a whole morning just in there," Dario says between filming duties. What the extension aids is the journey through Jim Clark's life, from quiet farmer to Indy 500 domination. Films can be played via touch-screen menus and the space for cars means that Dario's Cortina will be joined by Clark's Lotus Type 25/R6.

Ian Calder, one of the trustees, and Jim Clark's nephew, has been at the forefront of the renovations. "Originally the Scottish Borders Council wanted to move the museum to an old high school along the road," he says. "It was quite far out of town and it was Sir Jackie Stewart [the honorary president] who said that it would be perfect here. Over the last few weeks it's been all hands to the pump and there are still lots of things to finish. When it opens, it'll be tickety-boo. The job of the trustees [Ian, Ben Smith and Doug Niven] is now to keep it alive for the next 30-40 years, and we have plans on how to do that. The North West 500 [a Scottish road trip] has been a huge success and we're looking at a route around The Borders."

One of the star exhibits will be a gold and silver helmet, presented to Jim Clark after his 1965 season. The third-scale helmet is covered in jewels: an emerald to indicate home, and rubies around the 'world' for each race that he won that year. It is truly a one-off, and just to recreate it, without any of the history, would be nearing six figures.

"The helmet is going to be amazing," says Dario. "When I came here a month or so ago, I was chatting to the trustees and they were saying: 'Where is that helmet?'

'I don't know, is it at your house?'

'I'm not too sure. Isn't it in a bank vault?'

"Turns out it was at someone's house! The cars are obviously cool, but the helmet really stands out.

1969 Chevron B16

Only 23 of the Derek Bennett designed B16 coupes were built. Well-documented, complete ownership history, very original car that is a front runner in historic races.

1973 Lola T292

Raced in the 1973 European 2-Liter Championship season. Driven by Jim Busby, Guy Edwards and Bobby Rahal.

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"I remember coming to the Jim Clark room after my first Indy win [in 2007]. It just felt like something I should do. I wanted to come and have a look, reconnect with it. I jumped in the car, blasted down, wandered around on my own and went home. It was good, but this is on a different level.

"Of all the stuff in here his Indy memorabilia has a special connection to me. There's his Indy suit on display along with his Rookie jacket. Then his Indy helmet, plus the winner's plaque you were given up until the mid-1980s. After that you were given a 'Baby Borg' [the Borg Warner Trophy being the main silverware] and some of the earlier winners have asked if they can have one. I presented 1963 winner Parnelli Jones with his in 2012.

"When I saw Jim's face on the Borg Warner Trophy after my first win, someone captured it on film. We had returned to the circuit the day after and I was... severely hungover. I saw his likeness and that was the moment I realised I was going to be on the trophy with him."

As we carry on walking around the museum, Dario keeps spotting pieces that strike a chord. "There's one of the Indy bricks... I love the Indy stuff as it's so familiar. It's amazing what you get nowadays. I have a gold gun at home, a Winchester, although it had to be deactivated. It's gold! It's literally *gold*!" I mention Dario should be giving guided tours around the new museum. He laughs, "That's my retirement sorted!"

The Jim Clark Motorsport Museum is simply a 'must visit'. The soft opening was on July 11, while a grander commemoration, with Jackie Stewart, was held in late August.

What would Jim Clark have made of it all? He'd probably wonder what all the fuss was about.

BJH 417B slots in to its temporary home, alongside original Clark racewear and other memorabilia



JIM CLARK MOTORSPORT MUSEUM

42 Newtown Street, Duns, Scottish Borders, Scotland, TD11 3AU
Tel: 01361 883960

The newly extended museum is now open from 10am-4.30pm Monday-Saturday and 1pm-4.30pm on Sundays. Adult entry is £5, concessions £4.50 and children £3 (free for under fives). More information via the Jim Clark Trust website: jimclarktrust.com





Left, a glittering array of the silverware accumulated by a driver who won 25 of his 72 world championship grands prix. Right, Franchitti uses modern media to capture his own souvenirs

TRIO OF LAMBOS

Bloodline



JUST LOOK AT THEM. THERE AREN'T many cars that give you the same feeling Lamborghinis do. There's something primal about them. Aggressive, untamed, dramatic, almost... evil. We're at Silverstone and a storm is brewing overhead. Actually, a lightning fork in the background would set this scene off nicely. We've a few spots of rain, but no luck with timely electrostatic.

It may not have the longest history in motor sport, but Lamborghini has well and truly stepped up a gear in recent years. With the formation of its Squadra Corse factory racing arm in 2014, the Italian firm has absolute control over its racing range for the first time since the mid-1990s. Former Ferrari F1 team boss Stefano Domenicali is CEO, and the brand is on a roll in GT racing.

It all started with the Diablo Super Trophy back in 1996, when a fledgling SRO Motorsports Group convinced Lamborghini to start a single-make series, with Stéphane Ratel promoting it. That laid the foundations for the GT3 category we have today in many ways, but after that series finished in 2002, the firm largely took a step back from racing. Under new ownership by the Volkswagen Group from 1998, the brand was remodelling its road car range as the Diablo was retired with no suitable alternative for racing available – the flagship Murciélago was too expensive and the Gallardo had yet to come along. The net result was Lambo being absent from racing for the next eight years.

It re-entered the sport with the single-make Super Trofeo series in 2009 – using a modified Gallardo LP560-4 – that was largely designed and built by third-party partner

of the Bull

Lamborghini's recent return to GT racing has been swift and brutally successful on multiple levels. **Robert Ladbrook** takes a look at the current range of racing Huracáns and meets their maker

PHOTOGRAPHER **JAMES ROBERTS/JEP**



Reiter Engineering in Germany. For Lambo, it was a marketing exercise, but soon grew, sprouting sister series in North America, Asia and the Middle East. Now, only the Porsche Carrera Cup and Ferrari Challenge can boast a similar global championship reach.

Lamborghini finally had the momentum, reputation and machinery to make itself a real force in GT racing, and committed to re-opening the factory motor sport division.

"Our racing history may not be as intensive as other brands, but motor sport has always been in our DNA," says Maurizio Reggiani, Lamborghini's chief technical officer. "We ran class one [P1] Powerboats for many years [through the mid-1980s], making naturally aspirated V12 engines to produce 1000bhp and achieve 220kph on water, so our motor sport story is perhaps not as short as people think.

"As for circuit racing, for us it was always run as a marketing tool, with our engagement being as little as possible. But then the board wanted to do something more serious and our first decision was to put motor sport under the responsibility of research and development and take control of it in-house. That way we can design the cars the way we want, and give our customers the sort of quality they expect from Lamborghini."

The two race cars here are the first true products of Squadra Corse – the Huracán Super Trofeo Evo and GT3 Evo – flanking their progenitor, the Huracán Performante.

But what level of engineering goes into each step on the newly founded Lambo racing ladder, and how do you make an already rapid road car into a ballistic GT3 Batmobile? We spoke to the experts.

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Huracán Performante conquered the Nürburgring, before spawning two race versions. It's used as the Super Trofeo safety car

"Racing is a particular business, and you have to do it well"

HURACÁN PERFORMANTE

"If you have a good base car, it is much easier to develop into a race car, and the Huracán is the best model for this category of racing," says Reggiani. But why that specific model?

"When we developed Squadra Corse, we had the choice of two models - the flagship Aventador or the Huracán. The Aventador is the pinnacle of Lamborghini, in terms of performance, technology... and price. It has a full carbon-fibre monocoque and a 770bhp engine. It would have been killed under Balance of Performance [BoP] in GT racing, so the Huracán was better placed."

And by "better placed" he doesn't mean it sits in the Aventador's shadow, because the Huracán Performante has enough sporting credential of its own. In 2017, it caused an upset when test driver Marco Mapelli took a camouflaged version around the Nürburgring Nordshleife in 6min 52.01sec to set a new production car record. That's 5sec faster than the Porsche 918. Not bad for a car costing £215,000 - around a third of what you'd have to fork out for a 918 when they were actually available.

At the heart of the Performante is a 5.2-litre V10 engine derived from Audi. It produces 630bhp and 442lb ft of torque at 6500rpm. The car's already lightweight at 1382kg, with carbon fibre bodywork.

"What the Performante achieved around the Nürburgring was extraordinary," says Reggiani. "It's based on a different technical solution of four-wheel drive with active aerodynamics. For motor racing, many of these things aren't allowed, but we knew we had a good performance base, so we focused on taking the parts we couldn't use out."

Giorgio Sanna is Lambo's long-serving test driver, and now its head of motor sport. He was in charge of developing the road map to turn an already quick car into a world-beating GT racer, and assembling the staff to do so within Squadra Corse.

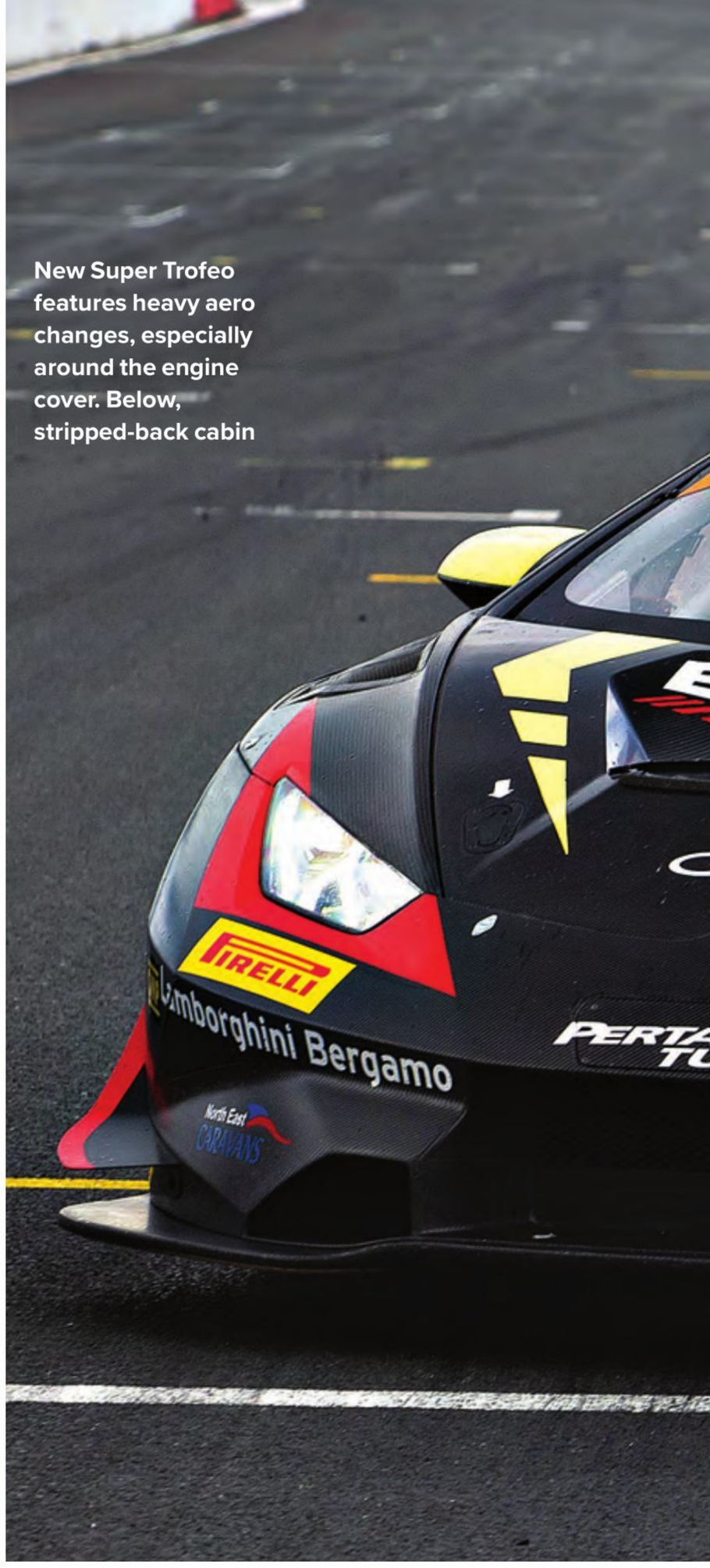
"It was fundamental to develop the competence and knowhow within Squadra Corse," Sanna says. "Motor sport is a particular business, and you must have the right people and the right competence to do it well. When making a race car, you must take into account its application, and that's not just the application of the car from a driver's point of view but from a team's view too. A race car must be easier to work on, to maintain and be repaired. And there are fundamentals that have to carry across from the road car to the race car. Lamborghini's principle is not just fast and fastest, it's also being easy to drive and have good handling behaviour. We have many gentlemen drivers in the Super Trofeo series who are Lamborghini owners on the road and they must feel that link between the road and race car. We've even fed back from the race cars to improve the road ones. We have a good exchange of technical data between road and race."



Performante interior is as you'd expect from a supercar, angled and bathed in Alcantara

HURACÁN PERFORMANTE

- **Price** £215,000
- **Engine** 5.2-litre V10
- **Power** 631bhp
- **Torque** 443lb ft @8000rpm
- **Top speed** 202mph
- **Weight** 1382kg
- **Transmission** 7-speed sequential with dual clutch, four-wheel drive
- **Suspension** Double wishbones all round
- **Brakes** Carbon-ceramic discs 380x38mm front, 356x32mm rear with six-pot calipers front, four-pot rear



New Super Trofeo features heavy aero changes, especially around the engine cover. Below, stripped-back cabin

HURACÁN SUPER TROFEO EVO

Now we're talking. As good as the Performante is, it's not a race car. And the race cars are why we're here. So, how racey is the Trofeo against its road-going sibling?

Simple answer in terms of basic componentry is not a lot. Simple answer in terms of performance is... massively.

As a single-make series, or 'Cup' spec car, it's the little things that add up to make the Super Trofeo a full-blooded race car. But all development comes at a cost, so Squadra Corse has been careful not to overdo things. The car has to be accessible, designed as an entry-level or intermediate step into GT racing for either Lamborghini owners or aspiring drivers looking to learn the ropes ahead of the wider world of GT3 competition.

"The chassis is the same as the road car, and we designed it so we can build the race cars on the same production line in the factory as the road cars, with no race-specific build queues," says Reggiani. "Having the cars assembled on the production line gives a quality assurance, as the process scrutinises everything - from depth and alignment to tubing and the clamping of every component. I think we're the first in the world to develop this sort of production technique."

The chassis is the same architecturally, but benefits from being 45 per cent stiffer thanks to the addition of the mandated crash structure. The engine is exactly the same as the Performante road car, with only the airbox and exhaust systems being changed, and a motor sport ECU is fitted. That creates a key difference in the engine's mapping, reducing power to 620bhp and limiting the top speed to around 170mph. It can't match the 202mph of the road car, but that level of performance is simply not needed.

"We've never had a driver say: 'these cars are too slow, you could use with more power'," says Sanna. "We restrict the top-end performance slightly to benefit acceleration. If we left the engine alone completely, it would be too much in the race car.

"We don't use any titanium or different camshafts in the Super Trofeo engine, it's really standard barring the ECU. We even use the road car's suspension because it's already twin wishbones all round, we just add a racing [two-way] adjustable damper."

The big difference is aerodynamics. Squadra Corse has partnered with single-seater and sports car giant Dallara, and uses the Italian firm's facilities for aero testing.

The result isn't just an increase in aero performance over the road car, the Evo is also a big step up above the older generation Super Trofeo, which was introduced in 2015.

Lamborghini cites an eight per cent reduction in drag and a three per cent increase in aero balance. Also notable on the Evo are the heavily reworked rear aerodynamics, including a roof-mounted air ram, small shark-fin engine cover and extra intakes and outlets around the rear bumper to improve airflow through the chassis.

"We work with Dallara across both the Super Trofeo and GT3 cars," explains Sanna. "With the Super Trofeo we are not forced to follow the regulations that restrict GT3 development so we have more freedom. We use the Super Trofeo to experiment and develop new technical efficiency and engineering that may be useful to the next generation of GT3 car. The drag resistance on this car is very low, which makes it good in a straight line. The shark fin makes it stable and predictable through fast corners, which is what you want for an amateur driver. If you look at the Super Trofeo grid, the gap between the novice drivers and the more experienced is very close, and that tells us we've made a car that looks after its drivers, that's accessible to help them close the gap."

"The standard engine would be too much power in the race car"



There are reliability upgrades, like beefed-up radiators and oil coolers, an X-Trac six-speed sequential gearbox, racing clutch and lightened flywheel. A nine-setting traction control system and 12-setting ABS system are also included.

HURACÁN SUPER TROFEO EVO

● **Price** £260,000 ● **Engine** 5.2-litre V10 ● **Power** 620bhp ● **Torque** 421lb ft @6500rpm ● **Top speed** 170mph ● **Weight** 1270kg ● **Transmission** 6-speed sequential (X-Trac) with racing clutch and lightweight flywheel, two-wheel drive ● **Suspension** Double wishbones with rigid bushing, front/rear anti-roll bars and two-way adjustable Öhlins dampers ● **Brakes** Steel discs 380x35mm front, 355x32mm rear; six-pot calipers front and four-pot rear; 12-position racing ABS system



The Super Trofeo has spawned series around the world, with the European version running big, competitive grids



HURACÁN GT3 EVO

GT3 has come an awfully long way since its formation in 2005. Back then cars could be developed cost-effectively by brands using stock chassis with a conversion kit of parts. Technical advancement across 15 years has changed that, and a modern GT3 is now a ground-up, purpose-built racing machine.

GT3 has grown to be the first truly global category since the glory days of Formula Ford. If you own a car, you can race it pretty much anywhere, any weekend. And if you're a young and aspiring driver, there's arguably not a better career route at the moment. So, they have to be good, and Lambo's offering is proving to be one of the best, having won multiple Blancpain GT Series rounds since its introduction last year, and across all classes too - Pro, Silver Cup and Amateur.

But to create it, Lamborghini had an issue. Engineering a GT3 car takes specialist experience, which Squadra Corse didn't have when it opened. So it looked to parent firm Audi. The first Huracán GT3 was developed on a unified platform with the R8 LMS GT3. They shared a chassis, suspension, and engine. The Huracán began life as an Audi in a dress. The Evo has changed that.

"The aero on modern GT3 cars is now similar to that of Formula 3"



There's a big step up in driving complexity with the GT3, with more modes, settings and screens

"For year one [2015], we wanted to develop the Super Trofeo and GT3 platform side-by-side," says Sanna. "But we had a lack of experience so we worked with Audi Sport Customer Racing on a common chassis and drivetrain. Now, we have four years of experience from that. The Evo is completely separate from the Audi now. We have a different engine from the Performante [which is engineered in Hungary from an Audi block] and we develop internally the suspensions, the aero [again with Dallara] and the electronics. Four years ago the structure we have now wasn't existing."

Against its siblings, the GT3 Evo is lower, wider, more aggressive and, at least to the eye, more simplistically styled.

The chassis is made from aluminium and carbon fibre and sits 27mm wider than the Trofeo's, and that extends to an extra 45mm



The Huracán GT3 has proven successful across all classes of the Blancpain GT Series, Pro, Silver and Am

with the aero appendages. The bodywork is carbon, the suspension retains its double wishbones but uses uniball joints and four-way adjustable dampers. The wheelbase is 28mm wider and the Pirelli slick tyres are an inch larger everywhere.

But by far the biggest difference lies in the aero. Much development has gone into allowing air to flow over, through and under the GT3's chassis, producing downforce.

"The level of aero in a GT3 car is now like a Formula 3 car," adds Sanna. "It's why a lot of drivers coming from F3 and F2 are immediately fast because they have the aerodynamic understanding - this is the biggest difference to the driving."

The one thing that doesn't improve is the power. While BoP means engine output and restrictors are constantly changing, the GT3 Evo is hit more than most. Due to its aero efficiency it pays a heavy price in terms of grunt, usually running at around 450bhp. That's 170 down on the Super Trofeo, and even further from the Performante road car.

How does that affect performance? On the same track and the same conditions, the leading GT3 Evo took pole position at Silverstone with a time 1.8sec faster than the best Super Trofeo. Even though Silverstone is a power circuit. That's aero for you.

The car we have here is one of Barwell Motorsport's, the British team with close links to Squadra Corse as an official factory supported team for British GT and Blancpain.

Barwell boss Mark Lemmer says: "The Lambo is perhaps the most extreme high-downforce GT3. It's quite pitch-sensitive, which means the angle of the floor to the ground and the way the air's managed underneath the car is a very sensitive area. You need experienced engineers to use the right spring and damper settings, and it also changes the way the driver handles the car because pitch changes with how you brake.

"A GT3's strength is never its acceleration or top speed. Down the straight this will hit top way before the Trofeo, but the difference is in the brakes and the cornering. You brake so much later and the aero means you have a much greater minimum speed through the corner, so you can accelerate earlier too.

"The systems on the GT3 are unbelievable. We have an extra mechanic just to look after the electronic systems, and an extra technician to manage the data during the big races. We have multiple screens in the car with lap times, rear-view, rear radar that tells you closing distances - which is great in the dark when the driver just has a blur of light behind. The amount of wiring is four-fold over a Trofeo car."

Does a cutting-edge car not require stringent and often costly maintenance?

"The engine is fairly stock, because the aero out-performs it," adds Lemmer. "The [Hör] gearbox is proven and the suspension, hubs and drive-shafts are all designed for endurance racing. The area we do have to constantly maintain is the carbon aero parts, like the floor, splitter, diffuser and sills. Because the cars are so aero heavy and run low to the ground at tracks where there are bumps or depressions - like Brands Hatch or Spa - the car's actually touching the floor quite a lot. We have to replace or repair elements after almost every event, especially the rear diffuser. The Trofeo cars run around 15mm higher so don't have that issue."

Reggiani has the final word: "We look at the Super Trofeo as the university, and the GT3 as the PhD. The GT3 has to compete against different brands, whereas the Trofeo competes against itself, so they need different development. The Huracán GT3 is the closest in relation to the street car it's based on in terms of dimension and wheelbase, because we started with a car born to be already similar to a race car."

The lineage is clear through all three, but each result is surprisingly different. ●



The GT3 has a notably different stance to the others: wider, lower and more aggressive. It's also no longer an Audi R8 in a dress

HURACÁN GT3 EVO

● **Price** £360,000 ● **Engine** 5.2-litre V10 ● **Power** 450bhp* ● **Torque** 439lb ft @6500rpm* ● **Top speed** 150mph ● **Weight** 1230kg* ● **Transmission** 6-speed sequential (Hör) with racing clutch and lightweight flywheel, two-wheel drive ● **Suspension** Double wishbones with uniball all round, four-way adjustable Öhlins dampers; three-way adjustable anti-roll bars front and rear ● **Brakes** Steel discs 380x34mm front, 355x32mm rear; Brembo six-pot calipers front, four-pot rear; 12-position racing ABS system

**Changeable according to BoP grading*

Is this the last chance saloon for McRae's protege?

Ahead of Britain's round of the World Rally Championship in Wales next month, **James Mills** meets Kris Meeke, the homegrown challenger with an explosive past and an uncertain future


TOYOTA GAZOO Racing
AUTODOC
Microsoft
DENSO
Panasonic
KONECRANES
DMG MORI
PIAA
IS-1748
YARIS
OMP

Kris Meeke is in a surprisingly good mood considering a rock came between him and a potential win at Rally Finland. Pushing hard, his Toyota Yaris WRC ran wide and the stone caught the left rear, breaking his suspension and forcing his retirement on the Saturday. It was frustrating for the Ulsterman: up until that point he had been in second place, just two seconds off the lead.



The incident fuelled rumours that his all or nothing driving style was losing him the support of team boss Tommi Mäkinen, forcing the Fin to state his support for Meeke: "Kris will be in Germany [the next rally], he will be in the car at every rally - he has a contract until the end of the season."

To be fair, it must have been hard for Meeke to leave something in reserve. In 2016 he outpaced everyone in Finland to become the first British driver to win what's widely considered to be one of the jewels in the crown of the World Rally Championship. Not only that, he set the fastest average speed ever recorded across a WRC event.

Despite the setback, and the pressure, Meeke says he's feeling good, really good. "I'm a lot happier in the car, a lot happier. I'm really enjoying my driving this year," he says, with a smile. It bodes well for Wales Rally GB, the event that Meeke feels is more than just part of the furniture of rallying, it's embedded in the culture of WRC.

"It has been the backbone of the championship since it was conceived in 1973, and before that there was the RAC Rally. To be in the mud in the forest in Wales is what every rally driver dreams about. There's something special about it, there's an atmosphere that comes from the early mornings, the cold, fog and [usually] rain - it's what we grew up knowing of rallying."

Given his fondness for the event, what are his views concerning its future? Meeke is close to Bobby Willis, the organiser behind the Circuit of Ireland rally and the man behind a bid to bring the WRC to Northern Ireland from next year. Would he like Wales dropped in favour of his homeland?

"I see no reason why we couldn't do both. It would be disappointing for the rally to move away from Wales but I think there's a massive vibe about Northern Ireland at the moment," Meeke says. "I think the roads and countryside they have to share with the public is something special and it would make an incredible World Rally."

The rumour mill has slipped into overdrive about the fate of the Corsican round. The venue holds a special place in the hearts of competitors and fans, but teams face the rather more mundane logistical challenge of reaching the island that dangles just far enough from the coasts of France, Switzerland and Italy to be an inconvenience.

"I don't like to see the Tour de Corse moving either," says Meeke, who recalls growing up in the 1980s and watching the likes of Blomqvist, Kankkunen, Mouton, Röhrl, Toivonen and Vatanen wrestle fire-spitting machines between unforgiving cliff faces on one side and punishing sheer drops on the other.

"When we go there now you're doing the exact same pieces of road as the legends back then so I don't want to see the rally disappear. So to lose a Wales Rally GB or a Corsica is not what I want. But still, I would like Northern Ireland added to the calendar!"

Meeke might feel as though he has got his mojo back, following his spectacularly public dismissal from Citroën, last year, but this season luck hasn't always been on his side, and as in Finland, mistakes have crept in here and there. "The results haven't been there for punctures or like this here in Finland; I was five centimetres outside the line and I didn't realise there was a massive rock sitting in the ditch. So simple things like that have curtailed my opportunities of being on the podium more regularly.

He's not down, though. "I have probably been faster than Sébastien Ogier [the six-time world champion, who returned to Citroën for 2019] all season, apart from Mexico where he had really good speed. We have



Having been unceremoniously dumped by Citroën last year, Meeke has found his feet again at the Toyota team

See Kris drive James on a rally stage at *motorsport magazine.com*

"We put our lives at risk to market their product, there was zero respect last year"

been able to bring home the points. So it's been frustrating in a way but certainly it's the most enjoyable experience of my life to be part of this team and to drive this car. There's something special about it."

The team he refers to is, formally, the Toyota Gazoo Racing World Rally Team. To rally fans the world over, though, it's Tommi's team. In 2015, Tommi Mäkinen, the four-time world rally champion, was appointed principal of Toyota's WRC team after being entrusted with it by Akio Toyoda, president of Toyota, himself.

Meeke believes having a former world champion driver leading the operation was the right move for both parties. "If you look at the really successful teams over the history of the sport, they had ex-competitors at the helm during their successful periods, even Citroën. Guy Fréquelin was at the helm when they had their mega-successful years."

Also added to that list are Malcolm Wilson of M-Sport, and David Richards (Prodrive) who, says Meeke, understand what it takes to win.

"With Tommi, he's been there, done it and he's one of the legends of the sport. I also think a bit of it comes from the enthusiasm right from the top of Toyota, Mr Akio Toyoda. He is a petrolhead. His enthusiasm is infectious; that trickles down and you can feel it within the team. The vibrant atmosphere is just incredible. When there was a technical glitch in Sardinia, the words Mr Toyoda put out after that, the words he used after Ott [Tänak] lost the victory due to a steering problem, that's how you manage a difficult situation.

"It's easy for everyone to jump up and say 'Hey!' when you win. But when they have a bad moment, that's when you need to pull everyone together. His words were incredible. And that's when you know this is a proper team and a proper company."

It goes unsaid, but the contrast with his treatment at Citroën is hard to ignore. The French team sacked him unceremoniously halfway through the 2018 season, referring to his "excessively high number of crashes". Few fans felt the company's communications were representative of how a professional organisation should operate.

Remarkably, Meeke doesn't come across as angry. In fact, it's Meeke that gives a masterclass in professional communications.

"Citroën gave me my opportunity back in 2013, so I have a lot to be thankful for," he says diplomatically. "I have some beautiful memories from my time at Citroën. I won my first world rally there, I ended up winning five world rallies with them. I was the only driver to win in a Citroën after Sébastien Loeb left and until Sébastien Ogier joined."

But the ruthless ending clearly still rankles. "At the end of the day, we're employed to put our lives at risk to market their product and I think that no matter if things go right or wrong, you know, everyone deserves respect. There was zero respect shown last year."

NOW HE'S WITH TOYOTA, AND the differences between both the team and its people, and the car they've produced are eye-opening. What makes the Yaris better from a driver's perspective?

"The first time I drove the Yaris, when I signed my contract last October, I could feel the road," he says. "As a driver you have to have a sixth sense, to feel the car getting grip and what's happening underneath you, and I couldn't feel it in the C3. I couldn't feel that the rear end was going to stick when you're going along a fast corner. I didn't have the confidence in it. But you could do it and get away with it most of the time. With the Yaris, the geometry and everything was correct, the DNA of the car's correct and

I could feel it stick. So relatively, that was the difference."

Does this mean he's rediscovered the form that he had in 2016, when he took two wins - Portugal and Finland - driving the DS 3 WRC? He says he's still searching.

"You're into the very elite of the elite. And then there's one that just slightly gets it all together and hits it, like Ott does at the minute, like Ogier did for a few years and like Loeb did," Meeke adds. "I felt I was getting there in 2016. I'd won two WRC rounds out of seven. I'd been leading two others but had mechanical problems. So I felt I was getting to the crest of the wave. Then we moved to the C3 and everything went downhill. I haven't found that [form] back yet. But we're still searching."

When you consider Meeke's journey to get to where he is today, it seems slightly surreal to even be asking him whether he can get back to a level where he's challenging for the World Rally Championship.

AT THE AGE OF 21, WHILE working as an engineer designing parts for Malcolm Wilson's M-Sport outfit, Meeke entered a competition organised by Peugeot and *Motorsport News* that wanted to find the next bright young thing in rallying. He and his brother couldn't afford the entry fee of £350, so they took out their first credit card and the rest is rallying history.

At M-Sport he crossed paths with Colin McRae, and while chatting during a test session, McRae mentioned that he and his father, Jimmy, who knew Kris's father well, were thinking of sponsoring a young, upcoming driver. He invited Meeke to attend a trial, along with three other youngsters.

"I'd only done seven rallies in my life!" says Meeke. "Colin McRae was my absolute idol as I'd been growing up... here I was at a test day organised by the McRae family, sitting in the driver's seat of a rally car with Colin McRae beside me, and it was the most surreal experience ever. And he said 'Right, away you go; show me what you can do'.

"If you mess up, then that's it, you're going nowhere. I did what I could. The next day Colin and his father came back to me and said, 'We would like to get involved and help your career.'"

He recognises that without McRae's support (putting Meeke through the British Rally Championship) he wouldn't be where his is today. And he agrees that it's incredibly difficult for drivers in the junior series to get to the top of the sport.

"Honestly, there's no clear answer from me, because I just lived by my wits until I got my first proper factory contract for a full works program in 2014. I was 35 years of age. So from 21 to 35, 14 years, I went up and down and probably retired twice because I didn't even drive a rally car for up to two years at certain points."

He still feels McRae's loss acutely. "I do miss him. Because not only did he become a mentor to me, I was like a young brother or young cousin or something. I actually went to live at the [McRae] family home for two and a half years."

When he's having difficult moments, Meeke only has to remind himself that it's not that long ago that he didn't think he'd ever make it as a professional rally driver.

Now here he is, driving a WRC car that, Meeke estimates, is six seconds a kilometre faster than a Group B car. And he believes that the changes to the championship's regulations are moving the WRC in the right direction for fans. "When Ogier was in a Ford last year, there was a winning driver in every team during the season. That's fantastic. You don't see that in Formula 1. That's the beauty of rally at the moment."

He's under no illusions: he has to be one of the drivers scoring wins and points, for his own sake as much as the team's.

But with the right car beneath him, and the right team behind him, hopefully it is only a matter of time before he's back on the top step of the podium, and saying another thank you to Colin McRae. ●



The Sweet Lamb Complex at Llanidloes is a favourite for rally fans, and for drivers, too

Sweet lamb's spice

Meeke's must-see stage at Wales Rally GB

"There are many good spots at Wales Rally GB, but the Sweet Lamb complex in the middle of Wales is synonymous with the sport. That's where I got my first ever test in a little Peugeot rally car before the Bulldog rally [in 2000]. That was the first time I drove a proper rally car in a forest.

I remember going there spectating and watching Colin McRae, in 1997, standing in the Sweet Lamb complex on the side of the mountain, 8pm, pitch black, rain, fireworks, Colin McRae, Richard Burns and Juha Kankkunen coming through. It put the hairs up on the back of your neck.

Every time I go back there in a rally car I just go 'Woah! This is special', you know? There's a fantastic vantage point there, so it is the one fans have to go to."

Wales Rally GB runs from October 3-6. This year's event – round 12 of the WRC season – gets underway from a ceremonial start in Liverpool on Thursday, before heading to Oulton Park Circuit for the first special stage, and into Wales on Friday. See *walesrallygb.com* for tickets.

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BARNEY OLDFIELD



Oldfield in action during the Santa Monica Road Race in California, November, 1914. His Maxwell took third, netting $1500 in prize money and clearly delighting its passenger

The four-

America's first true motor racing star, Barney Oldfield, was a cowboy in an age of steel horses. He raced hard, lived fast and rewrote the rulebook. **Paul Fearnley** reveals his remarkable story

-wheeled bandit

He was its biggest fish when motor sport's pool was small but vitally fertile: the first American renowned purely for his skill and daring at the wheel. With trademark unlit cigar clamped – for both cushioning and moistening purposes – in his mouth, and hair ruffled by the Speed Age's slipstream, he raced on beach, board and brick, and in dirt-oval sprints and cross-country slogs on dirt roads, against 'planes, trains and automobiles.

His colourful personality and cars - Red Arrow, Green Dragon, Blue Streak and Golden Submarine - caught the public imagination and he starred in Broadway's bright lights and on Hollywood's silver screen as well as at the Indianapolis 500. There were better, but there could only be one master driver of the world: Barney Oldfield.

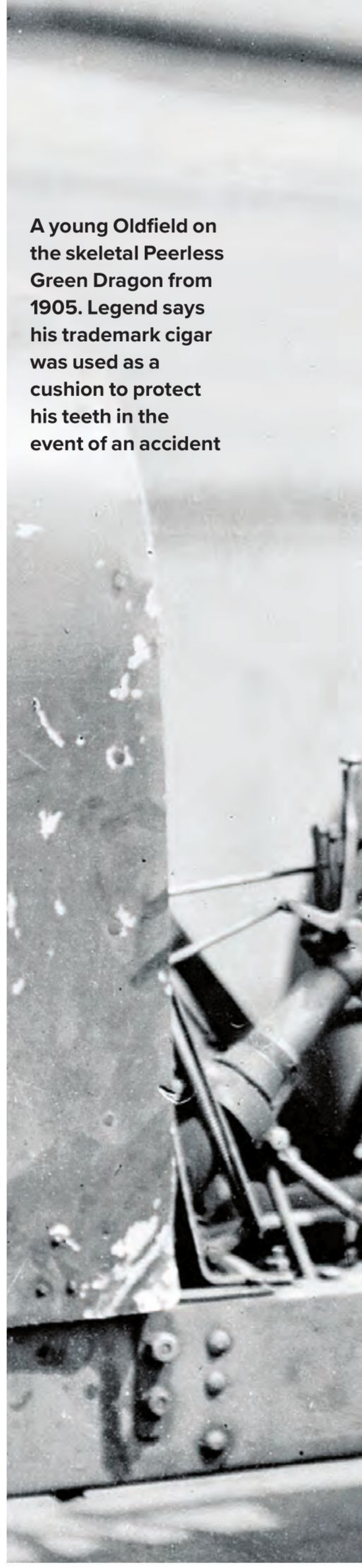
The original outlaw, often at odds with a starchy governing body sniffy about unsanctioned exploits and unashamed professionalism, Oldfield placed a high value on his time and talent. Blue-collar working poor not blue-blooded idle rich, this former Toledo hotel bellboy and elevator operator was more interested in his position in society than that on the track. Those occupational thrills had worn thin quickly, but a swelling bank balance was needed to fund his high-rolling lifestyle: a customised rail car/mobile workshop adorned with banners and slogans - Oldfield pretty much invented commercial sponsorship - plus a fancy for diamonds: rings, pins and badges.

He also part-owned a (failing) Colorado goldmine and ran a saloon in downtown Los Angeles, where he was his own best customer, as well as his own worst enemy. His was the template for 'Babe' Ruth, the force-of-nature genius who enshrined baseball as America's National Pastime in the 1920s.

Oldfield was born on January 29, 1878 in a rural township on the outskirts of Wauseon, Ohio, and christened Berna Eli after his father's infantry bunkmate during the American Civil War. The family relocated to Toledo in 1889 and Oldfield, dropping out after the eighth grade, worked as a water boy, waited tables and assisted in a mental asylum's kitchen to raise money for a bicycle: an Advanced Traveller on pneumatics. He began racing on banked wooden velodromes, aged 16, and placed second in the state championship. By 1896 he was being paid to race as an 'amateur'. For which he was blacklisted. Fast, but he was learning quickly.

His life changed forever when a rival contacted him in Salt Lake City, where Oldfield was demonstrating an Orient motorised tandem. Fellow racer Tom Cooper had persuaded his latest collaborator - a 'poor mechanical inventor' by the name of Henry Ford - that there was no reason why his friend's balance and elbows-out attitude could not be applied to new-fangled motor cars. He was right.

Despite having zero driving experience, Oldfield won on his debut at the wheel of a car, beating the field in the Manufacturers' Challenge Cup at Detroit's Grosse Pointe horse track on October 25, 1902 by a half mile. In doing so he invented drifting and opposite-lock. He did it at the wheel of a single-speed racer called the 'Ford 999'. It had a timber frame and lacked a differential, universal joints and rear suspension; its wooden-block clutch was operated by an iron lever and the exposed valve-gear and crankshaft of its 18.9-litre 'four' churned oil into the swirling muck



A young Oldfield on the skeletal Peerless Green Dragon from 1905. Legend says his trademark cigar was used as a cushion to protect his teeth in the event of an accident

GETTY

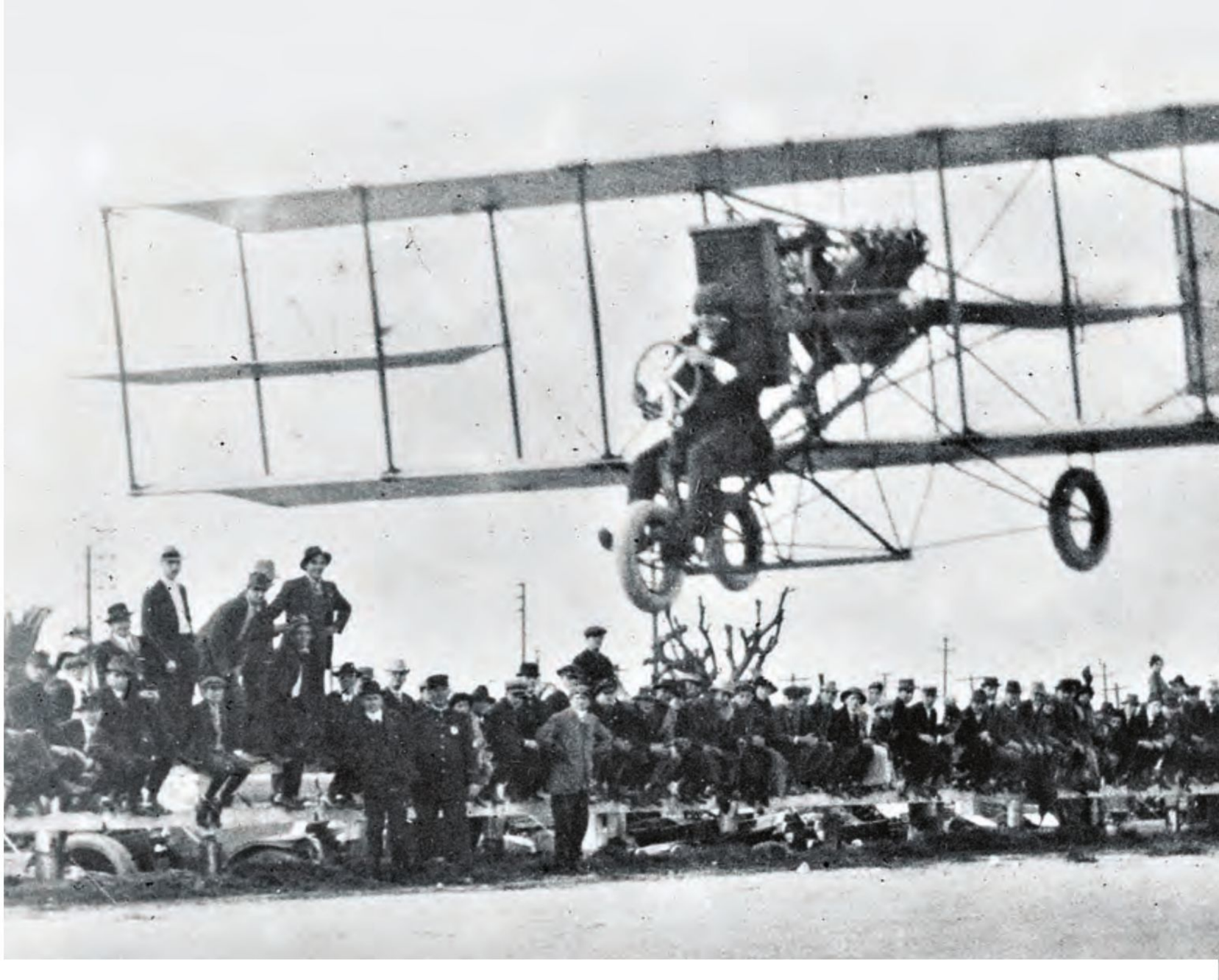
and dust. Cooper had bought the 999 for $800 from Ford prior to the race on the condition that this recalcitrant test vehicle no longer use Ford's name as its inventor became fearful that it stood no chance against the more experienced Alexander Winton and his proven 'Bullet' - the first car to win a sanctioned race at Daytona Beach.

But now, flushed with success, Ford offered Cooper and Oldfield a $5000 stake in his company. Oldfield considered it a bad risk and declined. Ford never let him forget this missed opportunity; and his friend would spend the rest of his career bidding but failing to compensate for it.

Having spent the winter wondering why he was known nationally - "You know me?" would become his catchphrase - and yet having to hold down a $2/day garage job and cycle to work, Oldfield emerged an older, wiser railbird in 1903. His car improved by mechanical valves in place of suction-type, he became the first man to travel at 60mph - or a mile a minute - on a circular track, at Indiana State Fairgrounds on June 20. Having been ridiculed for bold predictions, he reckoned this was his greatest triumph. He lowered the mark to 55.8sec two months later - and promptly signed to drive Winton's eight-cylinder 17-litre Bullet 2.

Oldfield was suddenly a gun for hire, automobile racing's Buffalo Bill. A full-time professional on a $2500 retainer, he had his expenses paid by Winton and kept his winnings. Yet the relationship did not last long. Confidence soaring after defeating the newly imported Mercedes of millionaire enthusiast William K Vanderbilt at Florida's Daytona Beach in January 1904, Oldfield began behaving much as he pleased. His Scottish-born boss Winton, who felt that racing was becoming too professional too quickly, was not sorry when mid-season his star employee crossed Cleveland to join Louis Mooers' Peerless Motor Company.

BARNEY OLDFIELD



GETTY

This partnership began his time with Peerless's Green Dragon cars, but it started with a bump when Oldfield, blinded by dust, took out 100ft of rail and two unfortunate spectators before wrecking against a large oak at the St Louis World's Fair in August. By late October, however, he was upstaging France's Léon Théry – winner of that year's Gordon Bennett Cup and deemed Europe's finest driver – at Empire City in New York to lay legitimate claim to being the world's best… at dirt-oval sprints, at least. He did so in a replacement Green Dragon built to his preferred spec: lighter, lower – 3in between flywheel and road – more streamlined and with 60hp thanks to an overhead valve engine layout rather than a T-head. He sat above its rear axle in a drilled, unpadded bucket seat and crouched in what little space the torpedo-shaped bonnet provided. His feet dangled below and often beyond the chassis rails. Racing at its most raw.

America's sports writers voted him national champion in 1905 after victories at Hartford, Buffalo, Readville, Providence and Poughkeepsie. But accidents had hardened Oldfield – and he'd met his second wife in hospital. He bought the Green Dragons – there was a later 90hp version – when his contract with Peerless ended in 1907, and went barnstorming on his own terms. It would be audits over plaudits for a few years.

Yet this daredevil with an eye for detail had a caring side. He would contest benefit races for injured rivals; press for better insurance and safety; drive the first racing car with an integral protective roll bar (*see below*); and use his vast experience – tyres were always his main concern – to advise friend Harvey Firestone: Oldfield tyres would win the 1920 Indy 500 without a single change. His shrugging aside of danger and jaunty slogans – 'My only life insurance, Firestone tires' – were for public consumption. Reporters who looked Oldfield in the eye remarked on facial ticks and ageing creases; and often he spoke of retirement – as early as 1905 – in a blend of hype and fear. His behaviour was becoming erratic, too: he had to be talked down from a Portland hotel's window ledge in 1907, his drunken response to accusations of fraud.

Probably the first racing driver to suffer burnout reckoned that record-breaking – he claimed every mark from one to 50 miles – to

The dawn of safety?

It may have had a roof, and a crash structure, but the enigmatic Golden Submarine also had its drawbacks



GETTY

Oldfield at the wheel of the Golden Submarine during a promotional event at Daytona in 1922

Oldfield concluded his career driving the most sensational competition car of its generation: Golden Submarine. Harry Miller's first full-blown racer was triggered by the tumbling death of 'Wild' Bob Burman at Corona in April 1916; Oldfield, fearless without being foolhardy, commissioned a car with a roof supported by a tubular frame. Though its teardrop body and bronze-lacquered appearance grabbed the headlines and the crowds' attention, what lay under its handsome and imposing bonnet was equally remarkable.

Miller was familiar with the best of Europe having rebuilt/modified Peugeot racing engines. But though he drew inspiration, he incorporated many of his own ideas. This 4.7-litre long-stroke eight-port 'four' featured four desmodromic valves, actioned by a single overhead cam, plus two spark plugs per wet-lined cross-flow cylinder with pent-roof combustion



Always one for a novelty, Oldfield races against pilot Lincoln Beachey and his Curtiss airplane in Los Angeles, 1914

be more dangerous than racing, because it required running full-out throughout; and he considered invitational match rather than all-comers scratch races the safest of all. He could control the latter while earning more, allowing a local hotshot his moment before inevitably winning, best-of-three. Many spectators had never seen an automobile in action before so there was no need to run at the ragged edge in order to impress.

But it was difficult to replace the buzz. For a time - 143 shows in 1906 - Oldfield contented himself by revving Green Dragon on treadmills in front of a whirling backdrop as stage hands scattered clods of earth over gawping theatre audiences to pep up a musical comedy titled *The Vanderbilt Cup*. And after his wife Bess injured her back in a fiery accident while surveying the Lowell Road Race of May 1908, Oldfield again considered his options - and the lure of the world's fastest car was too great. On 16 March, 1910 he steered a 21.5-litre chain-driven Blitzen Benz at 131.7mph through the flying mile at Daytona. It wasn't ratified as a Land Speed Record, but Oldfield and his fans couldn't have cared less; Kaiser Wilhelm II sent a congratulatory telegram.

THEN CAME THE STUNT TOO many. Oldfield was a close friend of undefeated former heavyweight champion James J Jeffries, who in 1910 returned to the ring as The Great White Hope and lost to controversial incumbent Jack Johnson. When the latter then challenged Oldfield to a race - on a $5000 bet - there could be no backing down despite the looming threat of a long ban from the American Automobile Association, for whom Johnson's skin colour was even more problematic than Oldfield's disobedience. This widely publicised and filmed event took place at Brooklyn's Sheepshead Bay Raceway on October 25. They rolled dice for pole position, Oldfield in his Knox and Johnson crammed aboard a Thomas Flyer, and the former showed no mercy on this racially laden occasion, winning the first five-mile heat by a wide margin before slowing by fully 30sec in the second to taunt his mismatched rival. Oldfield would regret the day and later express remorse for this Pyrrhic victory. He sold up for $13,500 - his cars were banned, too! - and barely touched competition machinery for 18 months. By which time it was dawning on the sport's grandees and its *enfant terrible* that perhaps they could benefit each other.

Oldfield was not entirely reformed. In 1912 he rescued a fearsome front-wheel-drive Christie from a Long Island barn in order to go racing again. Its transverse 20.3-litre V4 was canted steeply - its back row of cylinders just 8deg from horizontal - to shift weight rearward and lower the bonnet-line. There were better cars but none so spectacular for the money ($750), Oldfield killing its engine to quell understeer in the corners before

chamber. Light (186kg), due to extensive use of Alloyanum – Miller's original blend of aluminium, nickel and copper – its barrel-type arrangement allowed for a sturdy one-piece crankcase and head. Generating 155bhp at 2900rpm, it founded the Miller/Offenhauser/Meyer-Drake dynasty that dominated the Indy 500, where it was still winning, in turbocharged form, in 1976.

Oldfield talked the car up, saying that he could actually smoke his cigar now, there being so little draught and eddy within its cockpit. That he shared that space with the exhaust, which exited via the 'stinger' tail, plus a riding mechanic who would have to scramble out through the driver's door in the event of a crash, were 'safety features' glossed over. He also disliked the restricted view through slits filled with wire gauze.

Its debut in Chicago on June 16 1917 was short due to a broken valve spring after 10 miles. But the following week Oldfield beat DePalma's Packard V12 over five, 10 and 15 miles – genuine grudge matches, these – at Milwaukee.

Golden Submarine, with its three-speed gearbox, was competitive on dirt ovals but struggled on the faster banked board tracks. (Its driver's preference, experience and technique might have had something to do with that.)

Eventually the rear bodywork was removed prior to a race at LA's Ascot Park in January 1918 and Oldfield, crouching behind the scuttle, won. It was Green Dragon all over again.

But perhaps this enigmatic combination's greatest achievement was the setting of new dirt-track marks from one through to 50 miles at St Louis in August 1917: "To convince myself that I wasn't getting old," said Oldfield.

letting rip, snorting through the stubbiest of exhausts and scrabbling for grip the entire length of the next straight. In 1913 he starred in a Mack Sennett silent comedy, driving 15 miles in 15 minutes to save a demure damsel tied to a railway track by a dastardly villain. And his staged Championship of the Universe of 1914 against aviator Lincoln Beachey – Fiat Cyclone vs Curtiss pusher biplane – was said to have netted both $250,000.

OLDFIELD'S CAREER PATH straightened as the sport of racing became increasingly structured following Ford's democratising of a booming car industry. It was also illuminated by an increasingly bitter rivalry with a younger man just as hungry for success. The public relations war was no contest: Ralph DePalma was dark, brooding and studiously understated, whereas Oldfield, gruff, profane and full of jokes, was inclined to embellish stories in no need of adornment.

Nevertheless Oldfield, after the embarrassment of early defeats, knew that he would have to up his game in order to stand any chance against a rival so eminently capable and fiercely competitive. That slam-bang reputation had to take a back seat as he proved himself a secure strategist when he put his mind to it.

Oldfield finished fourth in the 1912 American Grand Prize in a Fiat which had been repaired after its practice crash that had claimed the life of Ivy League ace David Bruce-Brown. DePalma, who had won the Vanderbilt Cup on the same Milwaukee road course just three days prior, crashed his Mercedes while bidding to take the lead. Upon his return in 1913 DePalma assumed the captaincy of the Mercer team only to resign when Oldfield – still a big crowd draw if now lacking the last tenth of speed – joined without his say-so. Thus their relentless battle in the 1914 Vanderbilt Cup had an even sharper edge. It's said that DePalma, in the six-year-old Gray Ghost Mercedes, outfoxed the old fox by signalling for new tyres.

Oldfield had his moments that season, too: a maiden appearance in the Indy 500 resulted in fifth place, his Stutz, relief-driven by Norwegian Gil Andersen, the first American car home. And he won the west's biggest event: the three-day Cactus Derby in November. The event's 672 miles of unmade roads from LA to Phoenix crossed 7000ft mountains in terrible weather and Oldfield's low-slung Indy Stutz had been given no chance. But the 'Master Driver of the World', having been towed from a river by a team of mules, prevailed, soggy cigar jutting from smiling, mud-caked face.

During a busy 1915, and now driving for Maxwell, Oldfield won AAA races at Tucson and Venice in March. He did not tackle May's Indy 500, however, after turning down Bugatti and failing to strike a deal with Sunbeam. America's most famous driver had a hot-cold relationship with its most famous circuit, which was odd given that its founding father 'Crazy' Carl Fisher, a man fond of stunts, was an old bicycling buddy and a former press agent of Oldfield's. Having recorded the first sub-2min lap on the original crushed rock-and-tar surface during practice for the maiden car meeting of August 1909, Oldfield's race debut at Indianapolis would end in injury when the bonnet of his National Old Glory blew off during the ill-fated Wheeler-Schebler Trophy for stock cars. He then missed the inaugural 500 of 1911 due to his AAA ban and had a dig – too many miles for too many cars – in his newspaper column for the *Indianapolis Star*.

But in 1916 he was central to Indy's story. Allowed a record attempt in the otherwise ineligible Christie, by now on its last legs, he coaxed the track's first 100mph lap: 102.63mph. And that year's main race – in which Oldfield finished fifth in a Delage – was noticeable for its reduction to 300 miles and the absence of the defending champion. DePalma had asked for special terms and conditions and withheld his entry. He backed down two days too late and unanimous approval among rivals had to be sought. Oldfield blocked it. No doubt they saw it differently, but this rivalry was good for both of them and their subsequent sequence of match races, during which Oldfield more than held his own, were well attended. They are buried in the same Culver City cemetery in California. That they both died naturally, after a reputed 2000 races apiece, is wondrous.

America's entry into WWI finally halted Oldfield's racing career in 1918; he felt no urge to return to the cockpit after the Armistice. He continued to be a marketable name, however, and worked with/for Firestone. In 1924 Kimball Truck Company of LA built the only Oldfield road car. And during the 1930s he became a test and development driver for the Hudson Motor Car Company. But never would he reform entirely: in 1933 he ran 64mph on an Allis-Chalmers tractor to promote pneumatic rather than solid tyres. Also he announced a land speed record bid, in conjunction with Miller, using a 26ft car weighing 6500lb and powered by a supercharged 3000bhp 24-cylinder. A wind tunnel model was assessed but the project floundered due to a lack of funds.

And in 1942 he couldn't resist appearing as himself in the melodrama *Blonde Comet*, proffering hard-won advice amiably to a beautiful speed queen. This was Oldfield's final film appearance before a heart attack brought down the curtain on the 'roaring road I travelled'. He died on October 4 1946 in Beverly Hills. He had come a long way.

Oldfield's final role on the silver screen came in 1941's *Blonde Comet*, starring Virginia Vale



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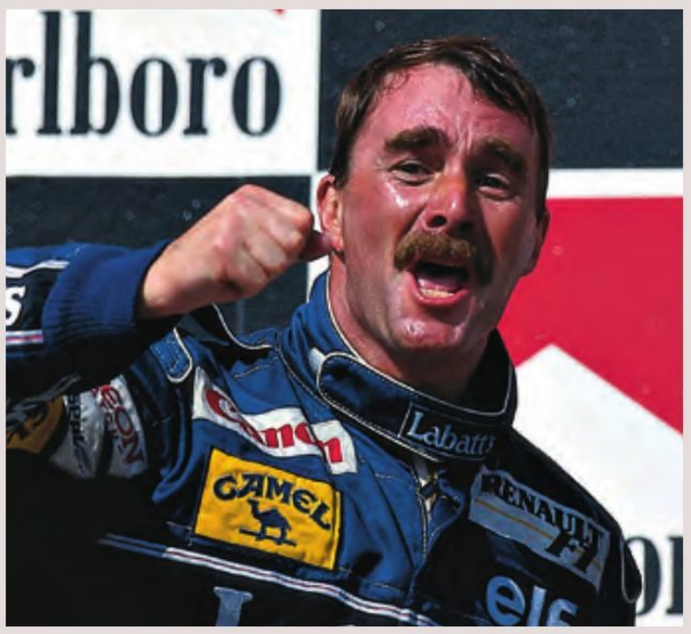
"That Oldfield and DePalma both died of natural causes, after 2000 races apiece, is wondrous"

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Three

Historical ruling grants Ferrari a veto over any rule changes in the sport, in turn leaving Mercedes and Red Bull able to choose sides in the debate over F1's future

THE FIGHT FOR F1'S FUTURE

tribes go to war

The heavyweight bosses of Ferrari, Red Bull and Mercedes are squaring up to the FIA and trading blows with Liberty, risking the future of the sport, reports **Mark Hughes**



ALAMY

AT THE TIME OF WRITING, Formula 1's much-vaunted 2021 overhaul stands on the verge of collapse. Mercedes and Red Bull are lined up behind Ferrari's veto to torpedo revolutionary aerodynamic proposals and the standardisation of costly key components.

The postponement of announcing the next rules package from June to October has not resulted in the consensus for which the FIA, Liberty and seven teams had hoped. The two sides of the argument remain as far opposed as ever they were. All that has been agreed so far is the $175m (£145m) cost cap (with non-inclusions, like driver salaries and marketing).

Throughout the whole process (which essentially began when Liberty bought F1's commercial rights in 2017), consensus has been the key word for both Liberty's Ross Brawn and FIA president Jean Todt. The hope has been to bring all the teams along in a joint vision to enhance the appeal of F1 and attend to its perceived weaknesses.

The 2021 roll-out of a 'clean-sheet F1' to align with the new contract between teams, the FIA and Liberty was supposed to be the all-in-one fully researched and fully supported encapsulation of that aim.

But as crunch time approaches, that unity is not there – and the lines are drawn by the teams of 'haves' and 'have nots'.

Whatever form F1 takes from 2021 has to be decided by October, because the current contract expires at the end of 2020. Delaying the new rules by a year, to give extra time to hammer out consensus, is not an option. Liberty must have a contract in place with the participants, otherwise it doesn't own anything beyond 2020. The participants in turn must know a year in advance what the regulations for their 2021 cars are going to be.

Ordinarily the FIA, having valiantly tried but failed to get full agreement among the teams, might simply announce the new regulations and invite the teams to enter. But Ferrari has the power – written into the regulations since 1980 – to veto any rule change that it deems against its interests. Ferrari claims it would invoke the veto only with great reluctance and would prefer its views are reflected in the rules. The inference is clear: it will use the veto if the regulations are pushed through as they are currently proposed. Which is convenient for both Mercedes and Red Bull, who share broadly the same reservations as Ferrari.

So what exactly are the proposals and what are the big teams' objections?

The FIA and Liberty need unity between all teams to solve F1's current issues. But the 'big three' have power to dictate the rules that don't suit their interests

BETTER RACING

The joint Liberty/FIA aero proposal is the key part of the 2021 F1 revolution and has been four years in the planning. Liberty has employed a team of aerodynamicists and engineers, led by Pat Symonds (ex-Benetton, Renault and Williams, to name but three), to complete an unprecedented research programme into the physics of aerodynamic wake around an open-wheel single-seater. Former Ferrari and McLaren aerodynamicist Nicholas Tombazis was initially part of this group, but subsequently became the FIA's head of single-seater technical matters. Helped by this link, the two bodies have been in full alignment and the proposed 2021 car that has arisen from the research is largely Tombazis's creation.

A current car loses about 50 per cent of its downforce when running within two lengths of the car ahead. Hence it's very difficult to get close enough through a corner to set up an overtaking move along the following straight, at least without the benefit of DRS. Furthermore, running close behind another car tends to overheat the front tyres from the extra sliding and the stalled, slow-moving airflow around them.

Based upon the research, the proposed 2021 car features vastly simplified over-body aerodynamics, with no barge boards, a simple front wing and prescribed sections that must be filled with bodywork (thereby precluding intricate vanes and appendages). A much greater proportion of total downforce is generated from the underbody, which features multiple tunnels running back from ahead of the sidepod. These act as vortex generators to feed a very big rear diffuser. Strips of bodywork above the front tyres direct a lot of the wheel wake to the centre of the car. These things combined generate a much cleaner wake - and the car behind is much less sensitive to the airflow.

Simulation suggests that this car would lose only 5-10 per cent of its downforce when running closely, a spectacular improvement and one that could make the much-criticised drag reduction system redundant.

CLOSING THE PERFORMANCE GAP

The notional box sections that must be filled with bodywork essentially make the aerodynamic format of the car much more prescriptive than it is now. Aerodynamic performance would be less of a differentiator than currently, simply because there'd be less performance to be found there.

"The idea," says Ross Brawn, "is that if a big team can devote a lot more resource to it than a small team, it will still find a performance advantage. But rather than that being 2sec, it might be more like 0.2sec.



"Just standardising brakes would cut teams' costs from $3 million per season down to $475,000"





MOTORSPORT IMAGES

The larger teams are even investing in clever, bespoke wheel rim design to aid aero, tyre and braking performance... at a significant cost

"That means that if a smaller team has a really strong young driver or a great strategy team, it can still be a factor, still has a chance of doing something."

A further 40 per cent reduction in permitted wind tunnel testing time is among the other proposals. Other performance differentiators have been identified and limited accordingly and are covered under the guise of financial sustainability. Standardised wheel rims, for example, would end one area of expense where the higher R&D spend of a bigger team currently buys it a performance advantage. Wheel rim design and how it is used, not just for aerodynamic performance but also to optimise control of tyre temperatures, is currently a major differentiator.

FINANCIAL SUSTAINABILITY

In order to match the budget cap with a spend level that can allow even the smaller teams to be financially viable, an extensive programme of standardisation is proposed.

This is set to include fuel systems, radiators, braking systems, pit equipment, wheel rims, hubs and nuts. The braking system, for example, would cut costs from the current $3 million per team annually to about $475,000.

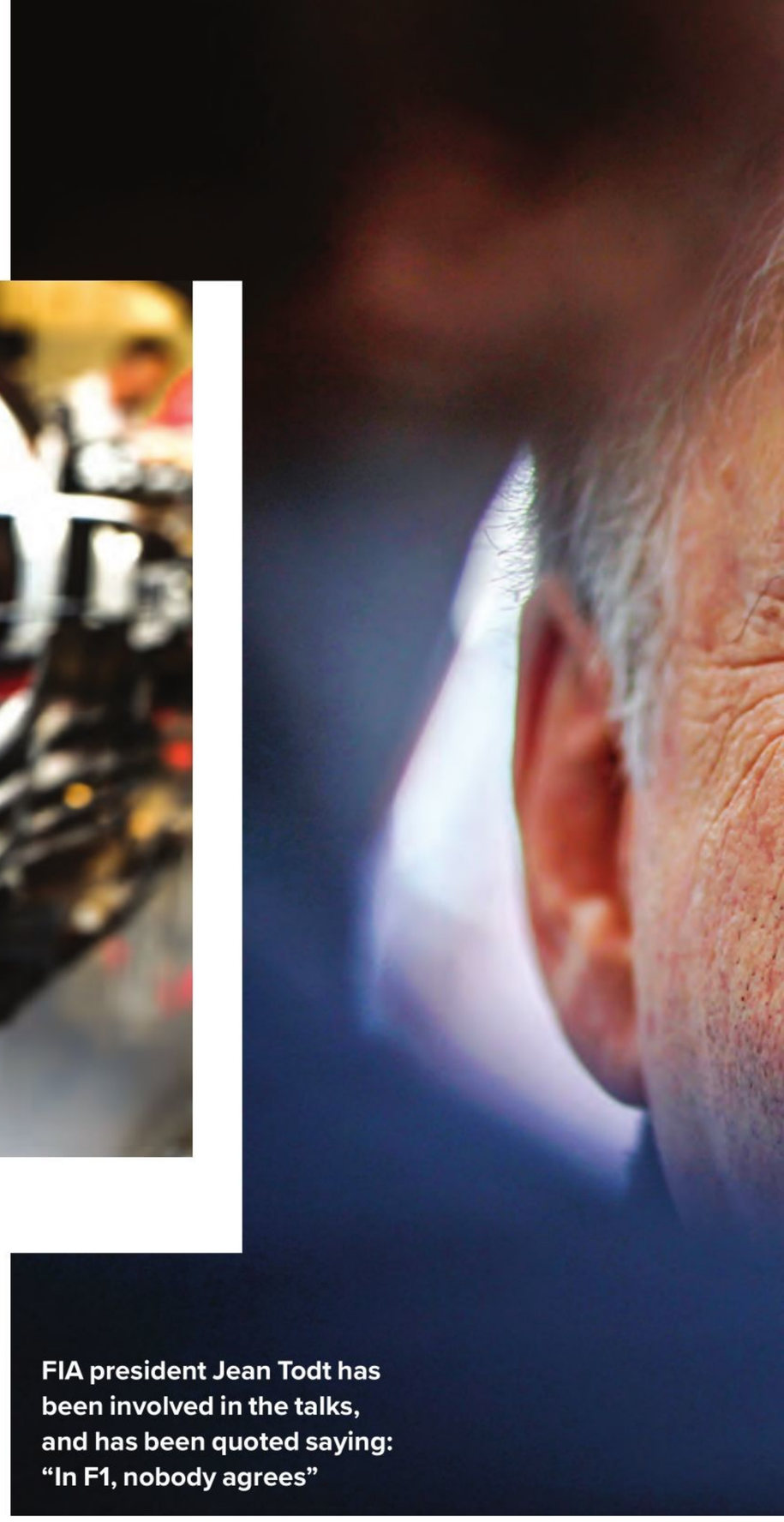
There was an initial proposal for a standardised gearbox to be adopted, and tenders went out, but the concept was withdrawn and in its place is a suggested five-year spec freeze instead.

Hydraulic suspension (the most sophisticated of which currently mimic traits of active suspension) would be banned, as would certain components, such as inerters (which do improve performance, but are actually also performance-neutral, mostly because everybody has them).

THE FIGHT FOR F1'S FUTURE



Pirelli has copped some flack from the teams, but is tyre talk just a diversion?



FIA president Jean Todt has been involved in the talks, and has been quoted saying: "In F1, nobody agrees"

FERRARI'S OBJECTIONS ARE essentially those of Mercedes and Red Bull. The position of all three top teams can almost be taken as one - all lined up behind the power of Ferrari's veto.

They have agreed in principle to sign off on the $175m cost cap, but they do not agree with the aero regs or the standardisation.

The lack of feasible differentiation between cars with the proposed aero regs is a problem for them. They want to retain a greater ability to innovate than these regulations would permit. The prescriptive boxes are a particular point of issue.

They contend that never in the history of the sport has it tried to make so many major changes all in one sweep - financial, aerodynamic, tyres (which are set to go from 13-inch to 18-inch low profile), standardisation and possible changes to the format of race weekends. The potential for an unclear outcome is too great.

The objective of improving the racing by aerodynamic means is too uncertain, they claim. Just a small, unforeseen innovation could fundamentally change a car's aerodynamic behaviour in a way that would completely fail to meet the objective. The current regs have been honed over three decades and these start from scratch in a way that has not been done before. The likelihood of unintended consequences is therefore high. Furthermore, new regs inevitably increase the field spread, they say. Which thereby would be in direct opposition of the 'close up the field' objective.

A better way of improving the racing, they contend, would be by improving the tyres, which currently tend to overheat when running close behind another car and which can be very difficult to get into the ideal operating window. More robust tyre performance would achieve the better racing objective, they maintain, with much more certainty than an aero change.

The three also believe standardisation of major components would not meet the objective of increasing financial viability. In justifying this position, they claim that the current standardised parts supplied by external contractors cost more in quality control and x-raying to achieve the necessary levels of reliability, than it would cost to make themselves.

THE REDUCTION OF AERO AS A performance differentiator and the standardisation of parts strike at the heart of how the top teams use their greater budgets to be quite so good.

Together with the largely agreed changes in income distribution between the teams (which would result in slightly lower bonuses being paid to the top teams, with the saving spread out to those lower down the order), acceptance of the technical proposals would mean voluntarily risking their pre-eminence. It would be turkeys voting for Christmas.

Their belief is that the proposals might prove *too* effective in reducing the inbuilt advantages of the top teams. Hence the other seven are happy with what's on the table.

"The time for talking is over and the bosses at F1 and the FIA need to act," says McLaren team principal Andreas Seidl. "We have all downloaded our input. We've done this for two years, all the teams. The FIA and F1 have a clear idea of what they want to put in place. We simply want to see action now and we can move on."

It's a view backed up by Claire Williams. "We had some foundation principles in place and Williams fundamentally agreed with those. I'd like to see them adhered to as best as possible," she adds.

However, while the motives behind the position of the top teams might be transparent, some of the arguments they bring seem to have some validity. They may be making those points for reasons of self-interest, but they do hold up independently.

Prime among these is the tyre situation. The racing would self-evidently be improved if Pirelli could provide front tyres that did not overheat when close behind another car. But heat-degrading compounds have been a fundamental way of providing the differing performances that Pirelli was asked to conjure. "I think we have been asking totally the wrong things of Pirelli," says Pat



MOTORSPORT IMAGES

"There's not been a serious look at where F1 should be, until now"

Symonds, as the F1 Group begins to recognise that a better understood and more precise model of tyre behaviour needs to be incorporated into the proposed changes.

The problem goes deeper than that, though. Pirelli's preferred concept of racing tyre is the double belt, a traditional construction that in the days of the tyre wars was rendered obsolete by the more advanced single belt. To keep the stresses of the double belt within the safety parameters, it needs high minimum pressures, giving a tyre that's prone to blistering, graining or very difficult to get into its operating window. Pirelli moved to this construction after the very public failures of its single-belt tyres in 2013, most notably at Silverstone. But the effect, with the high-downforce, heavy, super-torquey hybrid cars is a tyre that either needs to be driven seconds off the pace in races or which is difficult to manage (according to how deep the tread gauge is made).

There are real concerns about whether Pirelli's preferred concept can be made compatible with the traits of the tyres F1 ideally needs. The Grand Prix Drivers' Association (GPDA) has expressed these doubts strongly behind the scenes for years, but is becoming increasingly strident about the matter. Ferrari/Mercedes/Red Bull might just be seeing that criticism of the tyres as a convenient way of busting the aero proposals (as in, 'What's the point of changing aero when it's the tyres that are the problem?'). The GPDA looks upon this sudden support of its tyre views with some scepticism. As well as pushing for better tyres, the GPDA also largely approves of the proposed aero changes. There is a sense that the three big teams are jumping on their bandwagon regarding tyre criticisms, just to achieve an altogether different objective.

Furthermore, "Pirelli provides up to $60 million annually to F1's global budget," says one of them. "Liberty is not going to surrender that and the teams are not prepared to..." Pirelli is staying, in other words. The big teams know this, but don't mind criticising Pirelli in order to bust the aero regs down.

The retention of Pirelli – indeed of a single-supply tyre manufacturer – is one of two key points that the proposed 2021 regs are having to wind their way around. The other is the retention of hybrid power units, which is the main reason the cars are much heavier than ideal. "The cars are way too heavy," says Lewis Hamilton. "With a lighter car we could fight harder. At the end of the race we can push more, we can race more without so much of a tyre drop-off and that's because the car is lighter on fuel." As such, refuelling has come back onto the radar for 2021. But with better tyres and/or lighter cars (if hybrids were abandoned), there would be no need for that. But the power of the automotive manufacturers who have invested in them holds sway.

"There are some things on which we can't turn the clock back," acknowledges Brawn. "This is a very impressive engine but it's pretty complicated and pretty heavy with its batteries and energy recovery systems. We'd all love the cars to be lighter...

"Recently Jenson drove the Brawn GP car from 2009 and it was a delight, very light, very compact. He said it was a joy and asked whether we could go back to those days. But the confrontation to go back that far would be too damaging for F1. So we have to operate within some constraints. That's the commercial reality."

Between those two unhelpful hard points, the Brawn-led group has come up with an incredibly well-researched, funded and well-intentioned set of proposals for the future of F1. Quite how successful they would be in meeting the objectives can't be known for certain. But even on this Brawn is open-minded. "These regulations would not be a one-stop shop," he insists. "The group will carry on working as team solutions evolve. We'll monitor and develop to make sure we achieve the objectives.

"Where we are today has been reached without an awful lot of structure – the cars we have now, the way we race now. Decisions and directions have evolved due to political pressures and there's not been a serious look at where F1 should sit until now."

Except that there are three powerful teams lined up behind a finger on the nuclear veto button... O

Staying grounded

Sometimes it's best to be second to the party. Lotus was first to exploit the new science of ground effect but, as **Doug Nye** explains, it was Williams which grabbed the ball and ran



MOTORSPORT IMAGES





After a disappointing early season, the FW07 leapt ahead with Dernie's new underbody. Above, from left: Dernie, Head and Williams

THE LINE OF PATRICK HEAD-masterminded Formula 1 Williams-Cosworth FW07s proved to be the most effective successors to the Lotus 78-79 series' legacy of 'underwing' ground-effect aerodynamic technology. Patrick had joined Frank Williams in his new Williams Grand Prix Engineering Ltd team on its formation in 1977. He had watched the fast-cornering Lotus 78 with growing interest, but felt he didn't quite understand its aerodynamic approach. His fledgling team lacked the funds to invest in wind-tunnel test time to learn what he did not know. Consequently his first Williams FW06 design for 1978 made no attempt to emulate Lotus wing-car principles. But with growing Saudia sponsorship, 1979 would be different.

Patrick: "I was aware that Lotus did much of their wind tunnel testing at Imperial College in London, using quarter-scale models. Their tunnel incorporated a moving ground surface beneath the models tested, and I appreciated that was important."

He contacted Dr John Harvey, head of Imperial's aeronautics department, "...who explained that Lotus did its work in the tunnel, he did some consultancy work for Arrows, and there was room for one other team. We wanted to be that other team..."

Patrick's new FW07 design superficially resembled the Lotus 79, "...but I tried to optimise that layout". He and Neil Oatley completed the design, while new team addition Frank Dernie – ex-Hesketh (and himself an Imperial College graduate) – would contribute greatly to its development.

TECH FOCUS: WILLIAMS FW07

The Williams FW07 cars embraced several different variants – the original 1979 version, followed by the World Championship-winning FW07B of 1980, then the FW07C of 1981. 'FW07D' was the experimental 6-wheeler, which also ran in conventional form. Of these cars there is no better cutaway drawing than this masterly depiction of the 1981 FW07C, by the great Tony Matthews.

UNDERFLOOR

Upper side of the underwing venturi section sweeping up from monocoque-chassis floor level. A similarly-shaped engine-bay undertray, new at the 1979 British GP, made the FW07 a winner.

SHARK FINS

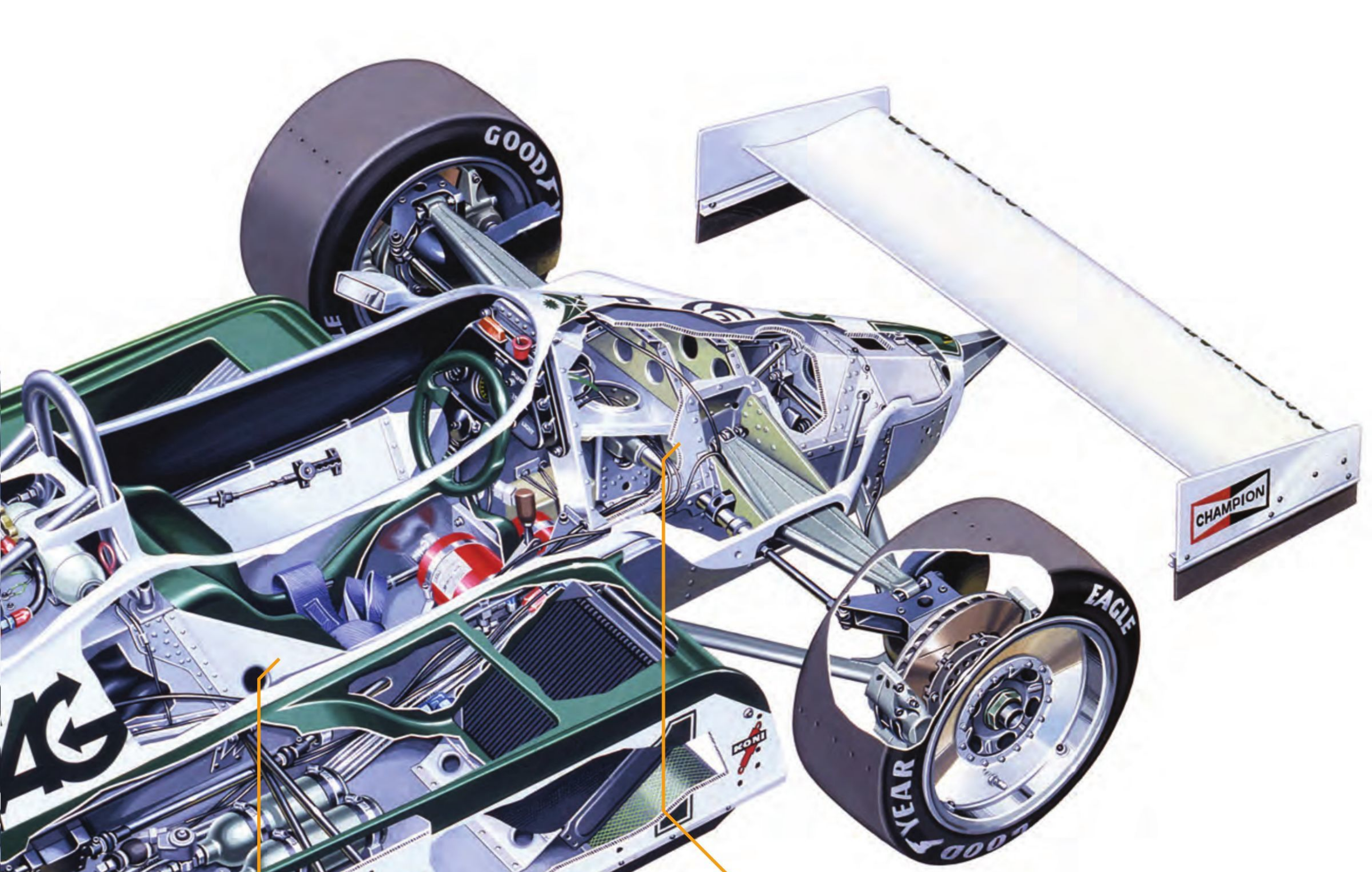
The 'shark's fin' that split airflow onto the rear tyres and towards the tail wing appeared on the 1979 FW07s but was deleted from the cleaned-up 1980 FW07Bs. It reappeared on the 1981 FW07C, as shown here. Williams at the time had no way of measuring aerodynamic wheel drag.

ENGINE

Cosworth-Ford DFV V8 engine, bore and stroke 85.6mm x 64.8mm, capacity 2993cc, Lucas fuel injection, four valves per cylinder, 934.5mm inlet, 29mm exhaust, minimum 470bhp, max rpm 11,100, unit weight 360lbs/163kg.

GEARBOX

Williams-adapted Hewland FGA400 five-speed and reverse transaxle gearbox – the delta tail wing above it has been described in retrospect by one team member as having been "monumentally sh**" though this was not perhaps recognised at the time!



CHASSIS
The 1981 FW07C monocoque featured this faceted, flat-paneled top in aluminium honeycomb sheet, replacing the Lotus 79-matching tall curved panel arching over the driver's legs in the 1979 FW07 and 1980 FW07B tubs, stiffening this 07C structure.

RIGIDITY
Maximising underwing side pod area meant minimising chassis width, threatening its torsional strength. Patrick Head compensated by using aluminium-honeycomb sheet skinning. When the FW07's cockpit flexed, strengthening fillets were added – as in FW07Bs and Cs.

The Williams FW07 began life as a flat sheet of aluminium honeycomb sandwich material, some 82-inches long and specially bonded with 22-gauge skins sandwiching 0.45-inch thick aviation-spec honeycomb cell filling. Numerous aluminium inserts and dowels fitted into drillings within the sheet as mounting strong points. Two longitudinal slots were routed out, allowing the sheet to be folded along these slots like a child's cut-out card model to form the basic U-section tub. The necessary brackets were then bonded and riveted into place. The tub was then stiffened by an added tank top behind the cockpit and seat-back panels, plus 20-gauge aluminium inner skins shaped over internal bulkheads along each side. In original 1979 form this cockpit area flexed too much, and for the 1980 FW07B development, folded stiffening fillets were inserted around the driver's shoulder area.

The front end of the tub supported a rugged suspension-pivot bridge. Pedal mounts were bonded and riveted to the tub floor with inserts protruding through the front bulkhead to the master cylinders. A tall, arched scuttle panel, bonded and riveted to the dash hoop, enclosed the driver's leg area.

The 3-litre Cosworth-Ford DFV hung on the back of this chassis nacelle. Great care was taken to grind off all intruding rivets to protect the ATL 40-gallon fuel bag housed between driver and engine. Behind the V8 a complex cast-magnesium adaptor incorporated the oil tank, a Desoutter air-starter motor and the clutch slave unit. Two transverse plates carried the rear suspension pivots. A Hewland FGB five-speed transaxle was used, with high-level gearchange to clear airstream through the side pod.

Suspension was very stiff to react to predicted under-wing download, and front and rear rocker arms acted upon inboard spring/damper units, out of the airstream.

The all-important sidepods housed underwing surfaces made initially in glassfibre but it was too easily deflected by the downloads generated. Through 1980-81 aluminium honeycomb would be used, until replaced by carbon-composite on the 1982 FW08s. A sliding skirt system attached along the outer edge of each underwing tray, to prevent surrounding airflow refilling the low-pressure area generated by the underwings.

Overall, during its long frontline life, from the April 1979 Spanish GP to the April 1982 US GP (West) at Long Beach, the Williams-Cosworth FW07 family would carry Alan Jones to the 1980 Drivers' World title, and win back-to-back Constructors' Championship titles in 1980-81, plus 18 races overall, 15 of which were full World Championship GPs.

Initially, the under-developed design struggled somewhat in 1979, until one day that July when Frank Dernie could hardly believe the figures he was seeing. He was at the Imperial College '5 x 4' wind tunnel - in South Kensington - testing a quarter-scale FW07 model.

Reading the pressure-tapping read-outs, Frank recalls: "It became clear that airflow beneath the underbody shape we'd been running was just stalled from the back of the chassis rearwards, around the engine and gearbox. It wasn't generating any downforce. I'd been in the tunnel trying different underbody shapes – cut with scissors from 12-thou-thick S1C aluminium. We'd do a run, then check the pressure-change figures – and then here was a progressively up-curved and expanding shape which showed a massive gain – not just an improvement, but a truly *massive* gain!

"I went straight to the works, drew the new shape and we made an undertray fairing in NS4 standard high-strength aluminium that you could bend without it breaking, to fit around the bottom of the engine. From those quarter-scale test results I confidently expected a shedload more downforce, and we rushed the parts to Silverstone just in time for British Grand Prix practice, '79."

Frank Williams once outlined that momentous weekend to me like this: "The Renaults won their first Grand Prix, on home soil at Dijon, split by Villeneuve's Ferrari – and all on French Michelin tyres. Alan had come fourth there, the first Goodyear runner, and Clay (Regazzoni) sixth, unable to do anything about those giant teams up front.

"I thought this was possibly the start of a new age. The industrial giants like Renault, Alfa Romeo and Fiat – operating through Ferrari – with their vast engineering resources, would just kill the established specialist teams like ourselves... But then we went testing at Silverstone, and it really came home to me just how good Patrick's '07 was becoming...

"I could not believe my watch. Alan went out and on his second lap did a 14.6, then 14.0, 13.6. 13.2. When he got down to 13.6 I thought 'This can't be right, I'd better check these watches', but there was no mistake, and with the underfairing he was suddenly down to 12.6! Although we didn't realise it immediately, the improvement was helped by a very strong engine, but by the end of the day Alan was slamming in 12.6s and 12.8s as he liked – against an existing record of 1:18! – and blowing everybody's mind."

In qualifying, Alan finally clocked a shattering 1:11.8, averaging 145.55mph for the near 3-mile lap. Both Alan Jones and a Williams car were on pole position for the first time in their respective careers, and Clay Regazzoni in the sister FW07 qualified fourth-fastest, behind Jean-Pierre Jabouille's Renault and Nelson Piquet's Brabham.

The Williams FW07 twins then ran first and third early in that race, split by a sweating Jabouille's Renault until its tyres degraded and on lap 17 he headed for the pits. For 22 more laps Jones and Regazzoni streaked around 1-2, but suddenly it was the rugged Australian's turn to dive into the pit lane – for the neck of his Cosworth engine's water pump had cracked, dribbling the coolant away.

Clay Regazzoni – veteran, hard-bitten, popular Clay – blared around untouchable, lap after lap, to win the British Grand Prix. Only days previously Renault had scored its first *Grande Epreuve* victory, on home soil; now the Williams team emulated that success.

Frank Williams himself was happy but controlled, satisfied for himself and his team but desperately sorry for Alan, whose success this should have been. But he was delighted to have his chief sponsor, Prince Mohammed, present... "Normally he would have left right after the race, but he seemed intrigued by everybody's reaction. Clay was immensely popular with the crowd, and people were flooding over the banks and massing around the pits cheering for him. The Prince spent a couple of hours with Clay in the motorhome... and then he actually insisted on walking back to the helicopter with me, through all the crowds. He didn't want to be driven..."

> "Clay Regazzoni – hard-bitten, popular Clay – blared around untouchable to win the British GP"

So that first victory for Williams – and for Patrick Head's Williams-Cosworth FW07 – was both momentous and moving. But, of course, it had been victory in just a minor battle in a major war. The Williams team was hungry for more success – and it followed as Jonesie won the German GP at Hockenheim, with Clay making it an FW07 1-2 – after Renault had taken pole position, and Ferrari set fastest lap.

In Austria, Alan won yet again – Clay fifth. With the cars on the starting grid a rival team manager was found underneath the spare FW07 in the deserted paddock, measuring-up its 'trick' underfloor diffuser.

In the Dutch GP, Alan scored his third win in a row, the team's fourth – but yet again Renault took pole and Ferrari fastest lap. Ferrari then shone on its home ground at Monza, Clay third, Alan ninth after a stop to change battery and spark-box. In Canada the two FW07s finished 1-2 again, Jones ahead of Regazzoni – and in the US GP at Watkins Glen Alan qualified on pole with Clay fifth fastest, but after a mid-race tyre change Jones's FW07 shed a wheel while Clay – in his farewell Williams drive – retired with damaged steering after clouting Piquet's Brabham.

That year's Drivers' World Championship title went to Jody Scheckter of Ferrari, from his team-mate Gilles Villeneuve – then Alan Jones third. But while Scheckter had won three of that year's GPs and Villeneuve just two – Alan Jones had won four. The Williams team's early season disappointments with the carried-over FW06 cars, and then late development of the replacement FW07, had cost the Didcot team top honours.

Into 1980 the FW07B development sought two seconds per lap improvement in winter testing at Ricard. New chassis '5 and '6 were the first stiffened '07Bs, and with an update involving revised undersides and modified cooling systems. For 1980, Williams had 18 available Cosworth DFV engines, 13 being raced, while four were earmarked primarily for the test team, and one was exclusively for "experimental purposes". A definitive B-spec was first raced in the Belgian GP.

For 1981, to combat the governing body's sliding-skirt ban, Williams produced the unskirted, ballasted 'clearance car' FW07C – new chassis '11 and '12 being built to this standard. The family expanded – omitting a chassis number '13 – until chassis '17 became (officially) the last built. For 1982 they were replaced by the FW08 – originally intended to be a six-wheeler – but which emerged as a conventional four-wheeler built to run extremely light with an onboard reservoir for its 'water-cooled brakes', which would enable it to be brought up to legal minimum weight in time for post-race scrutineering. Oh, what a web we weave...

These FW07s were truly classic Grand Prix cars of which Frank Williams, Patrick Head and their men could be – and are – justifiably proud.

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P1 GTR poses before slightly gentler sporting concepts from Jaguar and Austin-Healey

Extreme sports

McLaren designed its P1 GTR purely for racing circuits, but customers soon had other ideas. **Simon de Burton** explains

The Klausen garage in Gland, Switzerland, opened its doors a year ago as a one-stop shop for anything and everything to do with historic and exotic automobiles. Named after the historic Klausen Pass, famed for its 'mountain race' hillclimbs of the 1920s and '30s, the business offers everything from secure storage to post-winter recommissioning and from artisan restorations to racing car preparation and circuit driving tuition.

The firm also features a showroom filled with exceptional cars that are either owned by Klausen or offered for sale on consignment – with one of the most interesting offerings currently available being this McLaren P1 GTR. A mere 58 GTRs were made by McLaren Special Operations to commemorate the 20th anniversary of the marque's celebrated 1995 Le Mans win with the F1 GTR.

Built after production of the 375 P1 road cars had come to an end, the GTR models were initially offered only to existing P1 owners at a price of £1.98m – a premium of £1m more than the standard car, although this was to include entry to a worldwide trackday series.

In the event not every potential buyer proved interested in that, some cars were offered at less money but without the option to take part. In each case, buyers got a P1



A cocktail of carbon and aero sophistication, this is chassis number 10 of the 58 P1 GTRs McLaren made





that was markedly more powerful than the road-going version while being 50kg lighter - meaning the 986bhp 3.8-litre twin turbo V8 engine generated a power-to-weight ratio of 685bhp per ton.

Add to this a bespoke titanium and inconel exhaust system, improved downforce, race-prepared suspension and an all-important set of slick tyres... the result was a P1 that proved capable of sub seven-minute laps around the Nürburgring Nordschleife and topped out at 217mph (albeit only because of its rev limiter).

Although regarded by many as the ultimate trackday car of its era, the often perverse thinking of the ultra-wealthy led to many owners seeking to have their GTRs made road legal, a service that was provided by Hampshire-based marque specialist Lanzante (the firm that prepared the 1995 Le Mans-winning F1 GTR) and proved surprisingly popular.

The main reason? With no suitable race series in which it could compete, the plug-in hybrid GTR really is just a plaything in its 'standard' form.

As this issue went to press, there were several P1 GTRs for sale around the world - including chassis number one (on offer in America for $7m), the last one to have been made (also in the States, POA) and car number 34, which was available from Carlink International in the Netherlands for €2.9m.

On that basis, the €2.1m being asked by Klausen for chassis number 10 seems entirely realistic, especially since it has clocked a mere 1400 kilometres from new and has been maintained throughout by the factory's P1 GTR Workshop.

Completed in 2015, the car has subsequently taken part in track events everywhere from Barcelona to Bahrain and from Austin to Hockenheim. It remains eligible to participate in future McLaren events around the world.

Contact Klausen for more information - or you could just buy a Caterham..

McLAREN P1 GTR
Chassis number 10. On offer at Klausen, Gland, Switzerland. €2.1m *klausen.com*

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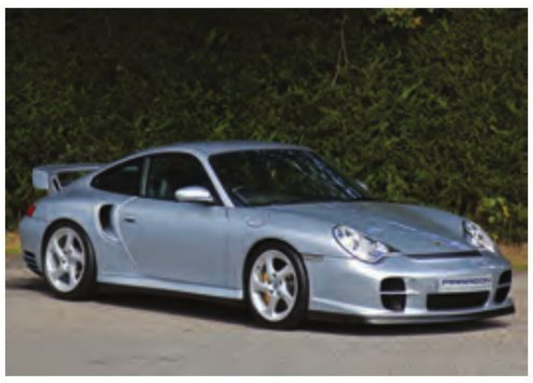
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Museum in pieces

The loss of the Morbidelli Motorcycle Museum has at least given Bonhams a mammoth sale, says **Simon de Burton**

THE MARKET FOR CLASSIC CARS might be going through a period of 'adjustment' - but the demand for old and classic motorcycles appears to be soaring, a fact evinced by the consignment to Bonhams of the largest single-owner collection of bikes the auction house has so far been asked to disperse.

The 300 or so machines come from Pesaro's Morbidelli Motorcycle Museum, which was established during the early 1980s by Giancarlo Morbidelli. The self-made Italian engineering guru's successful woodwork machinery business enabled him to fund an eponymous motorcycle manufacturer that went from zero to hero within a decade, winning the 125cc World Championship in 1975 and '76 and both the 125cc and 250cc categories in '77.



Giancarlo Morbidelli built the collection over 30 years

Morbidelli's lifelong enthusiasm for two wheels led to him establish the race team in 1969, initially with a 50cc bike before moving to larger-capacity machines which, following the construction of a factory in collaboration with Benelli, became available for competitors to buy in 1976. A Morbidelli for the road was even developed, but the cost of the exotic V8-engined sports tourer ($45,000 in 1997) meant that only three production models left the line.

Among the highlights of the collection set to cross the block at Bonhams are two Morbidelli GP bikes designed and built by Morbidelli himself in a small workshop within the building where the woodworking equipment was made.

One is the 125cc machine raced to second place by the late Spanish ace Angel Nieto in both the Spanish and German GPs of 1973 (£80,000 - 120,000), while the other is the 250cc racer built for 15-time world champion Giacomo Agostini, who took it to second at Misano in 1976 (£60,000 - 100,000).

The world championship-winning 125cc and 250cc bikes will be retained by the Morbidelli family, along with most of the other GP contenders - but plenty of rare competition iron from other marques will be offered, including a 1942 Benelli 250cc supercharged four that Morbidelli built from genuine parts as a 'continuation' of the original factory bike that never raced due to the escalation of World War II.

It is tipped to realise £400,000-600,000, the same as a 1964 Ducati 124cc four - which also never raced - that was created by the legendary Fabio Taglionio, the marque's chief engineer. Lost for many years, the one-off was rebuilt by Morbidelli after the engine was found in Russia and the frame turned up in the former Yugoslavia.

In addition to the hundreds of motorcycles - which range from pioneer bikes to models built during the 1980s - the collection also includes memorabilia, Morbidelli's personal reference library, drawings, trophies and signs. The majority of lots will be offered at no reserve.

Contents of the Morbidelli Motorcycle Museum. On sale at Bonhams, Stafford, October 18-20. *bonhams.com*



1975 JAWA 350. SOLD FOR £8,660, H & H.
This superbly original Jawa enduro bike competed in the 1975 International Six Days Trial as part of the official GB team and secured a bronze medal. It was offered in unrestored condition, complete with the scrutineer markings applied during the gruelling event. The bike was part of a single-owner collection that also included a rare Laverda-Husqvarna LH3 that failed to find a buyer.

Two wheels gain traction

While the classic car market slows, vintage motorbikes are booming business

AS TOUCHED UPON IN OUR preview of Bonhams sale of the Morbidelli collection, the classic motorcycle market appears to be going from strength to strength as buyers recognise the fact that numerous interesting, evocative and still usable machines remain available at pin money prices compared with even middle-of-the-road collector's cars.

At H & H's annual July sale in the National Motorcycle Museum, for example, more than 300 bikes came up for grabs ranging from long-abandoned and sometimes rather obscure rebuild projects to some meticulously restored blue-chip classics.

The auction returned a healthy 76 per cent sale rate by value (with the unsold lots largely being accounted for by non-original machines or those with over-optimistic estimates), while the span of prices achieved extended from the low hundreds to £120,750 for the star of the show, a Brough Superior Black Alpine.

Demand is also strong for Japanese classics, with a 1970 Honda CB750 realising a healthy £20,250 - not bad for a bike that 15 years ago cost as little as £5000.

If you still need convincing about looking at two wheels, *themotorcyclebroker.co.uk* has a fascinating and comprehensive overview of where the market has come from and where it's going. You could be surprised.





1957 BENTLEY R-TYPE SALOON. SOLD FOR £32,000, DVCA. This R-Type was originally owned by the second Baron Luke, whose grandfather, John Lawson Johnston, was the inventor of Bovril. Offered in excellent but largely unrestored condition, the car even retained its period wireless.



1961 FASTAKART. SOLD FOR £3,600, SILVERSTONE AUCTIONS. This 1961 FastaKart was produced by engineer Frank Williams whose son, Barrie 'Whizzo' Williams used FastaKarts as an entrée into racing and rallying full-sized cars. Offered in superb condition and with its correct Villiers gearbox engine.

1973 ALFA ROMEO GT1600 JUNIOR. SOLD FOR £22,000, BARONS.
This businesslike GT Junior was entirely unoriginal, having been painted an incorrect shade and fitted with a later 2-litre twin spark engine and matching five-speed gearbox – but its appeal was obvious as the basis for a fast road car that already benefited from upgraded suspension and road-legal semi-slick tyres. The huge file of invoices that came with it showed that a small fortune had been lavished – and not entirely recouped.



1957 MORGAN PLUS 4. SOLD FOR £22,780. H & H. This competition-orientated road-legal Morgan left the factory with a 'tuned engine' bound for California where it was campaigned over decades in SCCA events, autocross and hillclimbs. It has competed at the Goodwood Revival and was sold with a rich history file.



1988 FORD RS500. SOLD FOR £170,000, SILVERSTONE AUCTIONS.
Anyone who followed the 1988 BTCC will recognise this. Built by legendary racer Andy Rouse, this particular car was taken to four podium finishes in '88 by Guy Edwards. It was sold 'on the button', complete with a 540bhp engine.



1957 AUSTIN-HEALEY 100/6. SOLD FOR £52,250, DVCA. This had not only been beautifully restored but had also been sensibly and sympathetically upgraded in virtually every area. From its balanced and ported Slark Race Engineering engine to its custom-made tonneau cover, the car was meticulously presented.



Buying guide

Spice SE86-90C

Born almost by accident, but with serious Group C ambitions

SCROLL DOWN THE GRID OF ANY major sports car race on either side of the Atlantic in the late 1980s or early '90s, and you'll almost certainly find multiple chassis built by Spice Engineering. The star of the Silverstone-based constructor shone brightly for a period of a few short years in which it built more than 50 prototypes.

Buoyant sales reflected success on the race track. Spice-equipped teams won the Group C2 World Championship title three years on the trot between 1987 and '89, and again in 1992 when competitors in a revived secondary class competed for what was known as the FIA Cup. Over the Pond, there were five titles in the Camel Lights division of the IMSA GT Championship between 1989 and '92. Six class wins at the Le Mans 24 Hours can be added to that roll of honour.

The Spice CV makes for even more impressive reading when you consider that the company came about pretty much by mishap and coincidence.

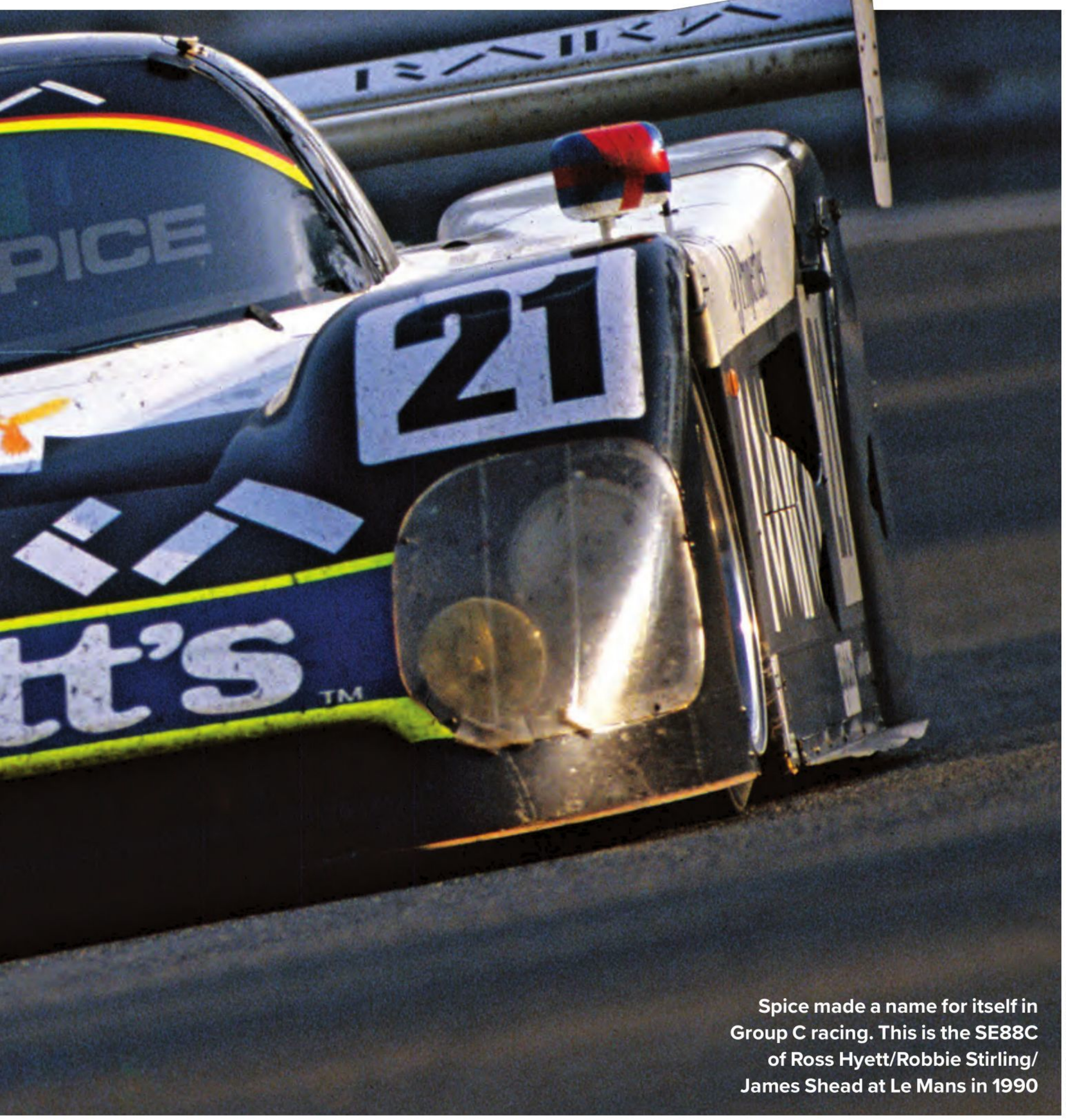
Tin-top and sports car legend Gordon Spice's operation had been left high and dry by Ford's decision to axe the Group C programme for which his team had built a third generation of the underachieving C100 for the 1983 season. He managed to scratch together a deal to stay afloat through '83 and into '84 when he was introduced to wealthy historic racer Ray Bellm, who happened to live next door to his brother.

Bellm had aspirations to race at Le Mans and after a handful of races together in a Spice-run Tiga, they formed Spice Engineering with the intent of becoming a constructor. Their aim was to produce a turn-key racer in the mould of the Porsche 956/962, aimed at C2 and Camel Lights.

The new company employed ex-Hesketh, March and Theodore designer Graham Humphrys to come up with a new car and, in the interim, update the Tiga in which Spice and Bellm claimed the World Endurance Championship C2 title in 1985. Design of the fledgling marque's own car was well underway when Spice got wind that

SPICE SE86-90C

- **Price new** N/A
- **Price now** £250,000-£300,000
- **Engine** Cosworth DFV 3.0-3.3-litre V8, Pontiac 3.0-litre four-cylinder, etc
- **Rivals** Argo JM19, Ecosse C286
- **Verdict** One of the great customer sportscars of its era enjoyed phenomenal success in the world and North American arenas



Spice made a name for itself in Group C racing. This is the SE88C of Ross Hyett/Robbie Stirling/ James Shead at Le Mans in 1990

MOTORSPORT IMAGES

Pontiac was planning some kind of sports car programme. An approach resulted in the first chassis carrying a body styled after General Motors' Fiero two-seater. The aerodynamics weren't great, but it gave the fledgling constructor a kick start.

The quirky Spice SE86C, known in its Pontiac-powered form as the Fiero GTP in the US, was an immediate success. Spice and Bellm reprised their C2 title in what was now known as the World Sports-Prototype Championship with Cosworth DFV motivation.

That success paved the way for the first customer cars. Hugh Chamberlain bought one - it had an F1-derived Hart turbo - and a trio of customer Fieros were built for the US. By 1989 production was into double figures and company turnover in excess of £6 million, or £15 million in today's money.

Spice made its own body for 1988 and Humphrys' design evolved around the aluminium honeycomb monocoque. The track and wheelbase increased, along with rear suspension revisions as the world series moved into the 3.5-litre era. The end of Group C2 took away Spice's market, and coincided with a global recession.

"The aim was to make a turn-key racer in the mould of the Porsche 962"

The company went into administration in late 1990 and limped on for a couple of years first under Japanese and then Anglo-French ownership. Spice Engineering's legacy lived on, however. Its cars, now sans roofs, bulked out the early grids of IMSA's World Sports Car category in 1994.

Market view

Quite available, and still widely raced in Grp C

Historic Group C racing allows drivers to compete at some of the best circuits in the world, at similar levels of performance as F1 cars of the same era.

In 2012 SE90C chassis 08 went to auction with an estimate of €170,000 - €180,000 but achieved a high bid of only €140,000. Since then only classified adverts are able to provide indicators of the market.

There are currently a number for sale; in December 2018 chassis 16 was listed for sale at €425,000 (£390,000), chassis 11 is for sale at $325,000 (£270,000) and chassis 17 was recently listed for sale at £300,000.

The SE90C came with a choice of two variants of the DFV engine – the DFR or the DFL. Although Spice estimated the running cost of the DFR to be three or four times more, due to the extra vibrations it caused. One would hope that 30 years later these issues have been ironed out, but a full engine rebuild is still estimated at £15,000 and is needed every two years.

Market preference is for cars that have benefited from recent race preparation, rather than those which have been laid up. Chassis 17 is up for sale at the Bonhams Goodwood Revival event in September with a guide of £200,000 - £260,000.

Robert Johnson,
Classic and Sports Finance

CLASSIC & SPORTS
FINANCE



ONE CURRENTLY FOR SALE

1990 Spice SE90C

On the forecourt

Spared from extensive racing activity during its first life, this immaculate Spice is ready to return to the circuits

This SE90C, an example of the final and ultimate Spice Group C car built after the switch to 3.5-litre regulations, was fielded by the Dutch Euro Racing squad in the renamed Sportscar World Championship in 1991. The car, for sale with the Ascott Collection, was one of three chassis that it pitted with works support against the might of Jaguar, Peugeot and Mercedes.

The little-used car, chassis 22, raced just three times in period from the start of the season up to and including the Le Mans 24 Hours. Cor Euser and team owner Charles Zwolsman, who had previously raced under the pseudonym 'Charles Hausmann', came home fourth at the Suzuka series opener after losing out on a podium finish on the final lap, before Euser and Richard Piper took fifth place at Silverstone as the first non-factory car home.

Tim Harvey, who'd raced irregularly for the works team in 1989 and '90, joined Euser and Zwolsman for Le Mans. The car was 15th in the times after qualifying, but by a quirk in the regulations it would start from the second row behind two Peugeot 905s. The rules demanded that cars conforming to the 3.5-litre regulations start at the head of the field. Chassis 22 succumbed to engine failure in the sixth hour and wasn't used again that season.

The car, according to Ascott, is "well preserved" and has been raced only sparingly. It would need a recommissioning, including an engine and gearbox rebuild. Price on application.

Ascott Collection, Vaucresson, France
Tel: +33 6 17494250, *ascottcollection.com*



ONE PREVIOUSLY RESTORED

1989 Spice SE89C

In the workshop

This former Chamberlain Engineering car returned to meet its maker for a full racing refresh at Damax

The Chamberlain Engineering squad, one of Spice's most successful customers, claimed the World Sports-Prototype Championship C2 title with Fermín Vélez and Nick Adams with SE89C chassis 06. It remained part of the British team's fleet into the 1990s and competed at Le Mans on a further two occasions. Twenty years on, it was rebuilt by a former Spice Engineering employee.

Duncan McKay bought the car from Chamberlain after its contemporary career finished, and raced it at the end of the 2000s. He then took it to historic preparation specialist Damax run by Robin Ward, chief mechanic at Spice in the late 1980s, who restored it to 1989-spec for Group C/GTP Racing.

"The tub was fine, but the car did need a major recommissioning, which meant new bearings, driveshafts, wishbones and gearbox internals as a matter of course," says Ward, who estimates that Damax has so far rebuilt 10 or so Spices. "We always put new wishbones on because they are tubular section steel and tend to rust from the inside — we've made jigs to be able to fabricate all the suspension parts."

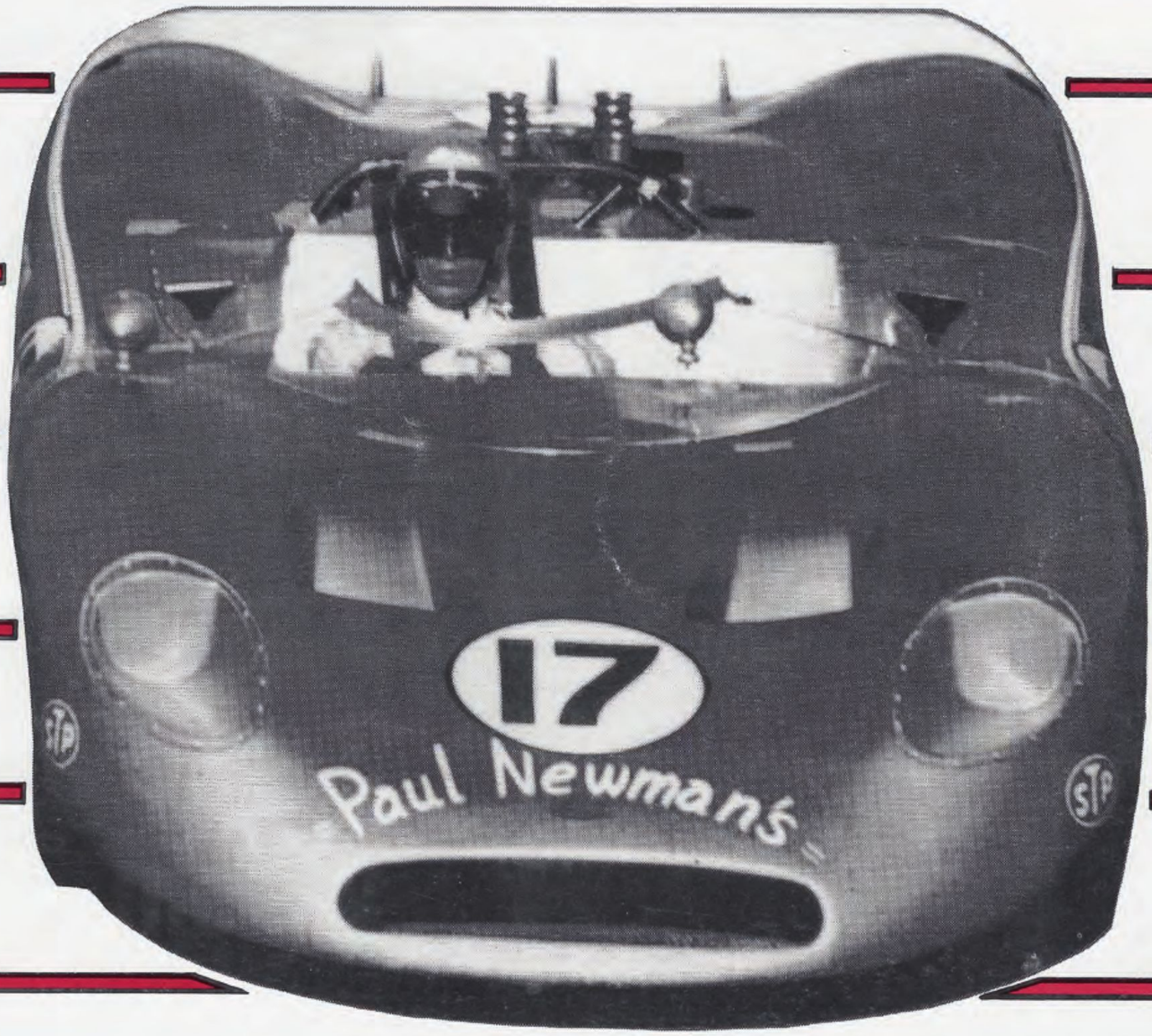
Ward, who shared the SE89C with McKay over two successful seasons in 2010-11, describes the Spice as a "user-friendly racing car".

"They are pretty straightforward to run, as well as being easy to drive," he says. "They are competitive, too. They only really get beaten by the more powerful turbocharged cars."

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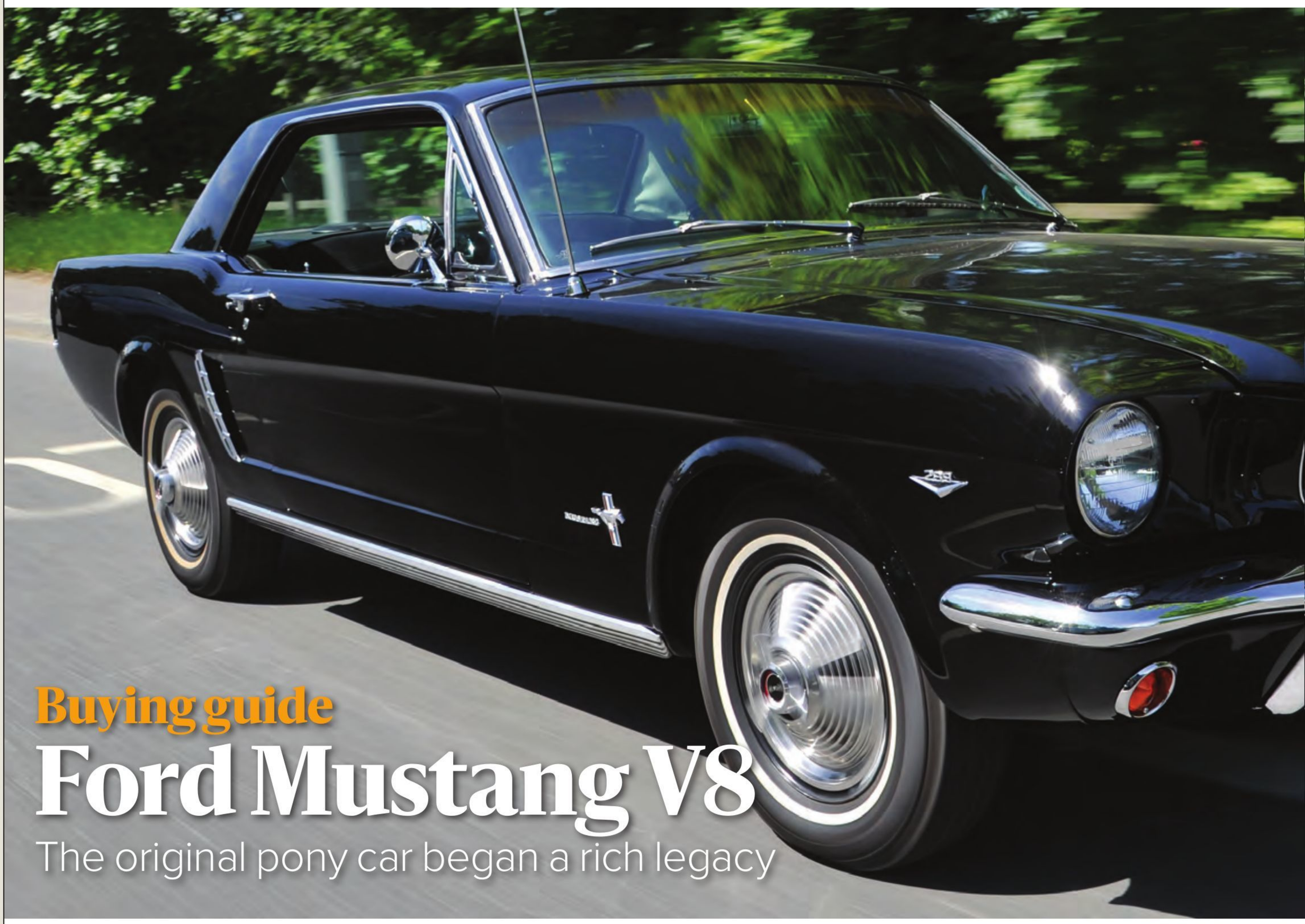
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Buying guide

Ford Mustang V8

The original pony car began a rich legacy

THE FORD MUSTANG WAS WELL on the way to icon status even before Wilson Pickett sang about one, Steve McQueen was chased in one and Carroll Shelby started to tinker with one. The place of the original 'pony car' in American culture was merely cemented by Motown, Hollywood and the success of hot versions on the race track.

The first incarnation of a model that continues in production to this day was a runaway sales success from the get-go. Orders were taken for 22,000 cars in the first day alone after its launch in April 1964 at the New York World Fair the day after Ford paid for simultaneous infomercial broadcasts across TV networks the previous evening.

More than 400,000 had been sold after 12 months, a figure that required Ford to open two additional production facilities to meet demand. It took 18 months for the one million figure to be surpassed.

Ford grandee Lee Iacocca, the father of the Mustang, correctly summised – he famously called it a "hunch" – that the public had an appetite for a cheap and, in American terms, small two-door sports car (the first-generation Mustang was deemed to be in the compact class). His masterstroke was pitch the car with cut-to-the-bone sticker price and a bulging catalogue of extras.

Bucket seats were standard, but not a lot else. Every engine option up from the standard 101bhp in-line six was listed as an extra. Yet nearly three quarters of the cars were sold with V8s of either 260 or 289 cubic inch displacement, that's 4.3 or 4.7 litres to us. Three versions of the bigger-capacity eight were available with up to 271bhp.

Buyers averaged around $1000 of upgrades on a car with a base price of just $2368. Four out of five ordered the radio, though how many rolled off the production line with the 70-buck clock and rev-counter package isn't known.

The Mustang had been conceived in the aftermath of the disaster that was the creation of the Edsel sub-brand in 1958. The company was reputed to have lost $250 million in the short-lived venture that has

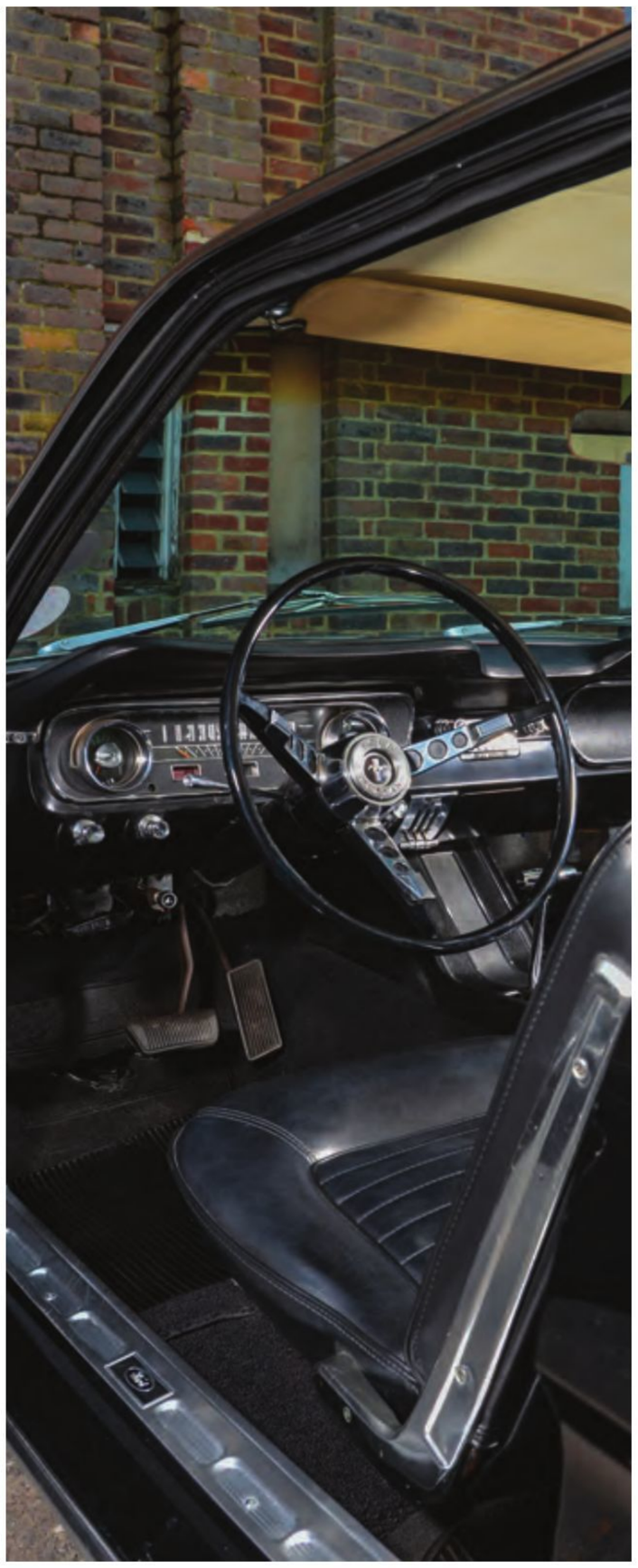
FORD MUSTANG V8 COUPE

- **Price new** $2927 (£1045)
- **Price now** £18,000-80,000
- **Engine** 4.7-litre normally aspirated V8
- **Power** 271bhp ● **0-60mph** 8.2sec
- **Top speed** 116mph ● **Rivals** Plymouth Barracuda, Dodge Charger
- **Verdict** The iconic status of the Ford Mustang is founded on the original V8



Ford's idea of a hatchback in 1960s America, the Mustang was developed as a compact sports car

ALAMY



become a byword for corporate failure, which is why Iacocca had just a fifth of that to develop his new sports car.

That explained why the Mustang was built on the underpinnings of the Falcon and Fairline. The mechanicals were all pre-existing, but the body, the work of Ford's Lincoln-Mercury design studio, was all new. The long bonnet was devised to hint at the power that lay beneath – at least if the buyer specified a V8.

The first Mustangs are known as 1964½ cars, though they were given 1965 VIN numbers. The evolution of Ford's eternal sports car started almost immediately. A fastback was introduced during the '65 model year and there were changes in the line-up of engines.

"Buyers averaged $1000 of extras, on a car costing $2368"

Shelby got his hands on the fastback that year and created the GT350 and the R version aimed at the Sports Car Club of America's B-production class. And musicians started singing about them: *Mustang Sally* made famous by Pickett in '66 was first released the year before.

McQueen drove a Shelby Mustang in the 1968 movie *Bullitt*. In the 1974 film *Gone in 60 Seconds*, a customised 1971 sportsroof - named Eleanor - became the only Mustang ever to receive a star credit. Fast forward 26 years and Nicolas Cage was coveting a 1967 fastback Shelby GT500 in the 2000 remake of the movie.

The Mustang's place in the minds of the American motoring public had been secured long before then.

Market view

Classic Americana for some sensible money

There's arguably no other car that is so symbolic of American culture. Whilst we can buy a new right-hand-drive Mustang in the UK, there has always been a demand for the classic models.

Two 1966 Mustang 289 hardtops sold in 2017, one for £15,400 and the other for £16,875. These are the most recent completed sales for going examples. A car stored for 30 years and requiring restoration sold in late 2018 for £6,000.

Two 1966 289 convertibles sold in November 2018, one for £19,504 (est. £18k-£20k) and the other for £22,500 (est. £25k-£30k) which would support mid-to-high teens valuations. The exception to this is the Fastback model which consistently sells above the £25,000 mark.

Some have less luck, such as one 1966 302 hardtop that's been to auction four times since 2018 and is yet to sell, despite dropping the asking price from £22k-£26k to £18k-£20k most recently.

Prices have not fluctuated much, and with the current US$ exchange rate it is unlikely that there will be much new stock added to the market. If entering the market for a 1966 289 hardtop, a price range of £17,500 - £22,500 would seem to be prudent with figures above this only applicable for the Fastback.

Robert Johnson,
Classic and Sports Finance

CLASSIC & SPORTS FINANCE



ONE CURRENTLY FOR SALE

1966 Ford Mustang V8

On the forecourt

If you want to stand out from the crowd with some American muscle, consider this Californian import

A 1966 289cu V8 auto hardtop that has spent the majority of its life in sunny California is for sale at the Classic and Sportscar Centre in Yorkshire. What makes it unusual is that this 66,000-mile car has largely been untouched by the hand of the restorer in its 53-year life.

"Rarely do you come across cars that have been so untouched," says Andrew Welham from the vendor. "It has never been what I would call a bad car, which is what makes it different to so many Mustangs that we see. There has, of course, been maintenance and it has clearly had a respray, but it hasn't undergone anything approaching a full restoration. There are no signs of any corrosion and the underside is outstanding as you might expect of a Californian car."

It also comes with a significant history file, which Welham says is unusual for imported Mustangs of this age.

"There's an original instruction manual – what we'd call a service book – with service stamps from its early life," he says. "It was purchased new by a World War II naval veteran in April '66 and there's documentation to show that it stayed in California up until its importation to the UK in 2002.

"That's the appeal of this Mustang. It's a highly original and genuine car."

The Mustang, whose most recent owner had the car for 15 years as part of an extensive collection, is priced at £23,995 and will come with a full year's MOT.

Classic and Sportscar Centre, West Knapton, Yorkshire
Tel: 01944542970, *classicandsportscar.ltd.uk*



ONE PREVIOUSLY RESTORED

1965 Ford Mustang V8

In the workshop

Even a car that "looked like it had lived in a river" deserves a second chance, says Classic American Restoration Services

When Phil King, founder of first-generation Mustang specialist Classic American Restoration Services, was offered a basketcase of car from the US for $1500 he didn't dare offer it to a customer. But he decided to take on the project with his son, Oliver, to verse him in the ways of rebuilding one of the American V8s.

"I was looking for a car, a convertible, to restore for a client and a contact came up with this one, a 1965 car," recalls King. "I told him it was so bad that it wasn't right to offer to the client. You wouldn't believe the state it was in underneath.

"It hadn't been on the road since the 1970s or '80s and looked like it had spent part of its life in a river. I did wonder at times what we'd got ourselves into, but it as a nice car for Oliver to cut his teeth on. We kind of went on a journey together – it presented a great learning curve for him."

The Mustang, originally a four-speed 289cu manual in champagne beige, was imported in 2012. The restoration took more than two years to complete and today the car is resplendent in candy apple red with a five-litre fuel-injected V8 engine under that long hood.

There's a four-speed automatic transmission with overdrive and disc brakes all round. Discs were only available on the option list back in the day.

Oliver still owns the car and now helps run the Essex-based business with his father.

Classic American Restoration Services, Waltham Abbey, Essex
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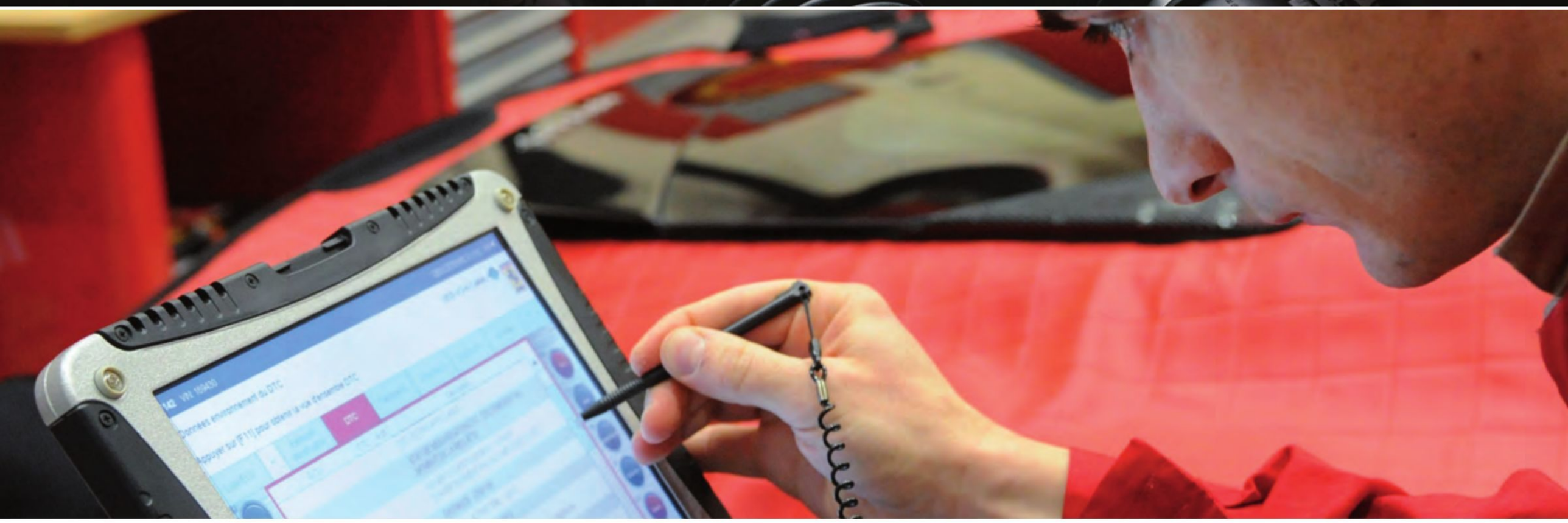
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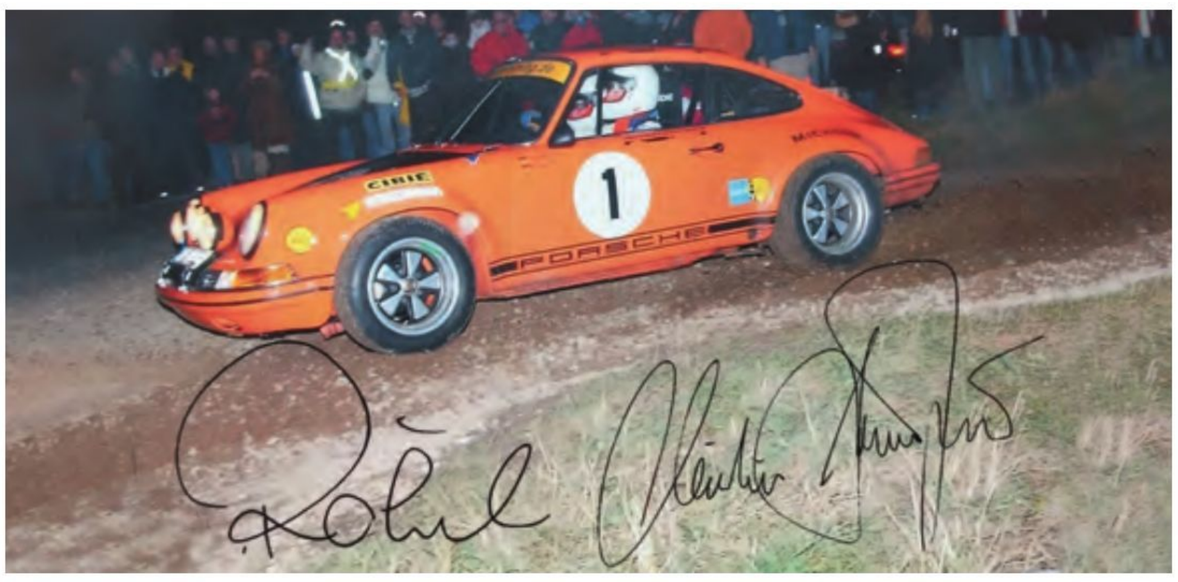


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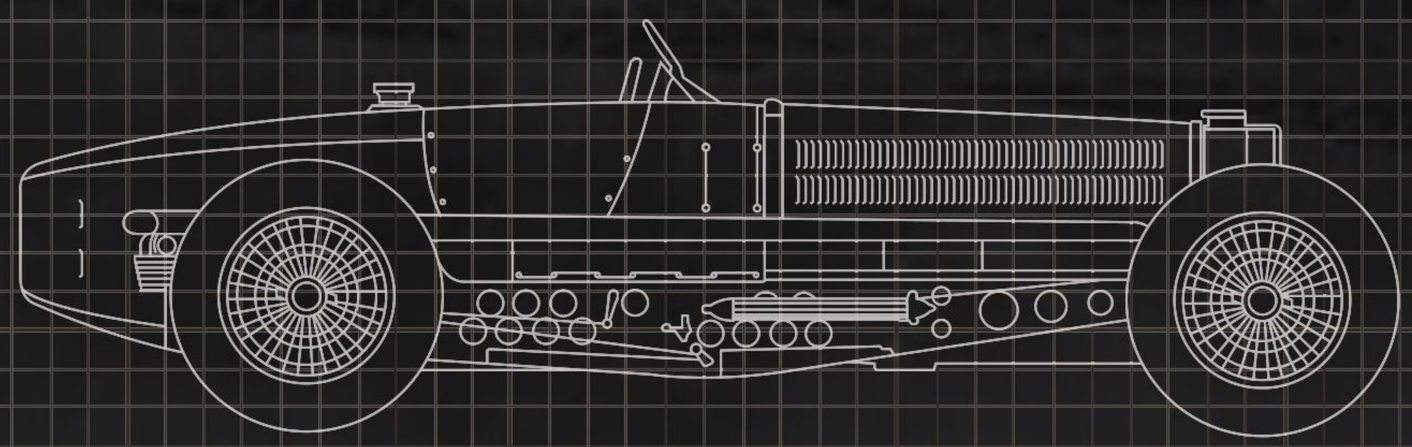
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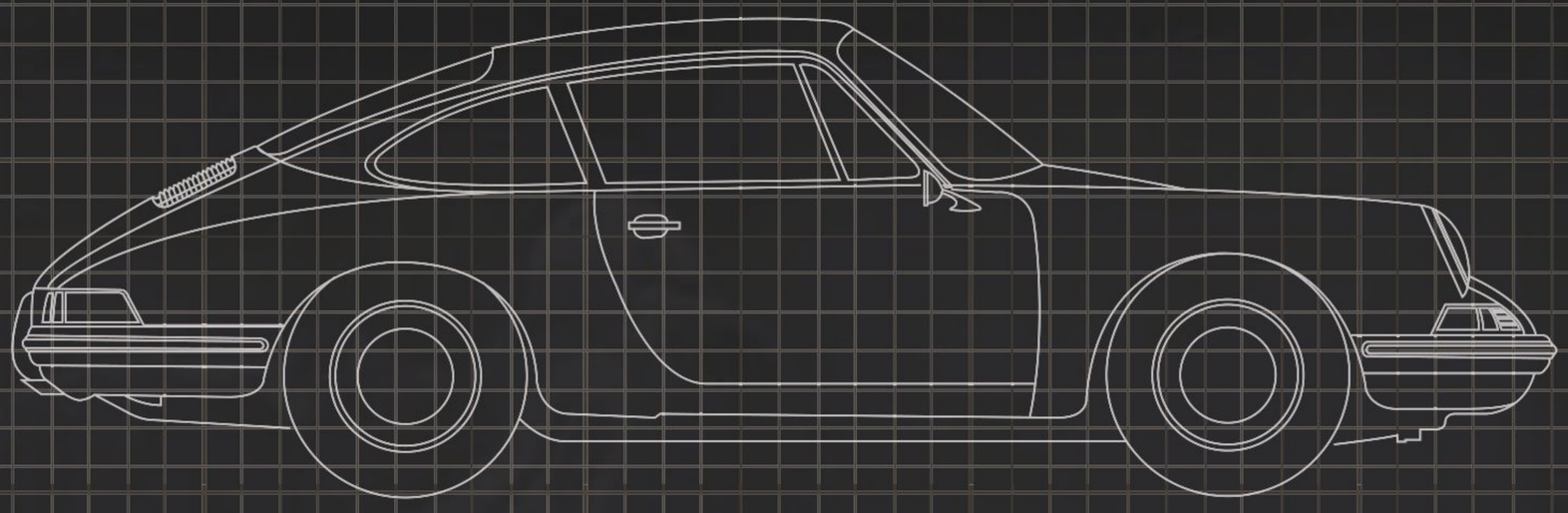
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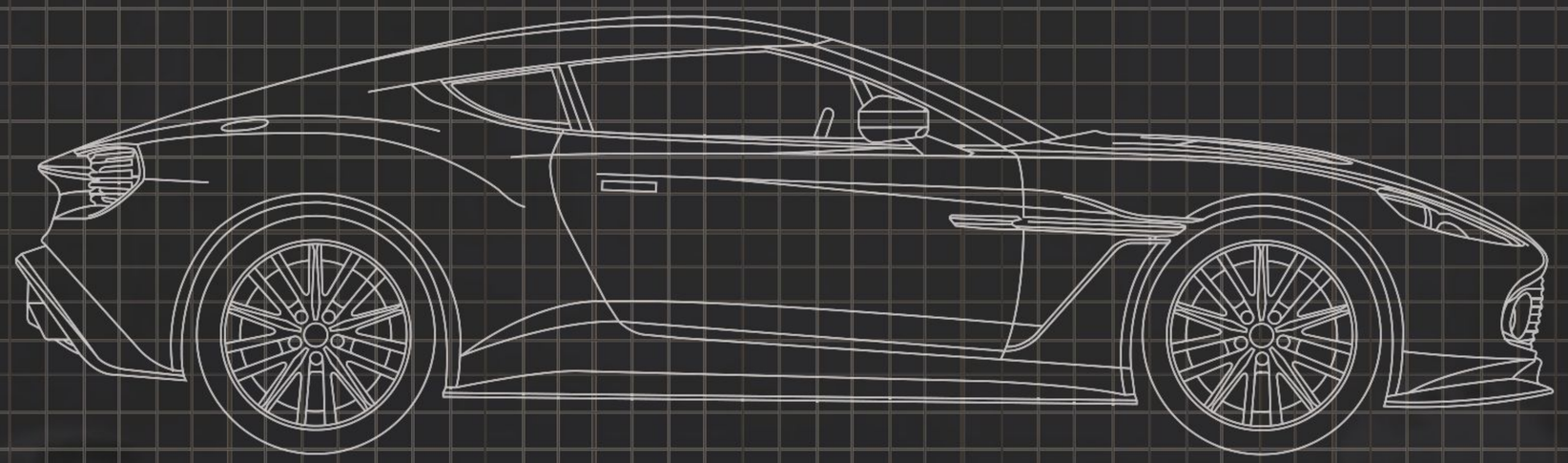
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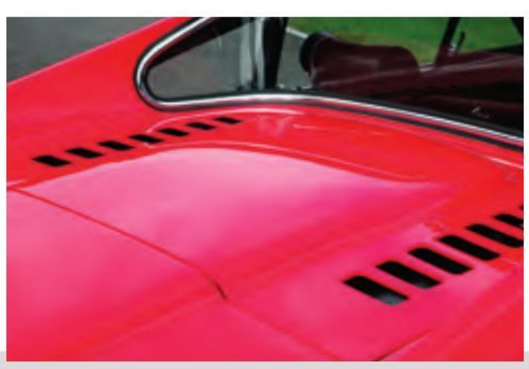
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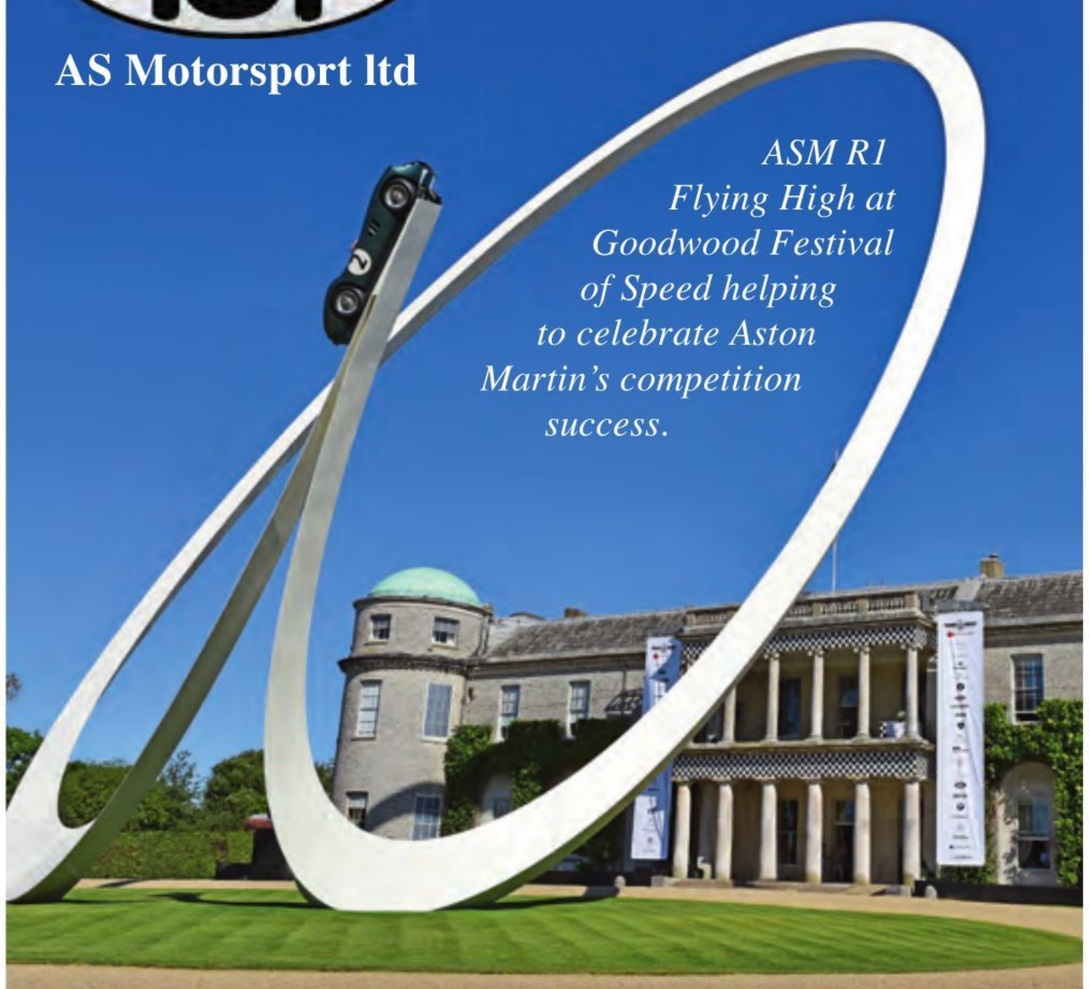
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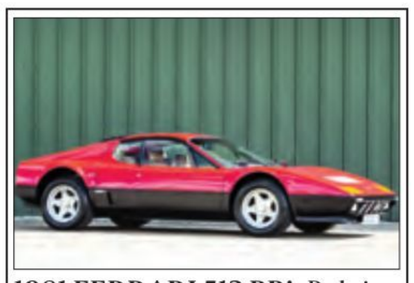


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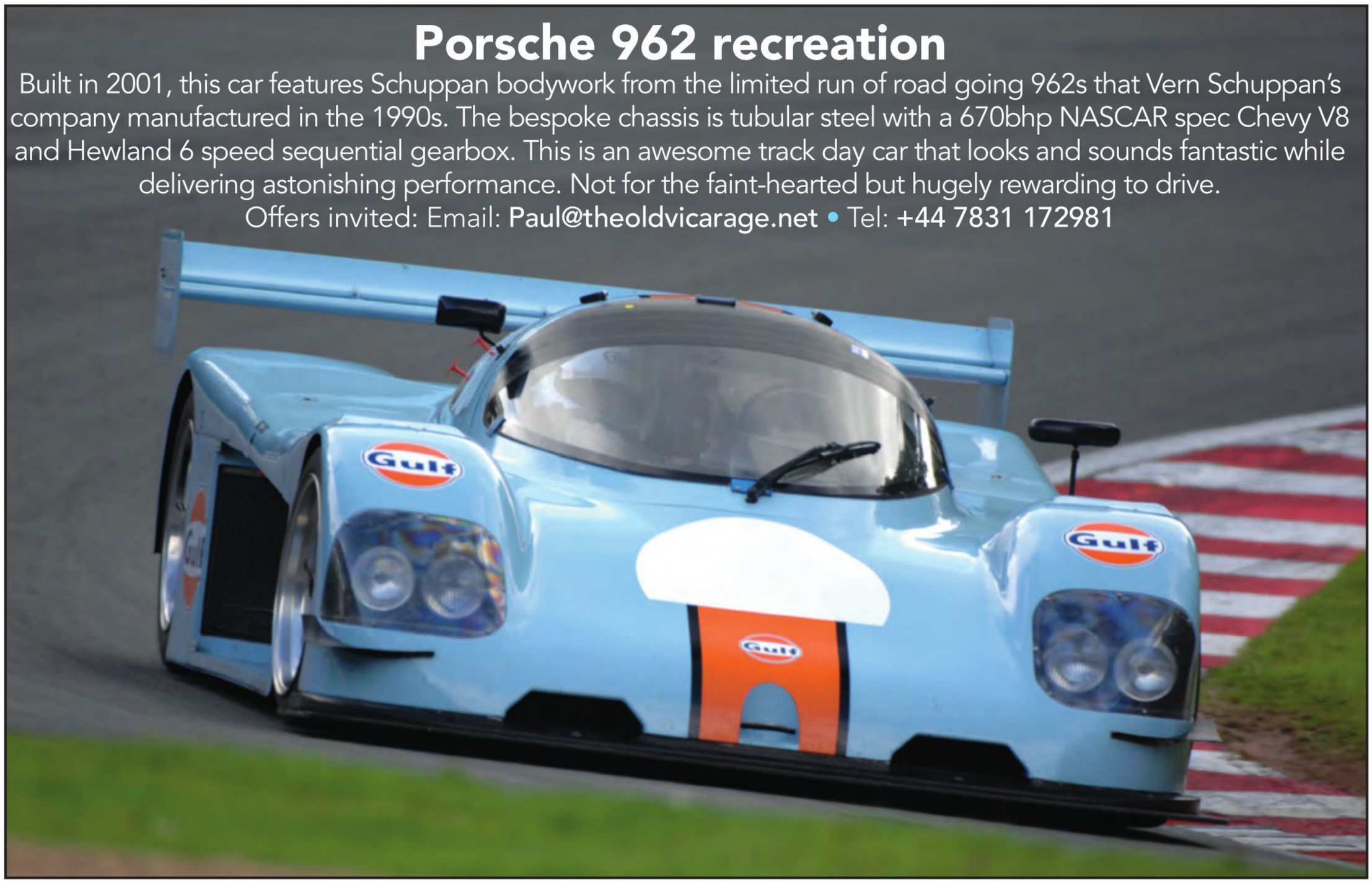
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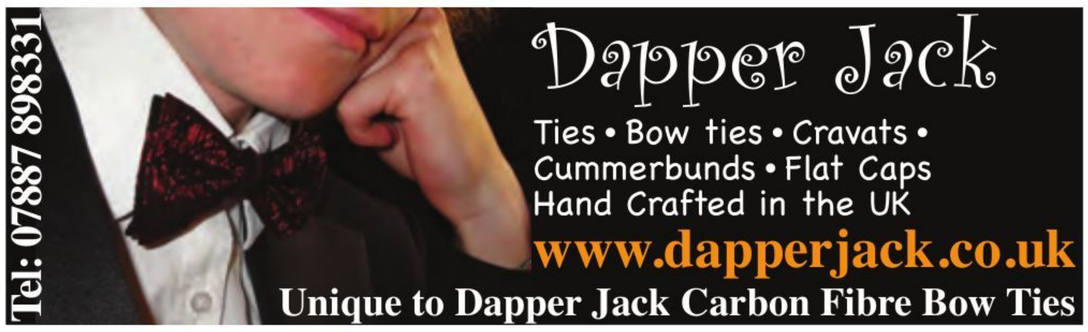
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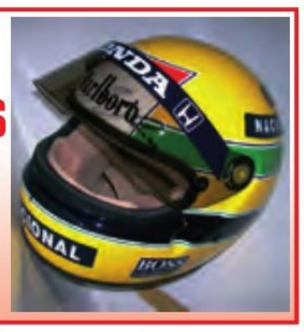
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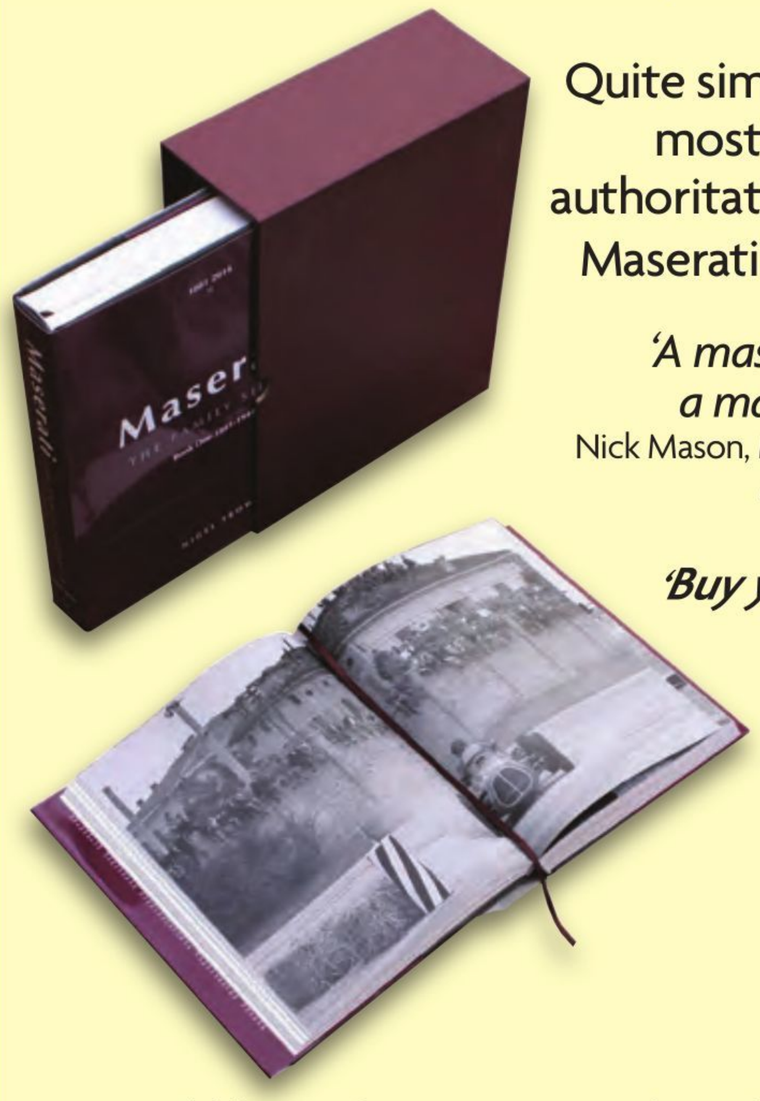
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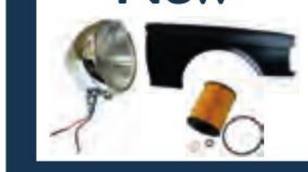
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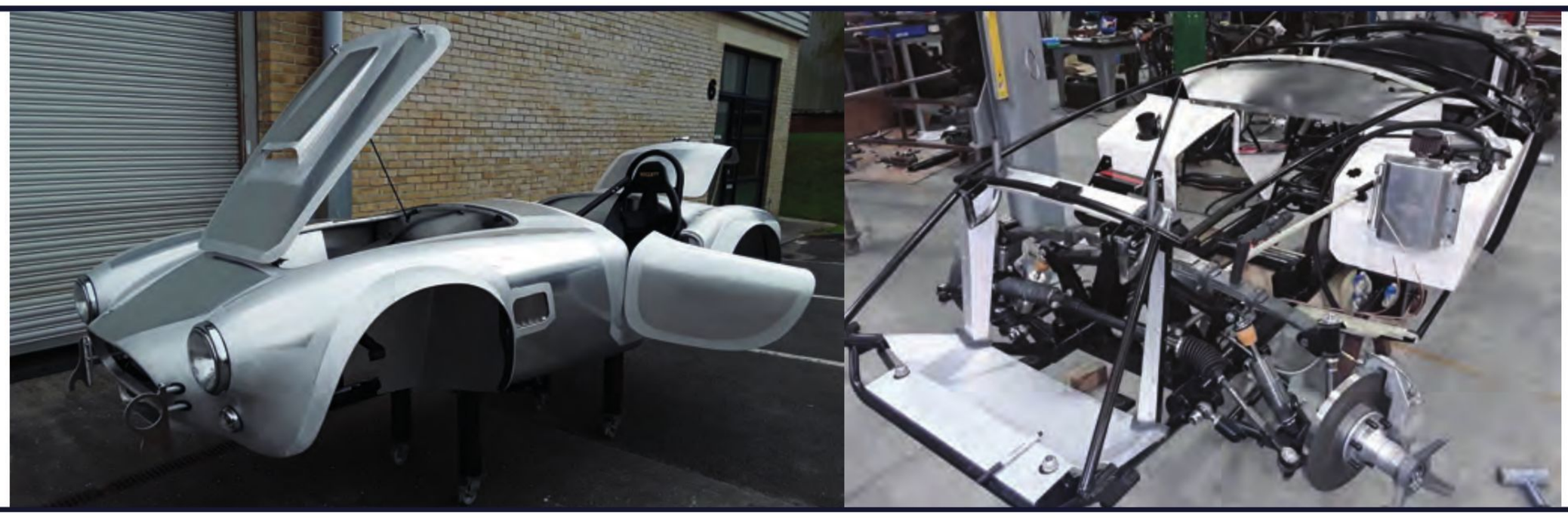
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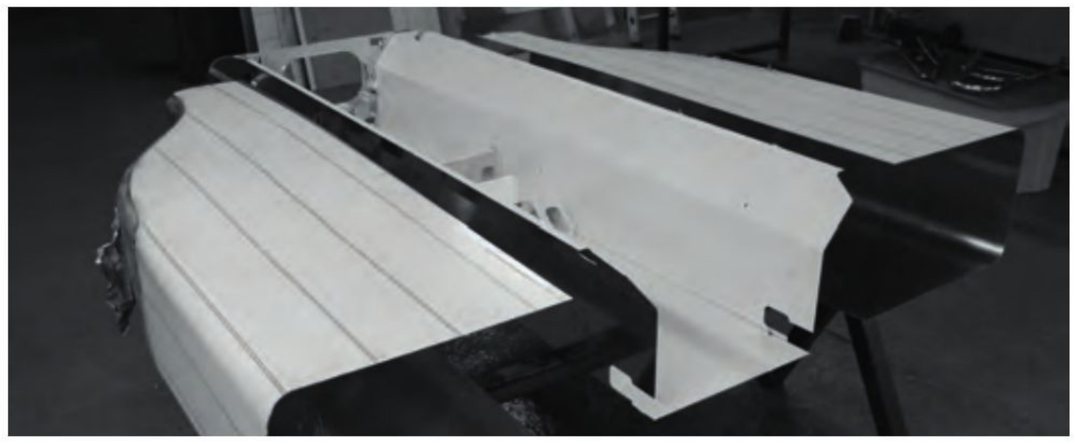
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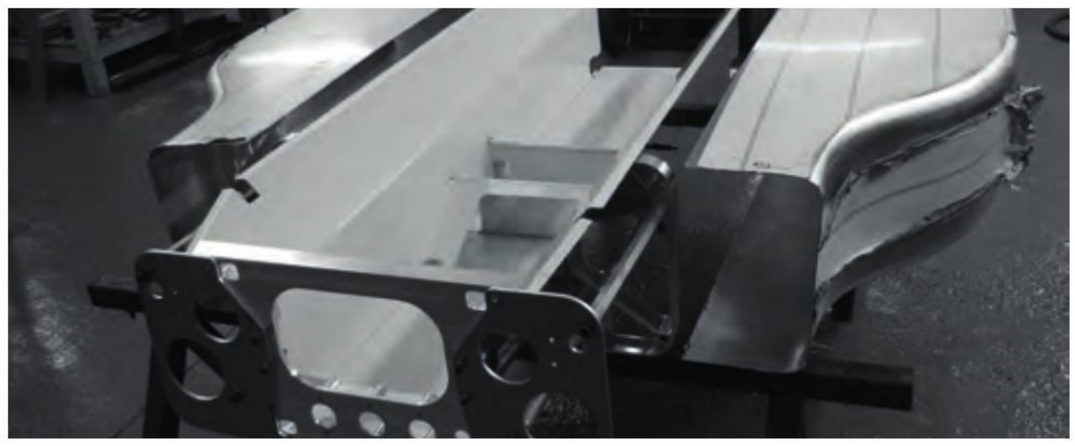


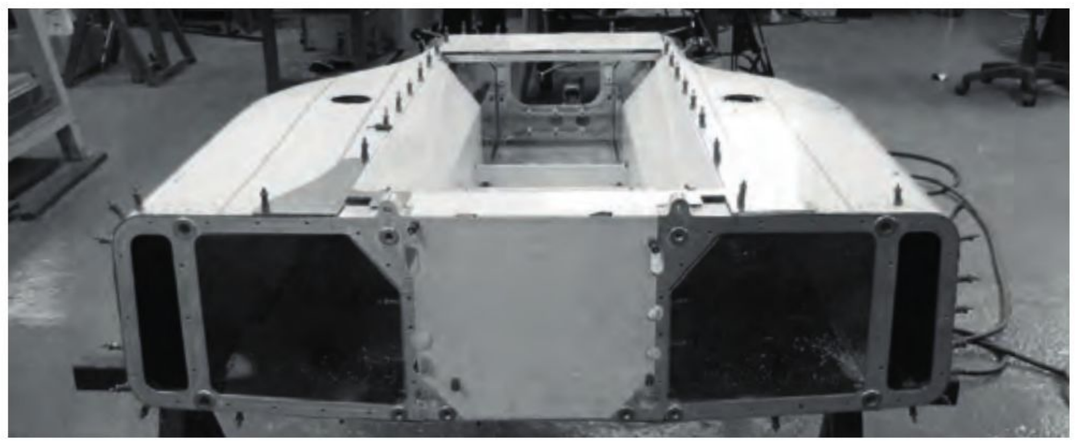
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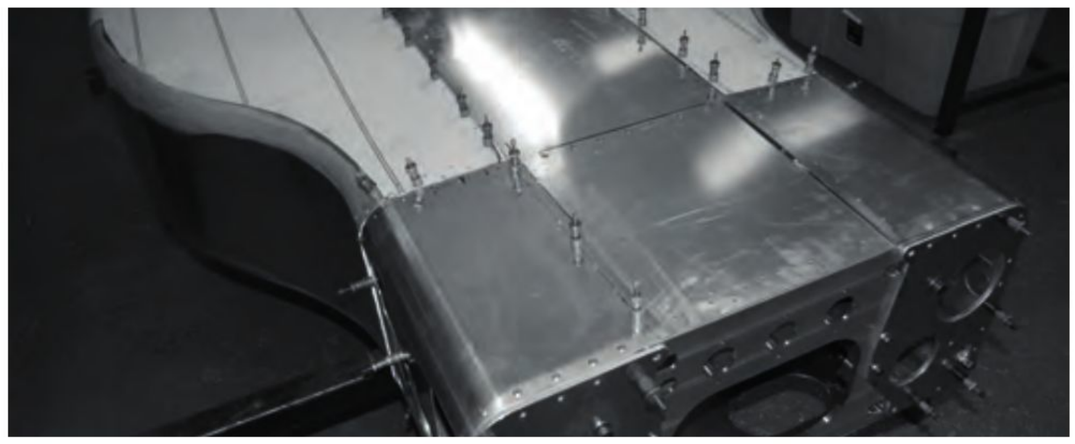
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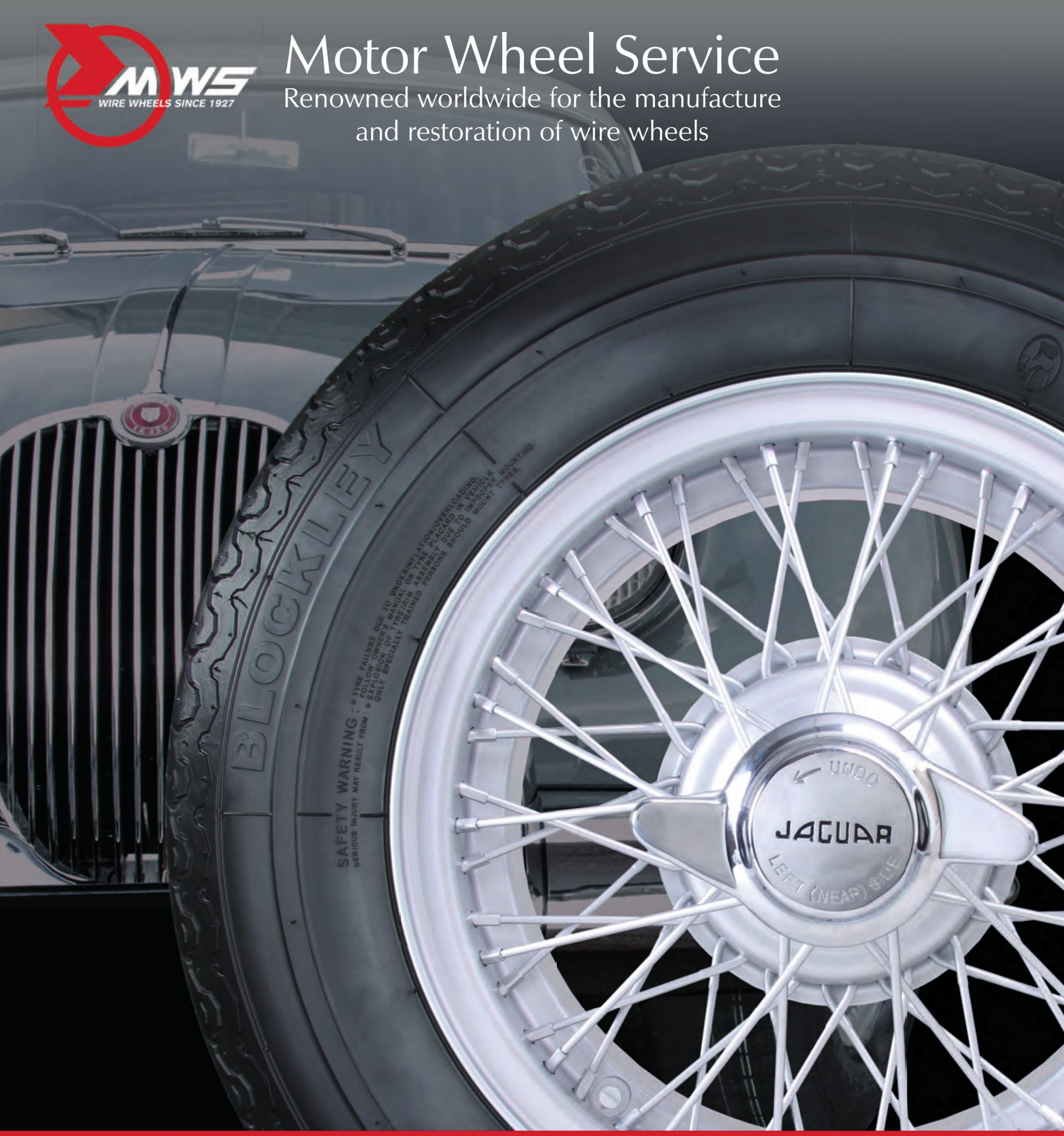
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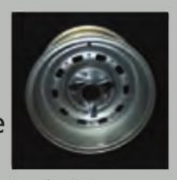
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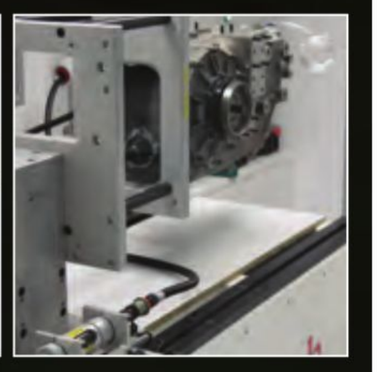
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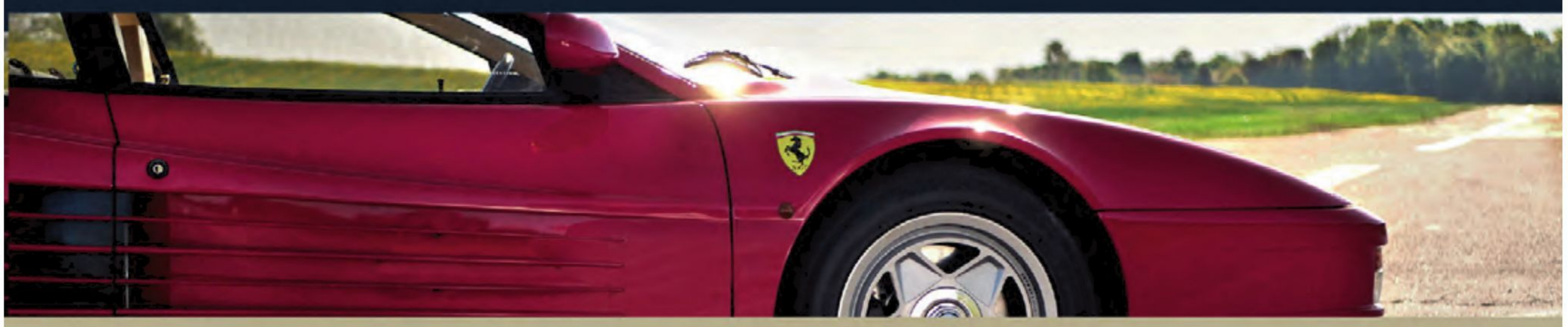
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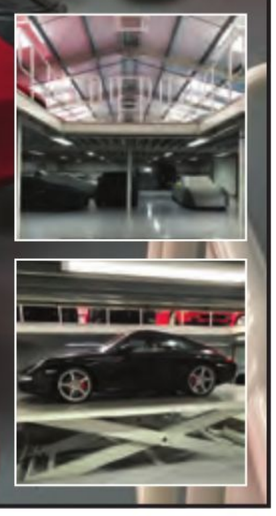
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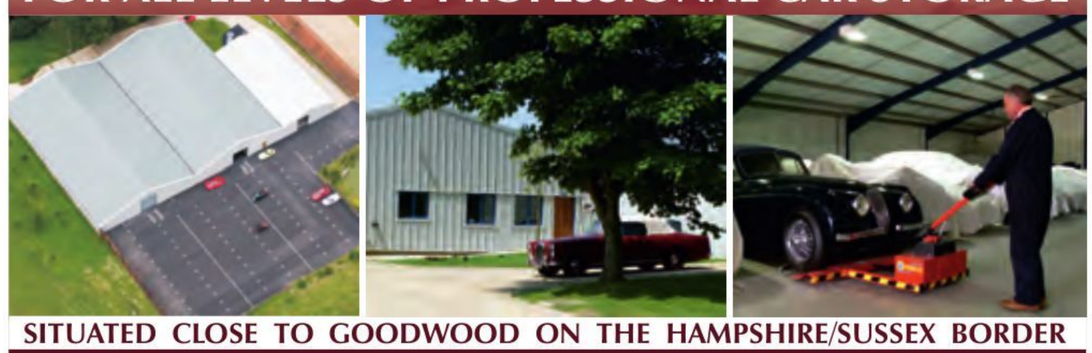
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YOU WERE THERE



BRM brought three P261s to the British Grand Prix – race chassis for Graham Hill (who finished second) and Jackie Stewart (fifth), plus the usual spare



Graham Hill appears to be adjusting the steering column reach in John Coombs' Lotus 35-BRM, which he took to fourth place in the British Eagle Trophy F2 race at Brands Hatch on August 30. Jim Clark won in a Ron Harris-Team Lotus 35-Cosworth



Hill also raced this Coombs McLaren Elva-Oldsmobile on the same day at Brands, in the Guards Trophy, but suffered engine problems

Honda personnel prepare Richie Ginther's RA272 for the British GP at Silverstone. The American qualified third but retired when his V12 lost power

Coming back to his roots

Submitted by Michigan-based reader Mark Davison, these images were taken in 1965 by his father Charles – a UK-born US citizen – during a return trip to his original homeland



The Silverstone pits in more basic times: factory Cooper mechanics fettle the Climax-engined T77s of Bruce McLaren and Jochen Rindt



Lotus 33s at rest, Mike Spence's car to the left. Team-mate Jim Clark took his fourth British GP victory

SEND US YOUR IMAGES

If you have any photographs that might be suitable for *You Were There*, please send them to: Motor Sport, 18-20 Rosemont Road, London, NW3 6NE or e-mail them to: editorial@motorsportmagazine.co.uk


FOS
2



NOVEMBER 7, 1993
ADELAIDE, AUSTRALIA

In his last start for McLaren, Ayrton Senna leads away from his 62nd Formula 1 pole position en route to his 41st – and final – grand prix victory. Just behind are the Williams FW15C-Renaults of Alain Prost (left, in front of Michael Schumacher's Benetton) and Damon Hill, who finished second and third. Jean Alesi and Gerhard Berger took fourth and fifth for Ferrari, ahead of Martin Brundle's Ligier.

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CAR OF THE MONTH – **1954 Aston Martin DB2/4**





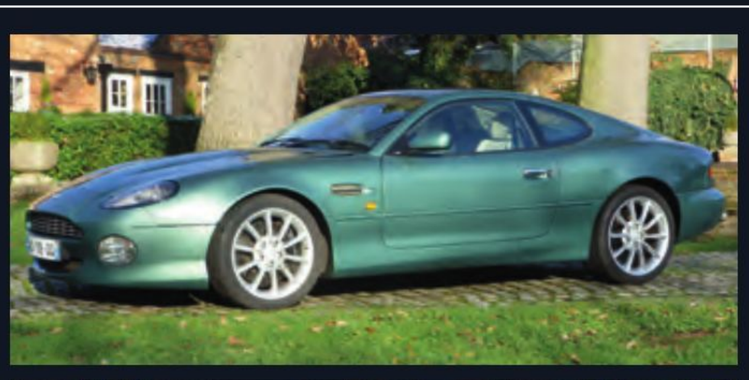
1954 Aston Martin DB2/4 finished in Midnight Blue with contrasting grey hide interior. This lovely motor car has been owned for the last 20 years by a gentleman now in his eighties. Currently with our trimmers having a new headlining and new Wilton carpet throughout and the leather interior completely refreshed. It has been regularly maintained and improved by Four Ashes Garage with what would appear to be little regard to cost. Works have included a new Vetus Cylinder block retaining the original engine number in 2008, Chassis repairs, new wiring loom and Andron front hubs in 2010, Front and rear suspension overhaul in 2014 and a rebuilt gearbox in 2015. The methodically kept car file contains invoices totalling over £50,000 since 2003 and on driving the car, it is very evident that the car has been well maintained. Now is the time to purchase one of these Feltham Astons for a taste of the Golden Age of Motoring as we believe that their current value is bound to increase after Brexit. **£139,950**





1970 Jaguar E type series II 4.2 FHC finished in gunmetal with contrasting Burgundy hide interior. This beautiful example was restored by us in 2017 and has been little used since with the exception of one successful trip to Le Mans in 2018 where it performed faultlessly. Great care and attention was exercised during the restoration and available with the car is a detailed photographic record of the work carried out. Briefly this included a back to metal repaint, a full engine and suspension rebuild, a new higher ratio crown-wheel and pinion and new brakes all round. **Offered for sale at less than the total refurbishment cost at £94,950**













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