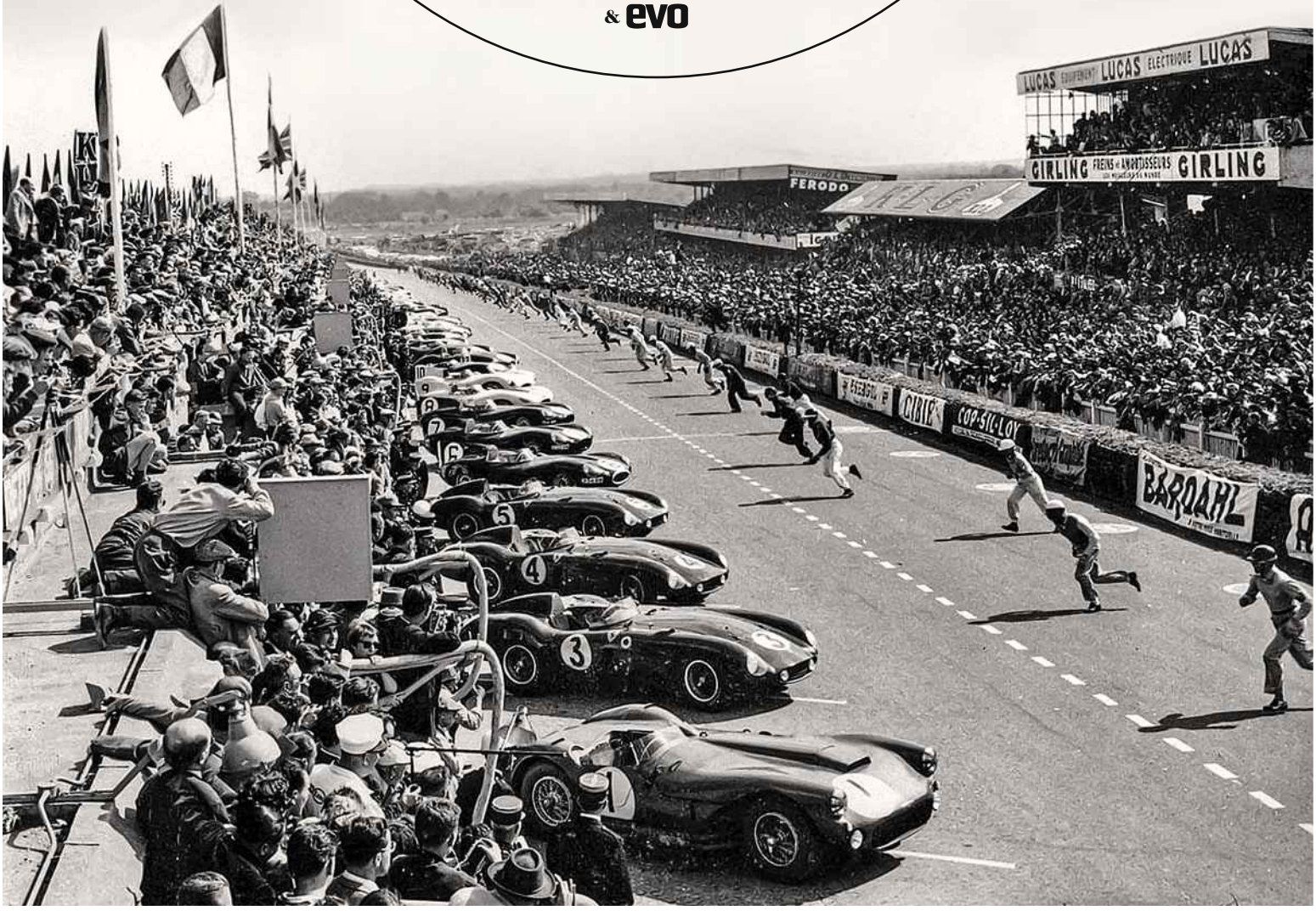
100 YEARS OF LE MANS

A CELEBRATION OF THE WORLD'S GREATEST RACE

1923-2023

FROM THE PUBLISHER OF

Octane & evo



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"Classic Insurance Services have taken care of my insurance needs for over 10 years and I've been very impressed with how responsive and detailed they are. Rod Mitchell has passed his market-leading knowledge onto his team and that is evident when conversing with them."

Tom Hartley Junior

What you won't find at CIS is a call centre. "Each client has a dedicated client manager – someone who knows you and your collection. You can contact your client manager on their direct mobile number or email address, even in the evenings and over weekends," says Rod.

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"CIS were recommended to me in 2013 and I've been with them ever since, which speaks volumes. Because of the service level I experience, I don't even consider shopping around. The flexibility around the way the policies work really, really suits collectors."

Andrew Bailey, Private Collector

When CIS first opened its doors, there was a bit of a 'private club' atmosphere. But thanks largely to word of mouth, the business now boasts about 1,000 specialist motor trade clients, over 1,000 substantial collectors, and valuations worth over £100 million. "Although the atmosphere might have changed, our focus on service excellence never will", Rod concludes.

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A CELEBRATION OF ASTON MARTIN’S FIRST WIN AT LE MANS IN 1959

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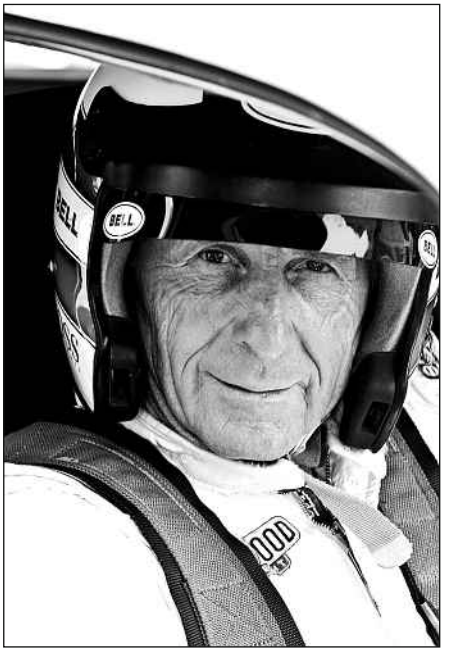


LE MANS: A RACE LIKE NO OTHER

In many ways, the 24 Hours of Le Mans came to define my career. The great irony is that, prior to my maiden start in 1970, I actually had no desire to do the race. My heart was originally set on becoming a superstar in single-seaters, and I made my Grand Prix debut with Ferrari in 1968 – but by mid-1969 the team was in disarray and I was let go. As such, I wasn't all that happy to return to the Scuderia for the 24 Hours a year later.

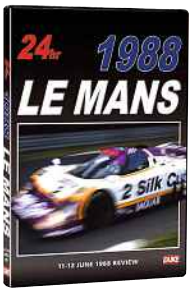
I was paired with another Le Mans rookie, Ronnie Peterson. We were pretty green about endurance racing, and neither of us was given any guidance. Perhaps unsurprisingly, we didn't finish… I was disappointed because I'm a competitive person, but I didn't think much about it afterwards. And I certainly never imagined that it would be the first of 26 starts, nor that I would soon fall in love with the race.

For 1971 I was armed with a Porsche 917L. Guiding it along the Mulsanne Straight at 246mph was an unbelievable experience, and bit by bit I realised I knew where I wanted to be in June. My first victory came in 1975, when I shared a Mirage GR8 with my dear friend Jacky Ickx. We found ourselves back on the top step of the podium in 1981 and 1982, by which time I was signed on as a full-time Porsche works driver and the Group C era had dawned. I won again in 1986 alongside my mate Hans-Joachim Stuck, and in 1987 with the much-missed Al Holbert.

Obviously, there were other occasions when I think I perhaps should have won – but on balance I think I did alright. And I remember my third-place finish in 1995 as fondly as any of my wins, because that year I shared a car, the Harrods McLaren F1, with Andy Wallace and my son, Justin.

I have great memories, too, of working on *Le Mans* with Steve McQueen. The fact that the biggest movie star in the world chose to make a film about the 24 Hours speaks volumes about the pull of a race that remains, 100 years after its first running, one of the greatest sporting events in the world.

Derek Bell, *Octane* columnist and five-time Le Mans winner



FREE *LE MANS 1988* DVD

We've teamed up with Duke Video to offer readers of *100 Years of Le Mans* a free copy of *Le Mans 1988*, a look back at the thrilling race won by the Jaguar XJR-9LM of (from left to right) Johnny Dumfries, Jan Lammers and Andy Wallace. Turn to page 175 to find out how to claim. Postage and packing costs £2.99, and the offer is open to UK residents only.

ALAMY

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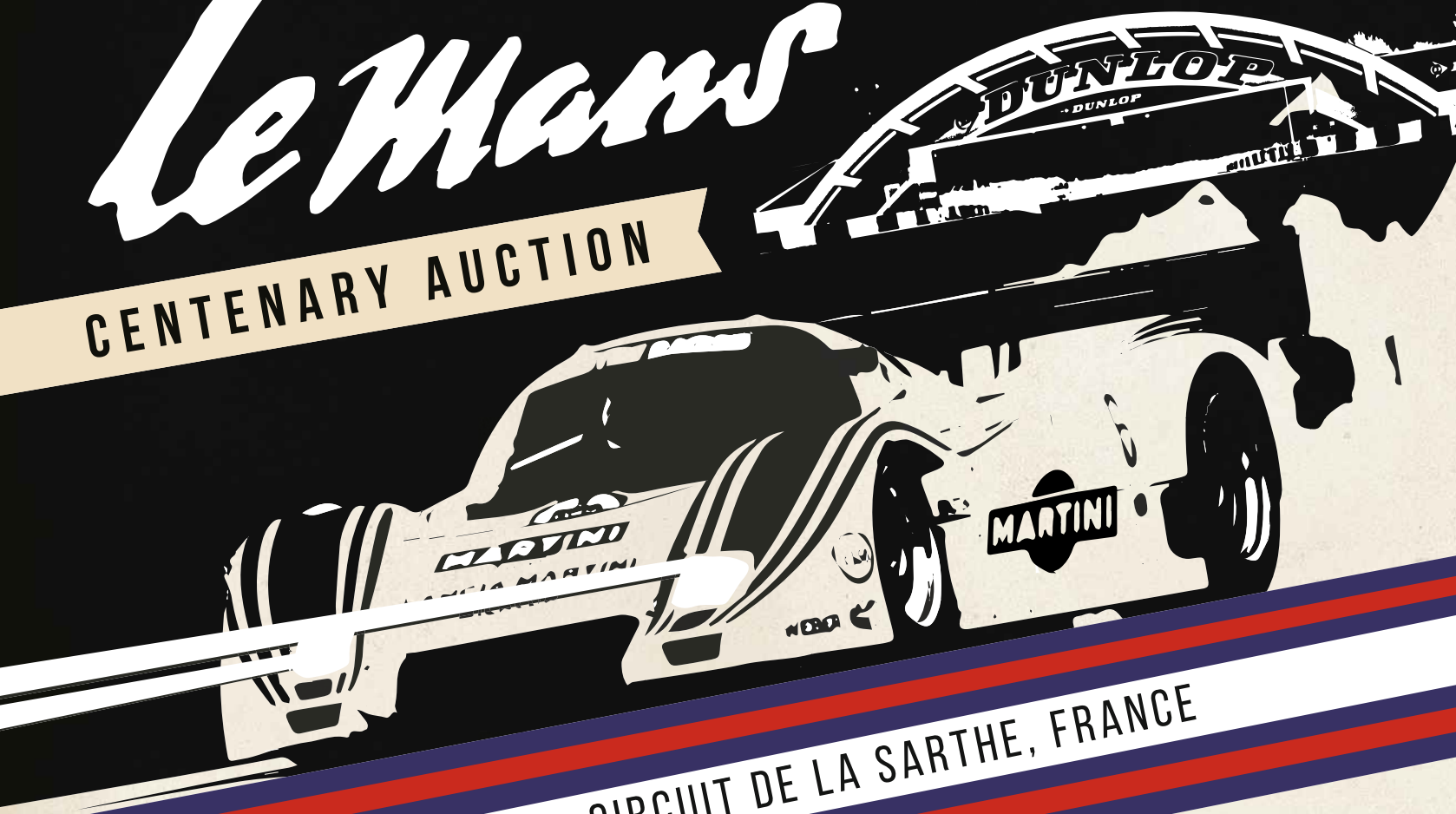

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RM Sotheby's is privileged to announce that in partnership with Le Mans and the ACO, it will present a spectacular, once-in-a-lifetime Le Mans Centenary auction to be conducted at the landmark running of the race in June 2023. In what promises to be the most significant sale of sports competition cars ever offered and taking place on track during the centenary race weekend, the live auction will feature 24 sports racing cars all of which will boast significant race history at the 24 Hours of Le Mans, the world's most important sports car motor race.

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IN THE BEGINNING...

As the 24 Hours of Le Mans marks its centenary, we look back at the origins of the world's greatest endurance race

Words *Octane* staff **Photography** Alamy

The motor car may have been born in Germany, but as the 19th century gave way to the 20th, France became the undisputed leader of the nascent motor industry. In 1903, almost half of all the cars manufactured globally were built by the French.

But in France, the car wasn't just some profitable export good: no other nation (in Europe, at least) embraced motor racing with greater fervour. It staged a one-mile sprint contest as early as 1887 (with only a single participant!), and in 1894 it held what is accepted as the first organised 'race', from Paris to Rouen. That was followed in 1895 by the far more convincing Paris-Bordeaux-Paris event. After that, motorsport in France exploded. Most popular were city-to-city events, but local road races proliferated as well. Just about every city had a 'circuit' – often more triangular than circular, usually very fast, and frequently lethal. Drive the roads that once made up those circuits and you'll find they're dotted with monuments to those who lost their lives in early motor races.

1906 was a pivotal year in the development of motorsport. In Australia, the first race was held at Aspendale, a racecourse circuit that pre-dates Brooklands; in Sicily the inaugural Targa Florio was held; and in France a group of enthusiasts founded the Automobile Club de la Sarthe, which would later morph into the Automobile Club de l'Ouest (ACO).

Left
The very first running of the 24 Hours, in 1923. In front are (from left to right) the two Excelsiors and the Bloch/Stalter Lorraine-Dietrich. The Number 8 car is the Bentley 3 Litre of John Duff and Frank Clement, the sole British entry.

‘SENIOR FIGURES AT THE CLUB PROPOSED AN EIGHT-HOUR EVENT, BUT EMILE COQUILLE SUGGESTED THEY WEREN’T THINKING BIG ENOUGH. A 24-HOUR RACE, HE ARGUED, WOULD BE A REAL TEST OF SPEED ENDURANCE’

Left
The traditional running start encouraged drivers, in their haste to get away, to neglect to fasten their belts. By 1969 Jacky Ickx (far left in blue helmet) was concerned enough that he walked slowly to his car in protest, and the ACO got the message, implementing a sitting or 'land rush' start in 1970 and then a rolling start in 1971.

On 26 June that year, the Club organised a race on 103km of closed public roads near Le Mans, the course including a 20km straight. After 12 laps, the very first 'Grand Prix' of 45,000 francs was claimed by Renault's head of testing, Ferenc Szisz, who had spent a dozen hours perched atop a Renault AK 90CV. He described the event as 'exceptionally hard', though he made it harder than it needed to be by neglecting to wear goggles. He ended up with eyes so inflamed that he could barely see where he was going for part of the race.

The Club remained active until the outbreak of World War One, and reconvened when the fighting ended with plans for a new event and a shorter circuit. Club general secretary Georges Durand, colleague Marcel Canit and magazine editor Charles Faroux proposed an eight-hour challenge, but Rudge-Whitworth importer Emile Coquille suggested they weren't thinking quite big enough. A 24-hour race, he argued, would be a real test of speed endurance.

It wouldn't quite be the first race of its kind (a 24-hour race had been held across the pond in Columbus, Ohio, in 1905), but Coquille's proposal was nevertheless an exciting one. A 17.26km circuit was chosen, with two straights: there was Mulsanne, of course, and another running from Maison Blanche to Pontlieue.

A date, 26-27 May 1923, was set for the inaugural 'Grand Prix de Vitesse et d'Endurance', as the race was initially known. The entries poured in, and on race day, the rain poured down. Despite the wet, loose surface, the rate of attrition was low, with all but three of the 33 starters going the distance. And the winner was… no-one. The early 24-hour races at Le Mans were intended to be part of a series, with the winner declared only after three events. For the record, the Chenard-Walcker of André Lagache and René Léonard covered the greatest distance – 128 laps, or 2209km. So after year one they must have led the Rudge-Whitworth Cup, surely? Not quite: atop the standings were Lucien Desvaux and Georges Casse. Their little Salmson had covered just 98 laps, but had exceeded the target it was allocated prior to the off by a greater margin than any other car.

The concept and the execution weren't yet perfect, then, but the race had already captured the imagination of many motoring enthusiasts. And besides, convoluted rules and systems would become a trademark of Le Mans.

For 1924 the 24 Hours moved to its now-traditional June slot, and far more ambitious lap targets were given to test the cars. In baking weather, dust proved to be a major problem, and 25 cars dropped out. The Bentley of John Duff and Frank Clement headed the 14 classified finishers, the result sparking Britain's long love affair with the 24 Hours.

By 1926, the ACO had realised the shortcomings of the complicated Cup format, and so those in charge came up with something… equally confusing to complement it. This was the Index of Performance. There was another notable change for the 1926 race: having purchased some land adjacent to the track, the Club erected permanent pits and some grandstands, which were filled with cheering French fans as a Lorraine-Dietrich won for the second year in a row.

Bentley was back on top in 1927, though its victory was an improbable one. The marque's entire entry was caught up in the infamous 'White House Crash', but Sammy Davis managed to patch up the 3 Litre he was sharing with Dudley Benjafield, and the pair limped on to rack up the greatest number of laps. Of course, they didn't actually 'win'; Salmsons claimed both the (now biennial) Rudge-Whitworth Cup and the Index of Performance.

Ironically, the pile-up at Maison Blanche raised the profile of the 24 Hours. In 1928, overseas entries outnumbered French ones for the first time. And in the years that followed, the event continued to evolve.

The circuit itself first changed in 1929 when the Pontlieue hairpin was blunted in response to complaints from local residents, reducing the length of a lap by almost a kilometre. Three years later, the modern circuit took shape, with Pontlieue removed from the equation entirely via the Dunlop Curve and the Esses, the move chopping the lap to 13.491km. Further tweaks over the years have included the addition of the Porsche Curves (1972) to bypass Maison Blanche, and the introduction of the chicanes on the Mulsanne Straight (1990), but the circuit is still very much recognisable as the one conquered by the Alfa Romeo 8C of Raymond Sommer and Luigi Chinetti in 1932.

It's a ribbon of road that has been the scene of some heartbreaking accidents, the very worst of them the crash in 1955 that claimed the lives of 83 spectators and driver Pierre Levegh. But the Circuit de la Sarthe has more frequently served up scenes of joy and sporting heroism, and not only at the sharp end of the race, either. Many of the most memorable moments in Le Mans history involve the 'also-rans'.

In 1950, for example, everybody had one eye on amateur racer Eddie Hall. The Yorkshireman was then nearly 50, and while he wasn't quite as fit as he had been during his time with the British Olympic bobsleigh team, he was still mad enough to attempt the entire 24 Hours of Le Mans alone. Others had tried and failed, but Hall – who had joked that he would wear dark green overalls so he could relieve himself without stopping – actually managed to go the distance without a co-driver. He finished 8th, having completing 236 laps (almost 2000 miles). His achievement was never replicated, and the practice of driving solo was banned in the 1980s.

No overview of the 24 Hours would be complete without a mention of the famous Le Mans start. It was dropped in 1970 after the associated dangers could no longer be ignored (see caption). But while it lasted, it was a fascinating event unto itself. Most teams and drivers had a view on the best method for making a quick getaway from a running start. Our favourite approach was Mike Hawthorn's – which was simply to cheat, as related by journalist Simon Taylor. Hawthorn, amused by how seriously Stirling Moss took the sprint across the track, once decided to jump the gun to wind Moss up. It might have secured him some advantage, except that he was hit by an attack of the giggles when a furious Moss yelled after him, 'You bastard, Hawthorn!', and he ended up doubled over on the track as everybody else got underway. Evo

BACK FOR MORE

At the 1925 24 Hours, Bentley's very first works entry retired after running out of fuel. Ninety-one years later, the car returned to Le Mans for another shot at glory

Words John Simister **Photography** Jayson Fong


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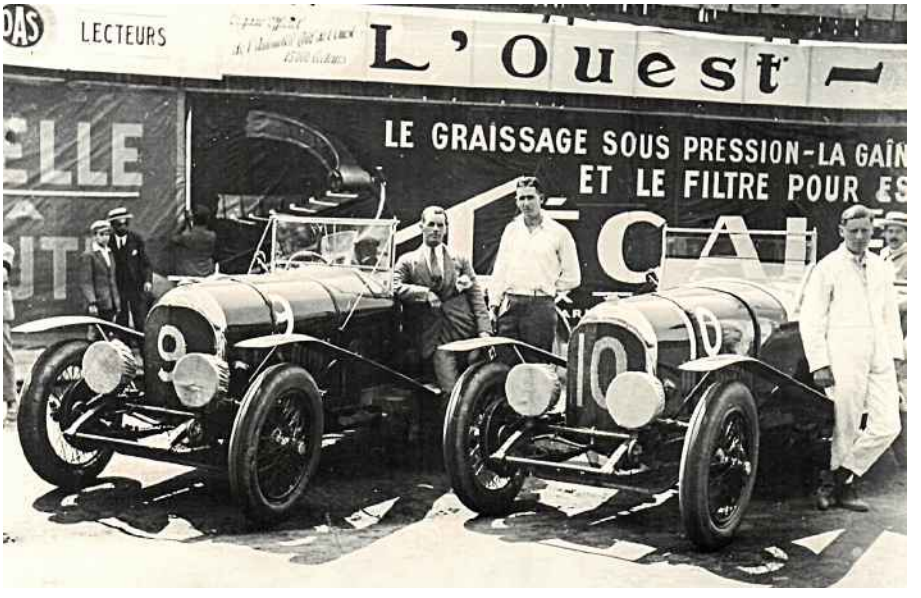

A 24-hour race? Madness, thought Walter Owen Bentley. No car would survive to the finish! Yet a Bentley was the very first entry received by the organisers of the inaugural 24 Hours of Le Mans in 1923. The paperwork was submitted by the marque's London agent, John Duff, who proved impossible to discourage. Recognising that one of his cars would be involved in this absurd event with or without his blessing, 'WO' released factory test driver Frank Clement from his usual duties to partner Duff.

Though its progress was temporarily halted when a stone punctured the fuel tank, the Duff/Clement 3 Litre came home in 4th place, setting the fastest lap along the way – and WO promptly changed his tune. Duff and Clement went on to win the 1924 race in a new 3 Litre, benefitting from greater factory support. And the following year, WO, with some encouragement from Dudley Benjafield, decided that the returning Duff/Clement car ought to be joined by a proper factory entry.

Test runs were carried out, calculations made, fuel stops scheduled; all looked good and the works 3 Litre was the pre-race favourite. But for 1925 there was a new rule. Le Mans was a race for cars *exactly* the same as those you could buy and use on the road. To emphasise the point, cars not only had to be fitted with a hood, but the hood had to be erected by the driver at the start of the race (1925 was the first year of the running 'Le Mans start') and stay in position for the first 20 laps.

The Tricolore fell at 4pm on 20 June 1925. The drivers sprinted across the track, put up their hoods, started their engines and roared away. Bertie Kensington Moir, sharing the Number 10 Bentley with Benjafield, made a cracking start, with only Duff's car ahead of him. By lap 14 Moir was leading, but he was forced to stop to refit a detached oil-filler cap.

Back out into the fray, hood still up, Moir set off in pursuit of the new leaders. At the end of lap 20, Benjafield and Clement were on their feet in the pits, ready for their first stints. They waited for their cars to arrive… and waited…

Eventually, Duff appeared – on foot and out of breath after running a mile and a half. His petrol pump had failed. He gathered up the spares he needed, and ran back. Total time lost: an hour and a half.

'DUFF APPEARED IN THE PITLANE – ON FOOT AND OUT OF BREATH AFTER RUNNING A MILE AND A HALF'

Then Moir arrived, also on foot. He had run out of petrol on lap 18 at Pontlieu (well north of the modern circuit). No liquids could be added to a car during the first 20 laps, so Number 10 was out of the race. For the fastest car in the event, it was game over before Benjafield had driven a single lap.

How? When erected, the hood functions as a very effective parachute, making the Bentley's already awful aerodynamics even worse, so fuel consumption goes up – a fact that everybody at Bentley had overlooked.

For a while there was hope that the repaired Duff/Clement car might yet deliver a good result, but at 5am on Sunday morning a float chamber detached from one of the car's bronze-bodied 'sloper' SU carburettors, and the engine went up in flames.

Bentley's time at Le Mans would come again, of course, but the marque's first works racer would play no part in the campaigns that followed: Number 10 was sold on after its retirement from the 1925 24 Hours, vanishing into the outside world.

THAT WAS THEN. This is now, and Number 10, or MH 7580, is rumbling its way towards Le Mans again. What's more, it's going to race in the Le Mans Classic, and hopefully take care of unfinished business.

The architects of this adventure are Bentley guru William Medcalf, and MH 7580's owner, Jonathan Turner – a man who drives his cars energetically and often. 'It's what they're for!'

When Jonathan bought the 3 Litre it was immaculate, having been completely restored by William's company at the request of the previous owner. The work was exemplary, but inevitably the car no longer looked like the ex-factory team racer that it is – so Jonathan asked a delighted William to 'unrestore' it.

Paint was skilfully dulled, race numbers were applied and partly rubbed away, and the shine was taken off the wood, until the car's appearance again told the story of Moir, Benjafield and the 1925 24 Hours.

From left
Bertie Kensington Moir (far right) with Number 10 ahead of an unexpectedly brief apperance at the 1925 24 Hours. With Number 9 are Frank Clement (left) and John Duff; Number 10 en route to Le Mans again.

1925 Bentley 3 Litre Short-Chassis Speed Model
Engine 2996cc straight-four, SOHC, twin SU G5 carburettors **Power** (standard) 85bhp @ 3000rpm **Transmission** Four-speed manual, rear-wheel drive **Steering** Worm and wheel **Suspension** Beam axles, leaf springs, friction dampers **Brakes** Drums **Weight** 1525kg **Top speed** c90mph

The effect is convincing – and I've had plenty of time to scrutinise the car on the journey from the Medcalf workshop in West Sussex to France. I'm in the passenger seat of MH 7580, travelling in convoy with a 4½ Litre (another of Jonathan's well-used cars) and William's 3 Litre saloon, which contains a mountain of spares and camping gear. Distributed between the three cars are Jonathan's sons, Freddy and Harry; friend David Hall (son of rally driver Anne Hall); photographer Jayson; and able mechanics Jamie and Dominic.

It's the Thursday before the Le Mans Classic, and we're a few miles inland from the Caen ferry port. Would I like to drive MH 7580? I don't need to be asked twice. Fog shrouds the middle distance of the old road that runs next to the new Route Nationale. Focusing on the road is made harder by the gauze screen ahead of me – a period racing fitment designed to stop solid objects while allowing air to pass through to reduce wind resistance. It works, but makes an eerie whistle.

'Remember to pump this when the pressure drops below about 2psi,' Jonathan says, pointing to the plunger that pressurises the fuel supply. 'And be firm with the gearchange.'

Centre throttle, outside handbrake: check. Magnetos on: check. Press the starter button and four big cylinders blatter into life, 16 valves fluttering, sloper SUs hissing. Disengage the surprisingly light clutch, wait for the gearwheels to slow to a halt, engage first. Clutch up – it's

'THE HEADLIGHTS DON'T WORK. GLAD WE FOUND THAT OUT BEFORE THE NIGHT RACE'

progressive as well as light, so it's clearly not the cone original – and we're off, boys in the back trusting me not to pitch them into the ditch.

The change from first gear to second benefits from a double-declutch on the way, but the next two upshifts need just a pause in neutral before you slide the hefty lever into the next slot. With a little practice it all works fine, but the double-declutching for the downshifts does call for accurate timing. This is made harder by the contortions required for heeling-and-toeing as a roundabout approaches and you need to brake at the same time. It's better, if slower, to do all the braking first.

Having refined my technique, I can enjoy the languid but insistent torque of the engine. The Bentley feels especially indomitable past a heady 2000rpm, when the exhaust note hardens into a hearty blare and everything gets livelier.

The wheels – larger than standard to mimic the look of Number 10 at Le Mans in 1925 – wear squashy, straight-grooved tyres from the Universal Rubber Company of Pennsylvania. They probably do little for the steering's precison, but a gentle wander either side of the intended heading is the way of a vintage car.

I relax and let the Bentley do its thing as it lopes along, keeping up with modern traffic and sometimes passing it. Holding 70 or 80mph is easy. Now snapper Jayson, looking back from the 4½ Litre ahead, wants me to turn the lights on for effect. They don't work. Glad we found that out before the night race.

FRIDAY IS PRACTICE DAY, but nothing can happen until we've fixed the lights. Jamie and Dominic disassemble a good part of MH 7580's bodywork as they chase the problem, but by the time I return from a wander to procure more fuses, they've found it: a wire trapped under a floor panel. The tyres are pumped up to 50psi. 'I hope they're up to being raced,' says Jamie. Our race number is 32. 'Dammit,' says Jonathan. 'I forgot to ask for it to be number 10!'

He heads out for the *Plateau* 1 practice session to qualify for the three races for pre-war cars. For the uninitiated: each of six *Plateaux*, or grids, contests one 43-minute race in the afternoon, one at night, and another the next morning. Allow time in between for displays and for the recovery of stranded cars, and you have an event lasting exactly 24 hours.

Clockwise from far left
Brits on tour: Bentley 4½ Litre follows our featured 3 Litre through northern France; the 3 Litre's expertly 'unrestored' cockpit; owner Jonathan Turner battling against the enormous drag created by the raised hood; William Medcalf under the bonnet.

Clockwise from left
The Bentley leads a Bugatti Type 44; drivers Jonathan (left) and William; writer Simister rides to the post-race celebration in London – wisely wearing his raincoat.

MH 7580 is the joint-oldest car in the race, but 'It's not the slowest thing in the class!' shouts Jonathan as he pulls into the pits. 'I can't decide whether to brake for Mulsanne's corner and take it in third, or carry through in fourth. I don't want to kill the brakes. It got to 2600rpm on the straight. It's overgeared, really, but we have these big wheels for the look.' So far, so good. Later, William does the night practice, after which MH 7580 is 46th fastest out of 63 cars, averaging 64.4mph for the lap.

SATURDAY AFTERNOON, and the sun is beating down. Seven of us piled into or onto the Bentley for the run from the paddock to the holding area, but now Jonathan is on his own as he lines up the worryingly hot Bentley for the Le Mans start. At 4pm the flag drops, the drivers run to their cars and – what's this? Jonathan is standing on the seat, pulling the hood closed, fumbling with the left clamp before plopping down behind the wheel and charging off last-but-one.

The crowd goes wild. The commentator too, explaining in a tumble of words how it was in 1925, and how this is the first time anyone has started a Le Mans Classic with a hood-erection. Maximum authenticity. But has it put paid to the Bentley's chances? No: after the spectacle of the Le Mans start, the cars form up on the far side of the circuit for a rolling start and are let off the leash at the Ford Chicane, just before the start line. There's time for Jonathan to get the hood properly attached before it blows away.

Here comes MH 7580 thumping past, engine obviously cooler now, Jonathan pumping his fist with glee. Three laps in and it's time for the obligatory stop, but it's getting very busy in the pits. Jonathan negotiates the traffic and hops out. Driver is clearly running hotter than car, but there's energy left for a pitlane interview. 'I got past a couple of people, but there's *much* more wind resistance with the hood up.'

Martin Overington's car comes in. His 1929 Blower is the quickest Bentley in the race. So quick, in fact, that he cooked the front brakes in practice and the car is now using brakes cannibalised from our 3 Litre saloon. It also has a neat line in extra engine cooling: an MGB radiator hung on the side of the engine bay. Meanwhile William is out in MH 7580, and is lapping well in his very first race at Le Mans. He'll finish 41st. Progress.

'THERE'S TIME FOR JONATHAN TO GET THE HOOD PROPERLY ATTACHED BEFORE IT BLOWS AWAY'

'The tyres are absolutely shite,' he says after the race. 'We'll put the saloon's wheels [with stickier Blockley tyres] on for tonight. I had a great race with Lars Rolner in a 4½; I got him in the end. It's on the limit everywhere, and it was pulling 2800rpm on the straight.' A quick calculation reveals this to be 91mph, showing the merit of some light tuning. Higher compression, gas-flowed ports and careful balancing help the engine make 105bhp – 20bhp more than standard.

AFTER THE NIGHT RACE, Jonathan is buzzing. 'I had a great tussle with an Aston and a Blower.' William is revved-up, too: 'There's oil on the corner before the Mulsanne Straight. I went through flat-out and drifted a long way… Yee-ha!' They finished 26th.

And so to the last race on Sunday morning. 'I wasn't sparing the horses,' William enthuses at the pitstop, but Jonathan plans to take it easy for the final stint. To everybody's great relief, MH 7580 holds together and crosses the line in a very creditable 28th place, writing a new ending to its Le Mans story.

It gets better, though. The total distances covered in the three races are aggregated, and it turns out that MH 7580 has come 22nd overall. And then there is the Index of Performance, that complicated Le Mans speciality which takes notional engine power into account. The 3 Litre is in 6th place, sandwiched between a Riley TT Sprite and a Morgan, and ahead of all the other Bentleys – a fabulous result.

NOW IT'S MONDAY. We're scything up the A3 and into London with a posse of Bentleys: the saloon, Jonathan's 4½ Litre, three other racers from the Le Mans Classic, and several others gathered up at the Medcalf emporium en route. We're heading for the Jack Barclay Bentley dealership in Berkeley Square, just like the Bentley Boys used to do after Le Mans.

The square is packed, a sea of mobile phones recording our arrival as the evening traffic is temporarily thwarted. The crowd cheers as we line up outside the showroom. Corks pop and champagne is sprayed. And the centre of attention, the star of the moment, is MH 7580 – a Le Mans failure no more. Somewhere here, unseen by we temporal folk, the ghosts of Bertie Kensington Moir and Dudley Benjafield are surely grinning from ear to ear. Evo


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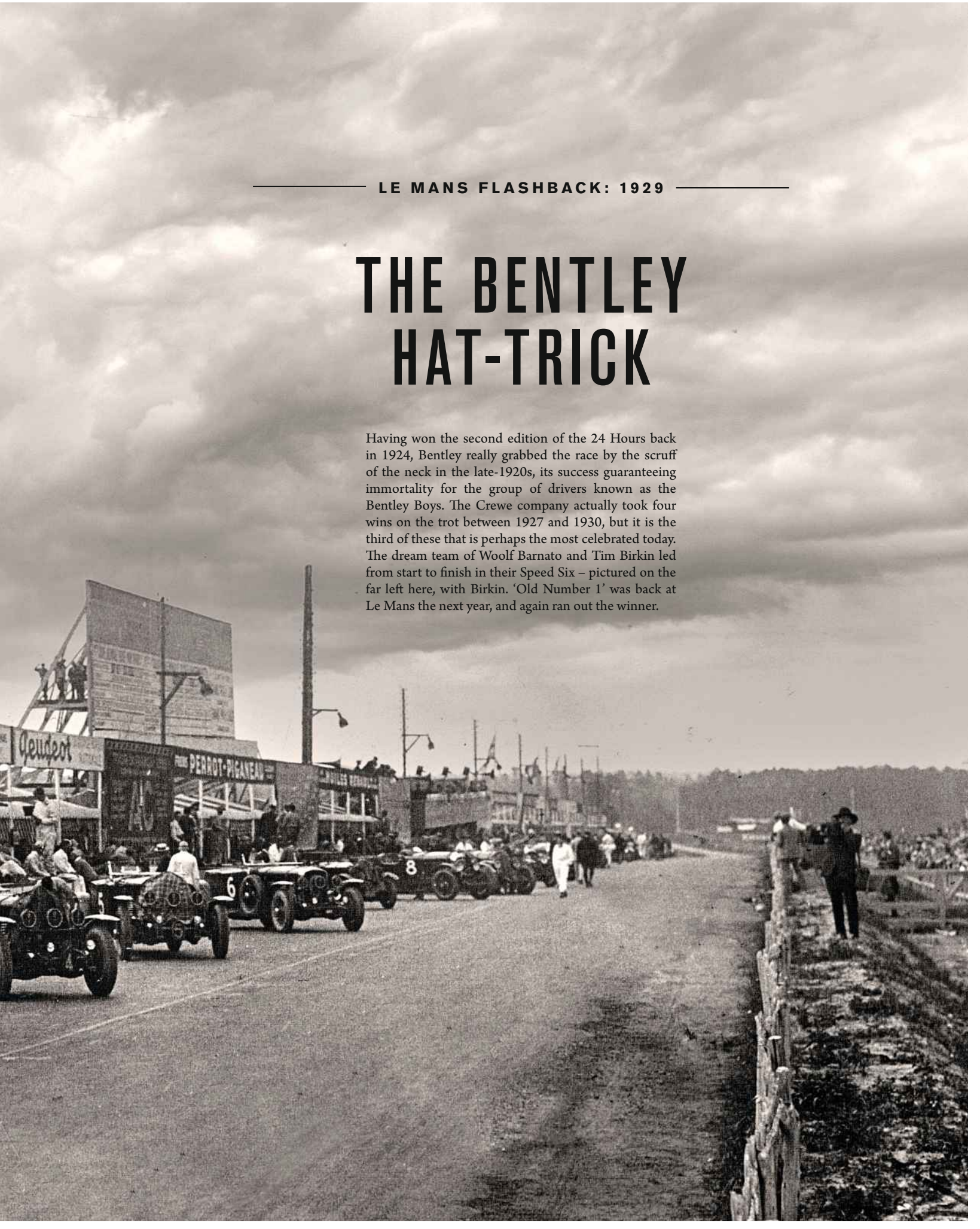
ALAMY

THE BENTLEY HAT-TRICK

Having won the second edition of the 24 Hours back in 1924, Bentley really grabbed the race by the scruff of the neck in the late-1920s, its success guaranteeing immortality for the group of drivers known as the Bentley Boys. The Crewe company actually took four wins on the trot between 1927 and 1930, but it is the third of these that is perhaps the most celebrated today. The dream team of Woolf Barnato and Tim Birkin led from start to finish in their Speed Six – pictured on the far left here, with Birkin. 'Old Number 1' was back at Le Mans the next year, and again ran out the winner.

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RSF 301
17

FIVE STARS

Mark Dixon joins five Jaguar D-types – including the cars that finished 1-2-3 at Le Mans in 1957 – on a sensational road trip

Photography Matthew Howell, Chris Brown and Mike Dodd

For drivers approaching the A5/A43 Towcester roundabout in Northamptonshire, it must have been an unforgettable sight. And the sound must have been equally memorable. Five Jaguar D-types, blasting away from the roundabout and onto the dual carriageway. Genuine racing cars on the road.

But only the true *cognoscente* – or anorak, if you prefer – will have recognised the significance of the cars. Between them, these five account for all four of the long-nose D-types still in Europe; all three of the Ecurie Ecosse long-nose cars; and all of the top three finishers from the 1957 24 Hours of Le Mans.

It's to celebrate the D-type's clean sweep of the podium in '57 that we're making our journey. We're driving from Jaguar's Classic Works facility at Ryton, on the outskirts of Coventry, to the Concours of Elegance at Hampton Court Palace. And we'll be calling in at a few interesting places along the way.

THURSDAY DAWNS bright and clear (mercifully) as the D-types assemble outside Classic Works. This building has been open for only a few months and still has that 'brand new' smell. The site itself has history, however, for until 2007 it was occupied by the old Peugeot factory – a relic of World War Two, when the Rootes Group built a 'shadow' factory well away from Coventry city centre and the threat of German bombs. Engines for Bristol Blenheims were once assembled where XK straight-sixes are now rebuilt.

Mingling with the owners of the D-types and their partners are Jaguar notables including legendary test driver Norman Dewis, 1950s Le Mans mechanic Ron Gaudion (more about him later), and designer Ian Callum. Ian lets slip that he's just bought a childhood dream car: a 2.3-litre Vauxhall Chevette HS. In silver with a red stripe, of course. But we can't stay to chat for long; the clock is ticking and we have places to go and promises to keep.

The D-types are now lined up in the car park and ready to rumble. Three of them are Ecurie Ecosse machines, painted in the team's signature metallic blue with white stripes. Chassis XKD 606 (one stripe across the nose), which lives in the Louwman Museum, is the 1957 Le Mans winner. XKD 603 (two stripes) was 2nd at Le Mans in '57 and belongs to Clive Beecham. And then there's XKD 504 (three stripes), which is still being raced today in the hands of owner Christian Gläsel.

We also have the Jaguar Daimler Heritage Trust's XKD 605, winner of the 1956 Reims 12 Hours and finished in British Racing Green. And finally there's the French Racing Blue XKD 513, which finished 3rd at Le Mans in 1957. It's now owned by Austrian enthusiasts Hans-Jörg and Günther Holleis.

Oh, and there's another Jaguar works team vehicle: Clive Beecham's 1950 Bedford 30cwt lorry that he's had restored as an exact replica of the works' parts van. The Bedford will be heading to Hampton Court, too, at its own sedate pace.

'WE'RE JOINED BY ANOTHER WORKS TEAM VEHICLE: AN EXACT REPLICA OF JAGUAR'S PARTS VAN'


6
RSF 302

FOR THE FIRST LEG of our journey, I'm deputed to ride with Christian Gläsel in XKD 504. I carefully open the car's alloy door and plant my hands on the most rigid-looking parts of the cockpit surround as I lower myself into the bathtub-like passenger compartment. It's certainly cosy in here, but not too uncomfortable once you've acclimatised to the semi-foetal position required.

Christian has owned the car since 2013. 'The D-type is a car I've coveted since I was a child – cooler than a Ferrari and such an icon because of its dominance in the mid-1950s.' He fires up the straight-six and noses the car out behind the Land Rover Discovery that will be filming the convoy as we head to our first destination: Wappenbury Hall, the former home of Jaguar co-founder Sir William Lyons. We're not even out of the car park and I can already tell that this car is something of a handful in its competition state of tune. The clutch is either in or out, and with 'hot' spark plugs installed, the engine is a bit fluffy at low revs.

But what a noise! At idle the engine sizzles like a slice of bacon in a frying pan. And when Christian gives it some right foot, it emits a raw, thrilling noise. As Ron Gaudion puts it later: 'It sets up a tingle in your stomach that runs right down to your feet.'

A few minutes later we've negotiated some leafy Warwickshire lanes to arrive at Sir William's old pad. The cars line up again for the obligatory photo-call, and peace descends briefly as engines are switched off and passengers uncurl their legs. With its slightly garish herbaceous borders and warm red bricks, Wappenbury Hall makes a strikingly 1950s backdrop for the D-types; it's almost as if the cars are waiting for Sir William himself to step out and wave them off to Le Mans. Our next destination, though, is Silverstone, and soon Christian and I are back in XKD 504 and leading the pack towards the circuit, where the cars can hopefully be let off the leash for a couple of laps.

D-types were frequent visitors to Silverstone back in the day, and in fact Jaguar intended the cars to make their debut at the circuit's 1954 International Trophy Meeting, but the two works entries had to be pulled at the last minute as the team raced to complete preparations for Le Mans.

On the old A5 trunk road (largely superseded by the M1 now), the cars feel very constrained. They weren't made to putter along at 60mph; indeed they're geared for more like 160mph. For amusement's sake, I ask Christian to slow right down and then gun XKD 504 through the lower gears. He's more than happy to oblige. *Whoah!* The exhausts erupt in a savage, brassy blare, the nose rises like the prow of a speedboat, and the camera car that was a couple of hundred yards in front is suddenly being reeled in as though we're in a movie on fast-forward. Christian barely has time to get into third gear before he has to back off. It's just incredible – we're in a Jaguar from 1956, and it's accelerating like a modern supercar!

'*WHOAH!* THE EXHAUSTS ERUPT AND THE NOSE RISES LIKE THE PROW OF A SPEEDBOAT'

From left
Writer Dixon (in passenger seat) chats with the owner of XKD 504, Christian Gläsel, as the convoy of D-types leaves Jaguar Classic Works; the tour was the idea of Clive Beecham, who brought along both his D-type and his replica of the Jaguar team's parts van, pictured here outside Wappenbury Hall – the former residence of Sir William Lyons.


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Above
The group in formation at Silverstone – the circuit where Jaguar originally intended the D-type to make its competition debut.

'IT'S A FULL-HOUSE 1950S RACING CAR, YET IT'S AS EASY TO HANDLE AS AN MG OR A TRIUMPH'

It gets better, because we've come to the roundabout where we turn right onto the A43 dual carriageway, and by some miracle all five D-types have a clear path together away from the traffic lights that control our exit. Christian stands on the loud pedal, our fellow tourists respond in kind, and all of a sudden we're on the opening lap at Le Mans in 1957.

OK, maybe that's stretching the imagination a little too far, but to be part of this convoy as the cars hammer along a fast dual carriageway, carving past trucks as if they were standing still, is an electrifying experience.

And then it gets even better than that. After we've arrived at Silverstone and cajoled the marshals into giving us a few minutes of track time for photography, Clive Beecham tosses me the key to XKD 603 (two stripes, remember). To put that act of generosity into context, consider that the 1956 Le Mans-winning D-type, XKD 501, another Ecurie Ecosse car, sold at auction for $21.78 million in 2016.

Fortunately, Clive's car is rather more tractable than Christian's at the speeds required for photography. And having piloted Jaguar's prototype D-type, XKC 401, from Coventry to Norman Dewis's home in Shropshire, I know that there's nothing to fear – other than running into the back of the camera car, of course.

That's the glory of the D-type. It's a full-house 1950s racing car, the pinnacle of motorsport technology in its day, yet it's as easy to handle as an MG or a Triumph. I'm not kidding. The steering is beautifully light, the gearchange positive and mechanical in feel, the brakes superb, and the ride more supple than that offered by any mass-market sports car. It is just *unbelievably* good.

Pushing the heavily cranked-forward gearlever into first, I ease up the clutch and start rolling behind Matt Howell's camera car, shifting up a couple of gears as everybody moves into their allotted position. As soon as Matt has nailed the shot he's after, the camera car pulls off, and now there's a chance to drive the Jaguar rather more quickly. We're a long away from touching 170mph down the Mulsanne Straight, of course, but as I snake round Brooklands and Luffield and power onto the start/finish straight, with the engine yowling away, I feel like I'm king of the world.

Back in '57, this car finished second at Le Mans in the hands of Ninian Sanderson and Jock Lawrence. Incredibly, five of the top six cars that year were D-types, the one interloper being a Ferrari 315 S that came in 5th.


RSF 302

Clockwise from left
Christian Gläsel's race-prepped 1956 D-type stretches its legs – while his passenger stretches hers; Frank Williams makes time to watch the D-types depart after their visit to Williams HQ in Oxfordshire; the snug cockpit of XKD 513; the tour stopped off at Brooklands for a photo on the circuit's banking.


3
301

‘HAMILTON AND GREGORY DROVE FLAT-OUT FOR 15 HOURS. YOU COULD DO THAT IN A D-TYPE AND GET AWAY WITH IT’

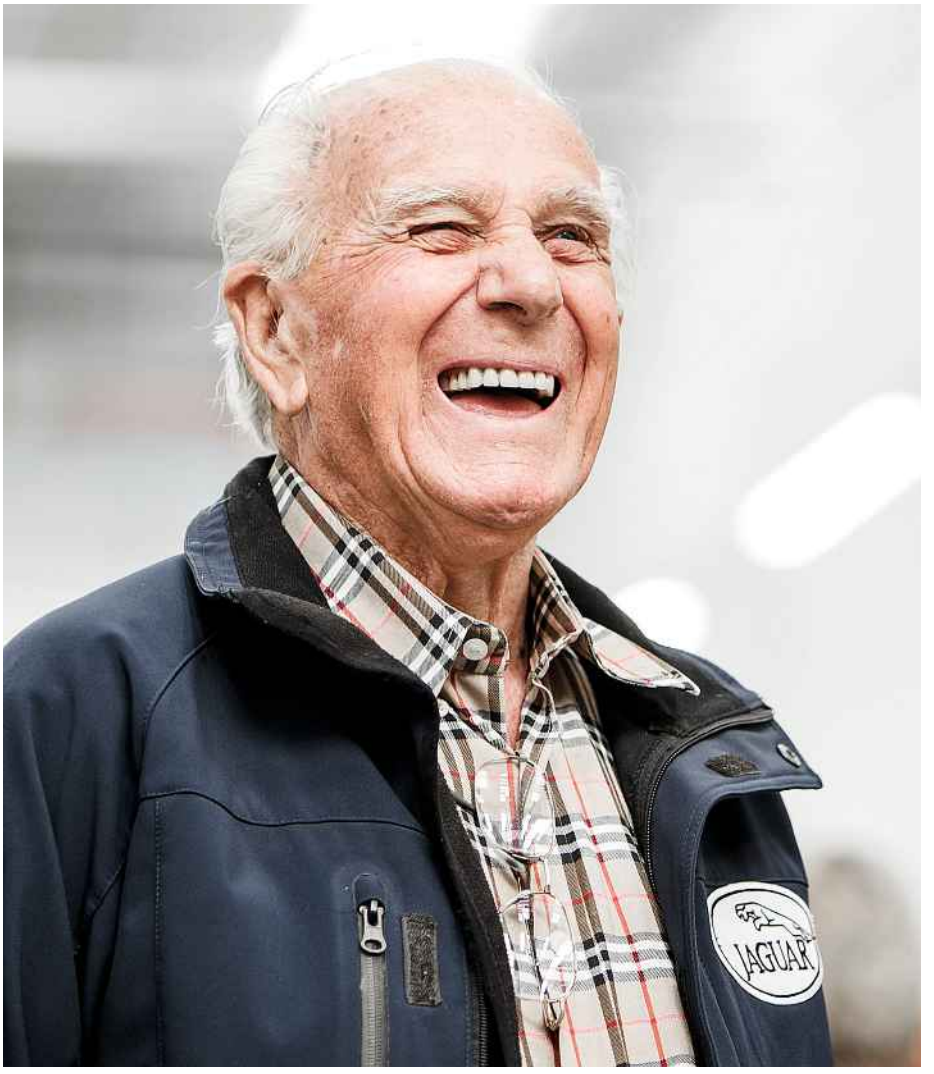
What was really remarkable, however, was the performance of the 6th-placed D-type, driven by Duncan Hamilton and Masten Gregory. Having dropped down as far as 20th due to the exhaust burning away part of the cockpit floor – really! – they clawed their way back to 6th by driving the car absolutely flat-out for 15 hours. You could do that in a ‘D’ and get away with it.

Such heroics aren’t needed today, but we do have to push on to our penultimate destination: Williams Advanced Engineering near Wantage in Oxfordshire. It’s mostly dual carriageway to get there, with a few miles of M40 motorway, and for the first time we get a bit of rain. I’m hunched in the passenger seat of Clive’s D-type with the raindrops stinging my face like shotgun pellets, and you know what? It’s just fantastic.

Upon our arrival we have a bite of lunch before taking a tour of the F1 museum and the workshops (the bits that aren’t top-secret, anyway). But the highlight of our visit is when Frank Williams himself emerges to say hello. I had suspected he might have an affinity for Jaguars after learning that it was a ride in a friend’s XK150 during the late 1950s that got him hooked on cars. Later, as we’re roaring out of the main gates, there’s Frank again, in his wheelchair on the pavement, grinning and waving each car on its way!

The rest of the journey south, to the RAC Country Club at Woodcote Park, in Surrey, where the cars will rest up overnight, is eventful only because of the amount of traffic we encounter. As a result of being held up, Christian’s XKD 504 runs out of fuel literally yards from its parking space. But everyone has made it – even the Bedford van. Yes, there has been the odd instance of rough running along the way, but nothing that a bit of fettling wasn’t able to cure. Not bad for a clutch of old racing cars.

This is where I have to depart the tour and head back to home and reality. Tomorrow, the D-types will head for Brooklands and its famous banking, and from there it’s only a short blat to Hampton Court, where the cars will take pride of place in front of the Palace – and quite rightly, too. Even among a concours field of some of the greatest cars ever built, the D-type deserves particular respect. A few years ago Norman Dewis was asked whether he would have made any changes to the D-type, with the benefit of six decades of hindsight. ‘Not really,’ he replied. ‘It was just right, from the beginning.’ Amen to that.



THE MECHANIC'S TALE

Ron Gaudion came to the UK looking for work in 1954, and soon found himself pit crewing at the 24 Hours of Le Mans

Words Mark Dixon **Portrait** Mike Dodd

'After Le Mans in 1955 we felt good, but we didn't celebrate because of the accident. In '56 we had a few beers, having beaten Moss and Collins in the Aston Martin into second place. But in '57, when we came first and second, David Murray was so delighted that he laid on a wonderful dinner in one of the hotels in Le Mans. It was fantastic.'

In his soft Aussie drawl, Ron Gaudion is recalling his time as a pit mechanic at Le Mans – with Jaguar in 1955, and then with the Ecurie Ecosse team in '56 and '57. Ron who? You may never have heard of him, but Ron was the very first employee taken on by Jaguar to build the production D-types, and he looked after them during their competition heyday of 1955-57.

'I landed in England in January 1954 and got a job for ten months in Manchester,' he recalls. 'But I'd come over to further my knowledge of the automotive industry, so in January 1955 I drove to Birmingham and went round Norton, Triumph and Beezer [BSA]. No-one was hiring. My last visit was to Jaguar on a Monday morning. No luck there, either.'

Fortunately for Ron, it turned out that while the personnel manager at Jaguar had forgotten about a project that was just about to begin, the folks at the Labour Exchange in Coventry hadn't. Two days later, he offically started work at Jaguar as the first person drafted in to help translate Malcolm Sayer's D-type sketches and blueprints into metal.

'DURING THE RACE, WE'D BE UP FOR 36 HOURS STRAIGHT'

Initially Ron was employed as a toolmaker, but as Le Mans drew nearer he was asked to help assemble a couple of works racing cars in the Competition Department. Then, because he already had a passport, he was invited to accompany the Jaguar team to Le Mans…

It turned out to be a mixed blessing. Ron was on the pit wall when Lance Macklin's Austin-Healey and the Mercedes-Benz 300 SLR of Pierre Levegh collided, sending the Mercedes cartwheeling into the crowd. Including Levegh, 84 people died and up to 200 were injured.

'There were two guys standing just below me, a *gendarme* and a *plombeur*, who was there to check the lead seals on the cars, and they were literally cut in half by the 'Healey. Awful.'

Le Mans in 1956 was a happier time for Ron. He had joined David Murray's Ecurie Ecosse team, which entered a solitary D-type, and it won the race – without drama of any kind.

Ahead of the 1957 event, Ron was chosen to deliver a 3.8-litre D-type to Le Mans. 'I was Tail-End Charlie in a convoy of four D-types, and as we were driving down to Brighton I got separated from the car in front by a farmer who shot out of a gateway in his tractor. When he finally turned off again, I had to catch up because I didn't know where the airfield was for the freighter that was taking the cars to France! The road was damp, so I was getting wheelspin in top gear – and I later calculated from the rev-counter that I'd been pulling 151-152mph!'

Life during the race itself was very full-on. 'We'd be up for about 36 hours straight, from 8am on the Saturday, and by the time we'd packed up after the race and had a few gargles it would be near enough Monday morning.

'After the 1957 24 Hours we loaded the cars into transporters and drove straight to Monza, where we were racing against the Indy cars. Being an oval, Monza suited them, and they were running bigger wheels. Meanwhile we were limited to 160mph to avoid throwing tyre treads. The Yanks were rebuilding suspensions and changing gearboxes in the breaks between the three heats, but our cars had just come from Le Mans and we hardly touched them.

'We finished fourth, fifth and sixth behind the Americans, but if there hadn't been three heats over the 500 miles – if it had just been a case of going the full distance – I think we would have tossed them. The engines were very reliable. We rarely had to do much more than top up with oil during driver changes, and sometimes we didn't even have to do that.'

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ALAMY

LE MANS FLASHBACK: 1931

ALFA'S PRE-WAR DOMINATION

After Bentley's purple patch, it was Alfa Romeo's turn to enjoy a run of success at Le Mans, the Italian marque scoring four wins on the bounce between 1931 and 1934 with its magnificent 8C. The first of them, though, was as much a British victory as an Italian one, for the winning 8C-2300 LM was driven by owner Earl Howe and Tim Birkin (pictured at the wheel). The race was in large part decided by tyres and reliability, with the Bugattis withdrawing after just four hours. Ultimately only six cars were classified, and the Birkin/Howe Alfa romped home seven laps clear of its closest rival, the Mercedes-Benz SSK of Boris Ivanowski and Henri Stoffel.


Ferrari

CODE RED

Henry Catchpole tries to keep his heart rate under control as he gets behind the wheel of the Ferrari 250 Testa Rossa that won Le Mans in 1958

Photography courtesy of the car's owner

1958 WINNER ON THE ROAD

MOTORSPORT IMAGES

Left
Phil Hill (driving) and Olivier Gendebien soak up the applause after winning the 1958 24 Hours of Le Mans. Hill had scouted the circuit with friend and fellow racer Denise McCluggage, and to ensure he took the best line through the fast, blind right-hander leading to Indianapolis, he had instructed Denise to splash bright yellow paint on the road in a particular spot – only to forget all about it in the heat of battle.

For a full minute after sliding into the driver's seat, I hesitate, considering whether I should use the excuse of my gangly frame barely fitting around the big steering wheel to pass up a dream drive. Crazy, right? But this is not just any 250 Testa Rossa; this is chassis 0728TR, the frighteningly precious, ex-Scuderia Ferrari car that won the 1958 24 Hours of Le Mans.

Taking turns behind the four-spoke, wood-rimmed wheel on that occasion were Olivier Gendebien and Phil Hill, whose efforts also sealed the 1958 World Sportscar Championship for Ferrari. For much of the race the pair had to deal with torrential rain that caused several serious accidents, one of which resulted in the death of Jean Brussin.

'The volume of rain was amazing,' recalled Hill, who drove masterfully in the wet. 'But I discovered that if I sat on the tool roll to prop myself up and then tilted my head back and looked just over the tip of the windshield and under the bottom of my visor, the view wasn't too bad.'

The weather today is more benign, but I'm finding plenty of other things to worry about as I sit where Gendebien and Hill once sat. I've been offered the chance to drive 0728TR not in the safe confines of an airfield or test track, but on a busy B-road. Oh, and this is a 250 TR with a centre throttle.

Scenarios, consequences and very large numbers dance through my head. Next to me, though, my incredibly generous friend, whose family owns the car, seems totally relaxed and disarmingly sure of my abilities. Suddenly I find myself thinking back to childhood, and a cautionary tale related to me by my father. As a boy he had turned down, out of shyness, an opportunity to ride on the footplate of a steam train. He had regretted it ever since. I take a deep breath and turn the key in the middle of the dash…

With the V12 idling and my heart rate bouncing off the limiter, I spend a few more seconds trying to settle, letting my gaze linger on various things that might be helpful. There are five beautiful white-on-black dials – four smaller SACMA ones flanking a big Jaeger central rev-counter complete with red tell-tale at just over 6500rpm, although the numbers run all the way round to 10,000.

To my right a small, round mirror in a bullet-shaped housing gives a surprisingly decent view of what's behind. In front of me, shapely bulges frame the road ahead. Chassis 0728TR has the flat-sided bodywork that was introduced after Ferrari discovered that the more famous pontoon-fender design – with the body cut away behind the front wheels to aid brake cooling – wasn't very aerodynamic. The car ran with pontoon fenders at the 1958 Targa Florio, but was modified for the Nürburgring 1000km and Le Mans the following month.

I wait for a gap in the traffic and pull out of the lay-by where the Ferrari has been resting. A squeeze of that centre throttle and we're away smoothly. Not many TRs had the throttle pedal in the middle, but this one was set up to suit works driver Mike Hawthorn, whose preferences were shaped by the configuration of his Alfa Romeo 8C. My friend, who has had plenty of time to become comfortable with the pedals this way round, claims that he actually prefers it now.

I don't yet feel the same way, but I'm not as discombobulated as I feared I might be. The narrow throttle pedal requires decent stabs when blipping on down-changes, but my right foot only instinctively wants to go the wrong way when moving from brake to throttle, and not the other way round, thankfully.

Still, I've never concentrated quite so hard when driving a car. I have to think and act very precisely every time I brake, accelerate or change gear. Try swapping your knife and fork around when you next eat a meal and you'll get the idea. It's certainly not impossible, but it requires a conscious effort.

If the centre throttle is an acquired taste, it's hard to imagine any driving enthusiast could fail to fall head over heels for the TR's fabulously tactile gearshift. Its action is weighty and well-oiled, and the lever sits close to the wheel, falling perfectly to hand when you want it.

'THE CAR WAS SET UP TO SUIT WORKS DRIVER MIKE HAWTHORN, WHO PREFERRED A CENTRE THROTTLE'

Clockwise from top right There's much to enjoy even before you turn the key, from the bullet mirror to the SACMA dials complete with Prancing Horses; the Mas du Clos badge indicating that the car once belonged to arch collector Pierre Bardinon; centre throttle pedal; the 'unburstable' 3-litre Colombo V12.


OLIO
METRI
BENZINA


COLLECTION MAS DU CLOS

1958 Ferrari 250 Testa Rossa

Engine 2953cc V12, OHC per bank, six Weber 38DCN carburettors **Power** 296bhp @ 7200rpm **Torque** 225lb ft @6100rpm **Transmission** Four-speed manual, rear-wheel drive **Steering** Worm and sector **Suspension** Front: unequal-length wishbones, coil springs, hydraulic dampers, anti-roll bar. Rear: de Dion axle, trailing arms, coil springs, hydraulic dampers **Brakes** Finned drums **Weight** 800kg (dry) **Top speed** 168mph

The best shift – and the only one that doesn't need a double declutch – is from first gear to second. Pull out of a junction (having looked carefully several times and then once more to be sure!) and there is enough time in first gear to enjoy a crescendoing chorus of revs before you snap the lever back across the short throw of the open gate.

The 3-litre Colombo V12, which sends 300bhp to the rear wheels, feels unburstable. It's easy to picture it thundering away through the day and night at Le Mans. When Stirling Moss drove a 250 TR for the first time at Goodwood Festival of Speed, he apparently climbed out of the car saying he wished his Aston Martins of the same period 'had had an engine that good'.

He's no Moss, of course, but my friend has driven the TR on track, and reports that it's wonderfully controllable over the limit of grip. Not agile like an Aston DBR1 or a Jaguar D-type, but easy. Oversteer is apparently progressive, and the car has a long-wheelbase feel to it. That may well be down to the fact that early 250 TRs were essentially 500 TRs lengthened by about 10cm. Those 10cm were needed to accommodate the 250's V12 engine, a bigger lump than the straight-four of the 500.

Above
Chassis 0728TR originally had pontoon fenders, but more aerodynamic, flat-sided bodywork was fitted before the car ran at Le Mans in 1958.

We're humming down a leafy lane now, and the car and I are beginning to get along, our rapport only undermined by drum brakes that do little to inspire confidence. The brake pedal seems to go through about a foot of unsettling dead travel at the top. Keep squeezing and the car is eventually hauled up, but call upon the drums too often and they start to fade quite alarmingly, as Ferrari works drivers discovered in period. (Enzo Ferrari was a fan of the 'proven technology' of drum brakes, but by 1959 all works 250 TRs were being built with discs.)

It's no good being timid, though, no matter how nervous you might be feeling. This is a car that needs to be shown who's boss; positivity and a certain forcefulness are needed to get the best out of it. I give the gruffly musical V12 an opportunity to sing its heart out, brace myself against the hurricane that is now ripping over the bright red undulations of the bonnet, and try to summon my inner Phil Hill…

A couple of hours later, with the car parked up again and still in one piece, I reflect that while a circuit or an airfield would have been a less intimidating place to drive the TR for the first time, being out on the road – with traffic, trees and ditches all in worrying proximity – definitely added to the experience. I won't pretend to know what it was like for Hill and Genedebien in the rain at Le Mans in 1958, or for Mike Hawthorn and Wolfgang von Trips when they steered 0728TR to a podium place in the Targa Florio, but having driven the car on the road I can dream a little more vividly. Evo

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LE MANS FLASHBACK: 1937

THE TANKS ROLL IN

The Bugatti Type 32 'Tank' of 1923 was a primitive, slab-sided streamliner that could hit 118mph – if the driver could keep it from taking off. It was a forward-thinking racing car, but not nearly as useful as Bugatti had hoped it would be. The next Tank car, the Type 57G, was a different beast: shaplier, if not exactly pretty, and fabulously effective in the hands of Robert Benoist (pictured) and Jean-Pierre Wimille at the 1937 24 Hours of Le Mans. The pair cruised to victory in a race marred by a deadly pile-up at Maison Blanche – and Wimille finished 1st again in 1939, driving the new Type 57C Tank. Today, though, Wimille and Benoist are as well known for their heroics during World War Two as for their exploits on the track. Along with friend and fellow racer William Grover-Williams, they served in the British Special Operations Executive, supporting the French Resistance. Sadly, Wimille was the only one of the three to survive the conflict.


2

DBR WON!

On 21 June 1959, Aston Martin finally won Le Mans, with the DBR1. **Stephen Archer** drives the car that finished 2nd that day, and explains what made the DBR1 such a world-beater

Photography Tim Andrew


51

Right and left
Writer Archer in the cockpit of DBR1/4 after indulging photographer Tim Andrew's request for a Le Mans-style running start.

Spoiler alert: this is the greatest Aston Martin ever. So there you have it. Savour the pictures and enjoy the rest of your day. Not so fast, Archer, I hear you say, that's quite a claim. But greatness, I would contend, is not a subjective thing; it can be measured, by the achievement against the intent and in view of the circumstances.

David Brown wanted to win Le Mans from the moment he bought Aston Martin in 1947. After 12 years of trying, he and Aston Martin finally took the winner's flag in 1959, with the DBR1. Two generations on, a great many other fine Astons have come and gone, but in terms of competition success, the DBR1 remains in a class of one.

The model is also notable for having been designed almost in its entirety by one man, undersung hero Ted Cutting. This genius was responsible for everything save the gearbox, which was a development of the David Brown-built 'box for the V16 Grand Prix BRM. He had taken over as chief designer of Aston Martin's racing cars in 1955. At the time, the DB3S was still a competitive car, but it was clear that a new one would be required to beat the Mercedes-Benz 300 SLRs, and so work on the DBR1 began in August 1955.

Cutting wanted a stiff, lightweight structure, and his perimeter spaceframe delivered this, with the DBR1 tipping the scales at a smidge over 800kg. A new de Dion rear suspension set-up had at its heart a five-speed, magnesium-cased transaxle with dog gears. The front suspension was a trailing-link arrangement similar to that of the DB3S, and springing all around was by adjustable torsion bars, while the steering was rack-and-pinion.

The RB6 straight-six was an all-alloy design with the 60º, twin-plug cylinder head from the final evolution of the DB3S motor. With a new 95º head for 1957, the 3-litre version of the RB6 produced around 255bhp. The engine was stronger and lighter than what had gone before, and a dry sump allowed it to be placed lower in the chassis. The driver sat much nearer to the road, too, than in the DB3S, and the car's weight distribution was nigh on perfect.

Cutting's original body design for the 1956 prototype DBR1 was scrutinised by racing supremo John Wyer, who saw some room for improvement. With Steve Stephens, Cutting took tin snips to the bodywork to create the far more elegant car that we know, its panels rolled from ultra-thin, 20-gauge aluminium-magnesium alloy.

All this added up to a machine that Stirling Moss described as 'possibly the best handling sports-racing car of all time'.

We couldn't drive the Le Mans winner for this feature, but the car that finished 2nd in '59 is hardly a let-down. It's in very fine fettle thanks to specialist Chris Woodgate, and it's a fascinating piece of Aston Martin history, having started life as the one and only DBR3.

Let me explain. In 1958, the race team was trying Tadek Marek's new DB4 engine, a 3.7-litre straight-six. It was installed in a bigger version of the DBR1, known as the DBR2. But the team also decided to test a stroked-down, 3-litre iteration with six single-choke Webers. The modified engine was fitted in a DBR1 with DB4-style front suspension, and this car was dubbed the DBR3.

Moss took it to Silverstone in May 1958 for its only race. It ran well enough but was out-gunned by the DBR2s, and the engine was judged to be no improvement on the RB6. Experiment over, the DBR3 returned to the Feltham factory, and under the guidance of Rex Woodgate (Yep, Chris's father) the car was rebuilt to DBR1 spec.

TO BE INVITED TO DRIVE A DBR1 is a real privilege – because of the model's place in Aston Martin lore, because of its beauty, and, of course, because of its enormous monetary value in today's market. The Le Mans winner, chassis DBR1/2, changed hands for £20m a decade ago, and DBR1/1 sold for $22.55m in 2017. Carefully does it, then…

There are doors to aid entry when you're not in a hurry, but hopping straight in is easy and fun with the car so low to the ground. The seats are generous buckets covered in tweedy-looking nylon, and very comfortable, as they needed to be for endurance racing.

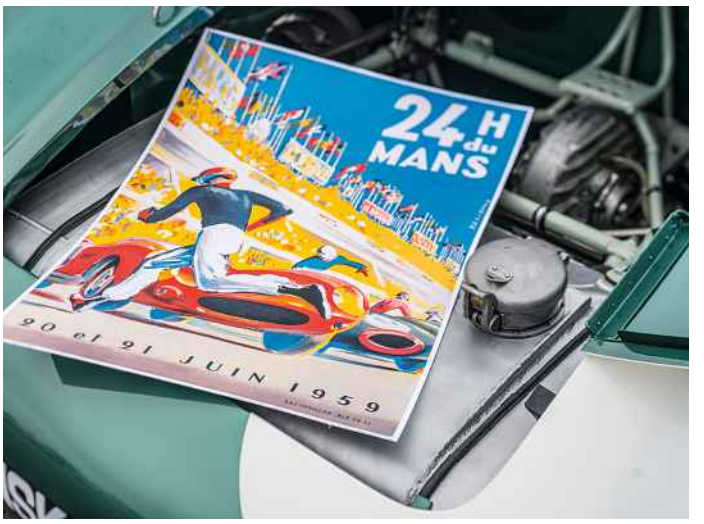
Looking over the 'screen, which is really just a wind deflector, the wings extend gracefully to the headlights, while the bonnet, secured with flush-fitting Hawker Hunter panel latches, blends in perfectly. Right of your backside is the oil tank for the gearbox, and in front of that the engine oil tank. Between your legs is a fuel supply cock. Next to your left thigh is the small gate for the 8in gearlever. And directly ahead of the steering wheel is a large Jaeger chronometric tachometer that is flanked by all the other essential gauges and a number of Rotax aircraft switches.

'The throw of the gearlever is short, and so direct that it feels as if you're reaching straight into the gearbox'

Starting the car requires a careful sequence of actions. Fuel pumps on to prime the priceless, sand-cast racing Webers. Then fuel pumps off, declutch to save spinning up the gearbox, and press the starter button until oil pressure starts to register; even on the starter, 60lb will be seen. Keep it turning over, then flick the pump/ignition toggle and the engine fires. This method removes the chance of kick-back and then carb spit-back with its potential fire risk.

Once it's running, the straight-six needs a little bit of gentle coaxing before temperature is achieved, but soon the oil and water temp gauges are in their comfort zone. With its solid-mounted engine, the whole car is now alive.

In period, some drivers complained that the gearshift was obstinate, but DBR1/4's 'box seems cooperative enough to me. The throw is short – like the one you might find in a single-seater – and so direct that it feels as if you're reaching straight into the gearbox, which is only a few inches behind you. No click, no noise, just positively into gear. The first few times I double-check that it's in, yet every time it is where it should be. The clutch is a mild competition type, so not for the midwife, but nor is it snatchy.



Clockwise, from top left
The all-business gearlever and the equally purposeful 225bhp RB6 engine; artist Michel Beligond produced the famous poster artwork for the 1959 24 Hours of Le Mans; the bucket in which Frère and Trintignant once sat, and a copy of the book on team management written by Aston Martin racing boss John Wyer.

1958 Aston Martin DBR1

Engine 2992cc straight-six, DOHC, triple Weber 50DCO3 carburettors **Power** 255bhp @ 6500rpm **Torque** 252lb ft @ 6000rpm **Transmission** Five-speed manual, rear-wheel drive, limited-slip differential **Steering** Rack and pinion **Suspension** Front: trailing links, transverse torsion bars, lever-arm dampers. Rear: de Dion tube, trailing links, Watt's linkage, longitudinal torsion bars, telescopic dampers **Brakes** Discs **Weight** 801kg **Top speed** 150-170mph, depending on gearing

Out onto the Castle Combe track and there's no racing-car angst; all is calm. Feel the heat in the oil tanks alongside you and enjoy the nice oily waft of warm air coming up from the engine bay… Now, ease open the throttle and another side of the car emerges. It's pulling hard, piling on speed with ease, the tachometer needle marching around the dial, and the next corner is coming up a little too fast – but with warmth in the brakes, the unassisted calipers arrest the DBR1 with ample power and bags of feel through the drilled pedal.

The lightness of the car shines through in the corners, which can be taken at speed thanks to almost other-worldly chassis control. With the rear axle almost directly under you, there's a feeling of intimate connection here. If it's about to get out of shape, the DBR1 tells you early and makes controlling the slide an instinctive thing. The steering is astonishing, tight and high-geared; the driver just has to *think* the change of direction and the whole car turns as one. No delay, no slop, and no pendulum effect. If only every car felt like this. And while there's little roll, the suspension has no harshness.

This is a car in which you immediately feel at home, and it was that way from the outset – few changes had to be made after testing, which is testament to Ted Cutting's brilliance. And right now I can't help longing for the Mulsanne Straight, to feel the car stretch out and sail through the Sarthe woods…

ONLY FIVE DBR1s were built between 1956 and 1958. Chassis 1-4 were the works cars and chassis 5 was built for the Whitehead brothers – privateers who had raced Aston Martins with success for many years.

Because it initially spent time as DBR3/1, DBR1/4 made its racing debut late and was the least-used of the four team cars, but when it did race, it shone brightly for David Brown. Its first competitive outing was, in fact, at the 1959 24 Hours of Le Mans, where it was piloted by Paul Frère and Maurice Trintignant, wonderful drivers both. 'Trint', a veteran of F1 with a pair of victories in the Monaco Grand Prix to his name, had won the 1954 24 Hours. Frère had finished 2nd in the deadly 1955 24 Hours, sharing a DB3S with Peter Collins, and would go one better in 1960, driving for Ferrari.

‘Moss was forced to retire after about a quarter of the race, but he set a furious pace for as long as his car lasted’

The 1959 Le Mans regulations demanded more luggage room, so the rear panel of the DBR1s was made 3in higher, while a clear plastic tonneau covered the passenger seat to improve aerodynamics. To the same end, the front ’arches covered more of the wheels than they had done previously, and the rear wheels had removable spats. The real-world effect of all this was that the DBR1 hit 175mph on the Mulsanne Straight.

As well as DBR1/4, Aston Martin sent chassis 2 and 3 into battle. The former was entrusted to Carroll Shelby and Roy Salvadori, and the latter, fitted with a hotter engine, was given to Stirling Moss and Jack Fairman. Moss was forced to retire after about a quarter of the race, but he set a furious pace for as long as his car lasted, and the Ferraris tried to match it, which would prove to be their undoing.

Despite a tyre problem in the night, DBR1/2 took the lead when the last Ferrari expired, and held it to the flag. DBR1/4 ran with no issues apart from the exhaust under the floor burning Trintignant’s feet, and it finished in 2nd place, just a lap behind the winning Aston.

Trintignant and Frère were back in DBR1/4 for September’s Goodwood Tourist Trophy race, finishing 4th and helping Aston Martin to secure the World Sports Car Championship. And the car returned to Le Mans in 1961, with Roy Salvadori and Tony Maggs driving it under the Essex Racing Stable banner, though it was a works-supported effort. This time, however, DBR1/4 retired on the Sunday morning with a fuel leak.

After its front-line racing career, the car lived at the National Motor Museum for a time. In 1973, the factory ran it at Le Mans again, in a Historic race, but the following year it was sold when the coffers at Aston Martin were looking a little empty. Today it resides with several other fine Astons in Oxfordshire, but there is no doubt which car is king of the garage.

But then what other Aston Martin *could* rival the greatness of the DBR1? It’s even road-legal! Send in your nominations if you like, but I will take a lot of convincing. Evo

THANKS TO *Adrian Beecroft, Chris Woodgate (rexjwoodgateac.com), Angus Archer of AMS (amsporsche.com), and to all at Castle Combe (castlecombecircuit.co.uk).*

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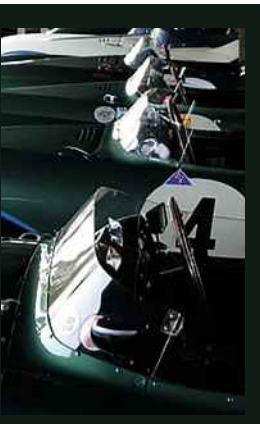

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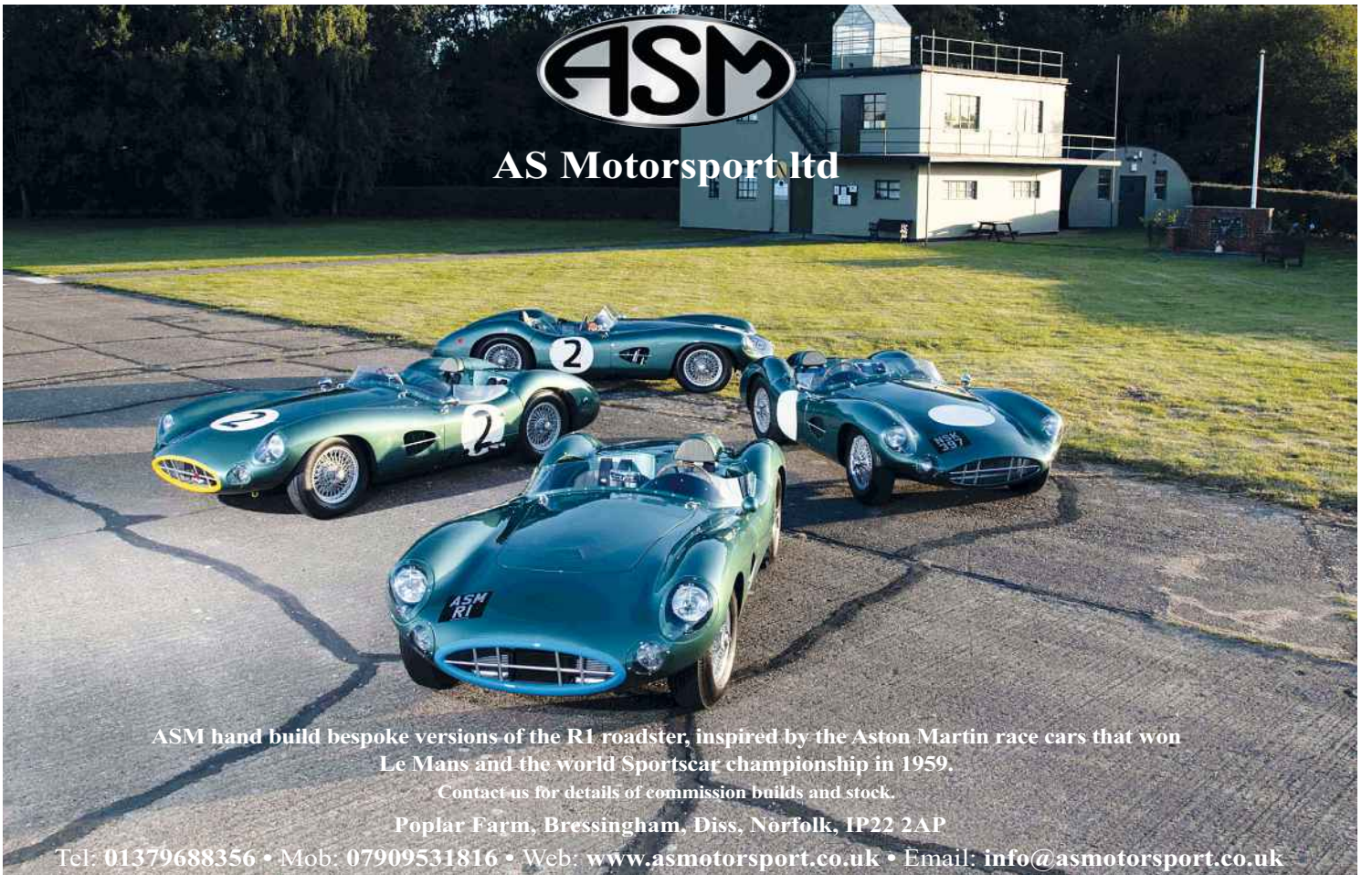

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'You always wanted to drive the Aston'

Roy Salvadori and Carroll Shelby, the drivers who steered DBR1/2 to victory at Le Mans, both died in 2012, but **Paul Chudecki** was once lucky enough to sit down with the pair and reminisce about their historic win

Images Alamy

The debonair Briton Roy Salvadori and the laid-back Texan Carroll Shelby were a perfect pairing for the 1959 24 Hours of Le Mans. Both were excellent racers with similar driving styles; both men were 6ft 2½in tall and of similar build, a major time-saver during driver changeovers; and, just as importantly, they were great pals on and off the track.

'Sebring 1956 in an Aston DB3S was when we drove together for the first time,' recalls Roy. 'We finished 4th and won the class – with two gears left.' Carroll pauses for a moment, then agrees. 'I find myself trying to remember things and I get corrected all the time!' The memories soon come flooding back, though: 'Another time Roy and I drove together there, the gearlever fell off! I think it was '58. The shifter broke off and it was a very poor weld, not like Aston at all. We had a wonderful group of guys putting it back together.'

'The crew gave you a lot of confidence,' adds Roy, 'and I felt very confident about [racing boss] John Wyer. He could tell where you were losing time or gaining.' Carroll interjects: 'That's why I turned down a drive with Ferrari three times; I felt more confident driving for John Wyer – or David Brown, I should say.'

It would be fair to say the pair had slightly less faith in the DBR1's gearbox. 'The 'box was a bastard!' laughs Roy. 'It let us down time and again. The only time it behaved was at Le Mans! Sometimes it would lock in gear and you just couldn't get it out.'

To suggest the two were *worried* about the gearbox ahead of the race would be untrue, though. Roy remembers doing only one day of practice at Le Mans, and that he and Carroll mostly played gin rummy. 'John checked and we'd done seven laps each. We just said the car was okay!'

They felt they could comfortably achieve their target lap time in the race – 4min 20sec. 'There's no point in trying to go faster than necessary when you've got to last the race,' says Roy. 'We knew Stirling Moss was the hare: he had the four-bearing engine and the torque, and obviously it was a weaker engine. We had the seven-bearing crankshafts and were asked to keep the revs down.'

This Roy did as he started the race, but he still found himself lapping comfortably four to five seconds quicker than the target time, and at the end of the second hour he lay in 5th place. Carroll kept up the pace despite suffering from a stomach upset caused by a bad salad, and by lap 50, DBR1/2 was 3min 26sec ahead of the team schedule. Stirling Moss in DBR1/3, meanwhile, was doing a fine job of worrying Ferrari and its three works 250 Testa Rossas. The first of the three to succumb in an attempt to keep up with him was the car of Cliff Allison and Hermano da Silva Ramos, its 3-litre V12 engine overheating.

It was just before 11pm that Roy took the lead from the Jean Behra/Dan Gurney works Testa Rossa, which was also overheating and

‘I’ve never known heat like it; my toenails went green, and they still don’t grow properly!’

struggling for oil pressure. Moss’s car, always considered semi-expendable, had retired from the lead on lap 71 with a broken inlet valve, its job hopefully done.

Gurney retired from 4th place at 1:29am, after 130 laps, but the third works Testa Rossa, shared by Olivier Gendebien and Phil Hill, remained a threat. On lap 161, Roy was at the wheel of DBR1/2 when he experienced a severe vibration from the rear of the car.

‘I thought it was the gearbox. Reg [Parnell, team manager in the pits] looked the car over and told me to go out for four laps and drive slowly. I thought it was going to explode! When I came in they still couldn’t see anything wrong, and then a mechanic found a piece of metal stripped from the tyre.’

By the time the car was sorted and Carroll was away, the Gendebien/Hill Ferrari had built up a lead that looked pretty unassailable. ‘Seldom in a motor race,’ Moss later wrote in his book *Le Mans ’59*, ‘have I seen so many faces so sad as there were in the Aston Martin pit at 4:30am that Sunday morning.’

Thirty minutes later, the Ferrari was still four laps ahead, but by 8am the gap had been cut in half: Gendebien and Hill had lost time during a stop, and Roy had found he could reduce his lap times by one to four seconds through later braking and still conserve the DBR1. ‘Very late braking points,’ he notes, ‘that I wouldn’t have thought possible.’

‘The DBR1 was slower on the straight than the Ferrari,’ says Carroll, ‘but always superior in its handling, and superior to even the [Jaguar] D-type on the really kinky bits of the course. And you felt safe in the car – you always wanted to drive the Aston.’

At 11am the Ferrari, now just over a lap up, suddenly slowed. It pitted on lap 263 and again on 270, and the following lap it was done for. During the cool of night it had run well, but with the sun now up and the mercury climbing, the car had overheated, just as its stablemates had done. There were just four hours to go and the Salvadori/Shelby Aston led the race, 20 laps clear of any threat from a rival marque.

The retirement of that last works Ferrari allowed Roy and Carroll to reduce their pace and hope that the car held together for just a little longer. ‘And then John [Wyer] slowed Trintignant and Frère so that we could cruise,’ explains Carroll, referring to DBR1/4, which was lying in 2nd place. Roy and Carroll’s advantage was so great that they could afford to lap at up to a leisurely 4min 50sec.

‘But we still could have wrecked the car if someone had dropped a bit of oil,’ says Carroll. ‘At the end I couldn’t believe that we’d done it, because I’d dreamed of it for so long.’

‘I was so bloody tired at the end,’ recalls Roy, whose feet had been badly burned by the exhaust under the floor of the car. ‘That was a terrible heat. I’ve never known anything like it; my toenails went green, and they still don’t grow properly!

‘I was a little upset with Reg,’ Roy continues. He said I should have known what had happened [with the tyre], and was very critical, but we’d never had trouble with the Avon tyres. Reg started shouting and I said a few things back. But John came and sorted that out.’

‘Aston Martin was like a family,’ says Carroll, ‘and there was never anyone better to drive for than David Brown. I never knew him to interfere with John or with team tactics. The only time I ever saw him really pissed was after Le Mans, in fact: there was always oil inside the car and it got on his cashmere coat!’ End

Left and right
The 1959 Le Mans team reunited at Laguna Seca in 1989. From left: Paul Frère, Maurice Trintignant, Carroll Shelby, Roy Salvadori, David Brown, Stirling Moss and Jack Fairman; Shelby and Salvadori take a spin together 30 years after winning the 24 Hours.

JUN HARADA: A LE MANS JOURNEY

Harada-san is looking at a historic F2 race return in 2023

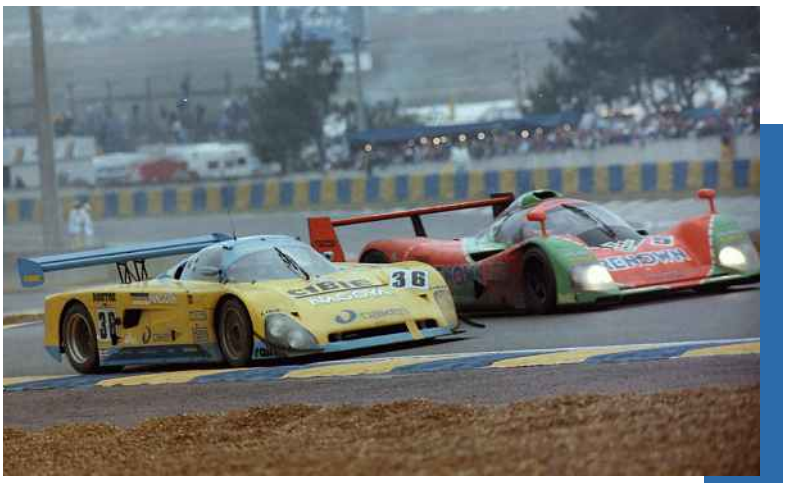
In the early 1990s, Japanese racing driver Jun Harada achieved his dream of racing at the 24 Hours of Le Mans, although his three outings at the Circuit de la Sarthe weren't without drama

It all started at the 1976 Japanese Grand Prix. After watching in person at the age of 10 the rain-soaked championship decider between Niki Lauda and James Hunt, Tokyo-born Jun Harada knew he had to race. By the age of 12 Harada had started his motorsport journey in karts, and in 1979, another race visit - this time on the other side of the world - gave him his eventual racing goal.

The 24 Hours of Le Mans that year proved one of the most influential moments in the man's life - after seeing the Porsche 936s of Jackey Ickx, Brian Redman, Bob Wolleck and Hurley Haywood hammering around La Sarthe, Harada-san's ultimate aim in life became clear.

At the peak of a journey that led him through various categories, including touring cars and Formula 3, Harada-san achieved his dream, not just racing the 24 Hours of Le Mans, but doing so for three consecutive years in the 1990s.

His and the Harada Racing Company's outings weren't without their trials and tribulations, of course. Le Mans is one of the toughest endurance races in history, and proceedings don't always go according to plan. Yet in the process, Harada and H.R.C performed respectably while breaking new ground.



1992

The 60th running of the 24 Hours of Le Mans saw Harada-san drive a Group C Spice SE89C, powered by a Cosworth DFZ 3.5-litre V8 and entered by Chamberlain Engineering. The outfit featured the experienced H.R.C boss Harada-san as lead driver, joined by Tomiko Yoshikawa, who became the first female Japanese driver to compete at Le Mans, and Kenta Shimamura.

The team started in 24th and was running well, only to suffer a nighttime crash in the rain. It was a costly incident - recovery took some time, and the car spent some four hours in the pits. However, the team managed to repair the car and send it back out, finishing in 15th place out of 30 entrants.

1993

One particular moment seared itself into Jun Harada's memory during his 1979 Le Mans visit as a spectator – the chattering wastegate noise of a Porsche 935's twin-turbocharged flat-six at Mulsanne corner. It's only fitting, then, that Harada-san would eventually find himself at La Sarthe in a Porsche.

For 1993, Harada-san joined Konrad Motorsport to drive a Porsche 911 RS alongside Austrian team boss Franz Konrad and Brazilian Antônio Hermann de Azevedo. Starting from 42nd, the car ran well throughout the race and at a strong pace, and relatively trouble-free (for Le Mans, at least). A spin and a puncture on Sunday morning were the main doses of drama to note.

In the end, the Konrad Motorsport 911 completed 293 laps, finishing 19th overall from 50 starters, and fifth in its category. The result was a milestone, with Jun Harada becoming the youngest Japanese driver to ever finish Le Mans at the wheel of a Porsche 911.

1994

The following year, Harada-san was back behind the wheel of a Porsche at Le Mans; this time an H.R.C-entered 962C running under the 'Team Nippon' banner. Alongside him was Japanese singer (plus eventual motorsport team boss himself) Masahiko Kondo, and once again Tomiko Yoshikawa.

The outfit started 13th, only to falter after electrical issues forced the 962C to spend three hours in the pits. Team Nippon managed to recover to its starting position, only for a cracked cylinder head to send the car back to the pit garage for another lengthy spell. All was not lost, as the mechanics managed to get the Porsche back out on track just in time to take the chequered flag with mere minutes to spare.

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NON-STARTER

Lotus boss Colin Chapman reckoned this car could have won Le Mans in 1960, but it didn't make the start. The late Tony Dron and Sir John Whitmore met up at Goodwood to revisit a story of wasted potential

Photography Tom Wood

Right
The much-missed Sir John Whitmore, reunited with the one-off Lotus that he was supposed to drive in the 1960 24 Hours of Le Mans.

Innes Ireland and John Whitmore were up late after qualifying at Le Mans in 1960, ruminating on the grim events of the past few days. Meanwhile, in the local hospital, Jonathan Sieff was hovering between this world and the next following a mysterious accident on the Mulsanne Straight. Sieff's 1.2-litre Lotus Elite had left the circuit and had been cut in half by an electricity pylon.

Innes and John were down to drive a much faster Lotus, a special version of the Elite equipped with a Formula 1-derived, 2.0-litre Coventry Climax FPF engine. This one-off car, known as the LX, was being run by Team Lotus Engineering, but its development had been financed by Sieff and by Michael Taylor. A week before Le Mans, the latter had suffered a career-ending accident during practice at the Belgian Grand Prix. In the race itself, Lotus factory driver Alan Stacey – who was supposed to share the LX with Innes at Le Mans – had died in a fiery wreck.

Everything the young John Whitmore knew about top-class racing had been learned from Stacey, but now Stacey was gone and John was expected to fill his mentor's shoes, and his seat in the LX. It had arrived under the most awful of circumstances, but there was an opportunity here: Lotus boss Colin Chapman reckon the LX could win the world's most famous 24-hour race outright.

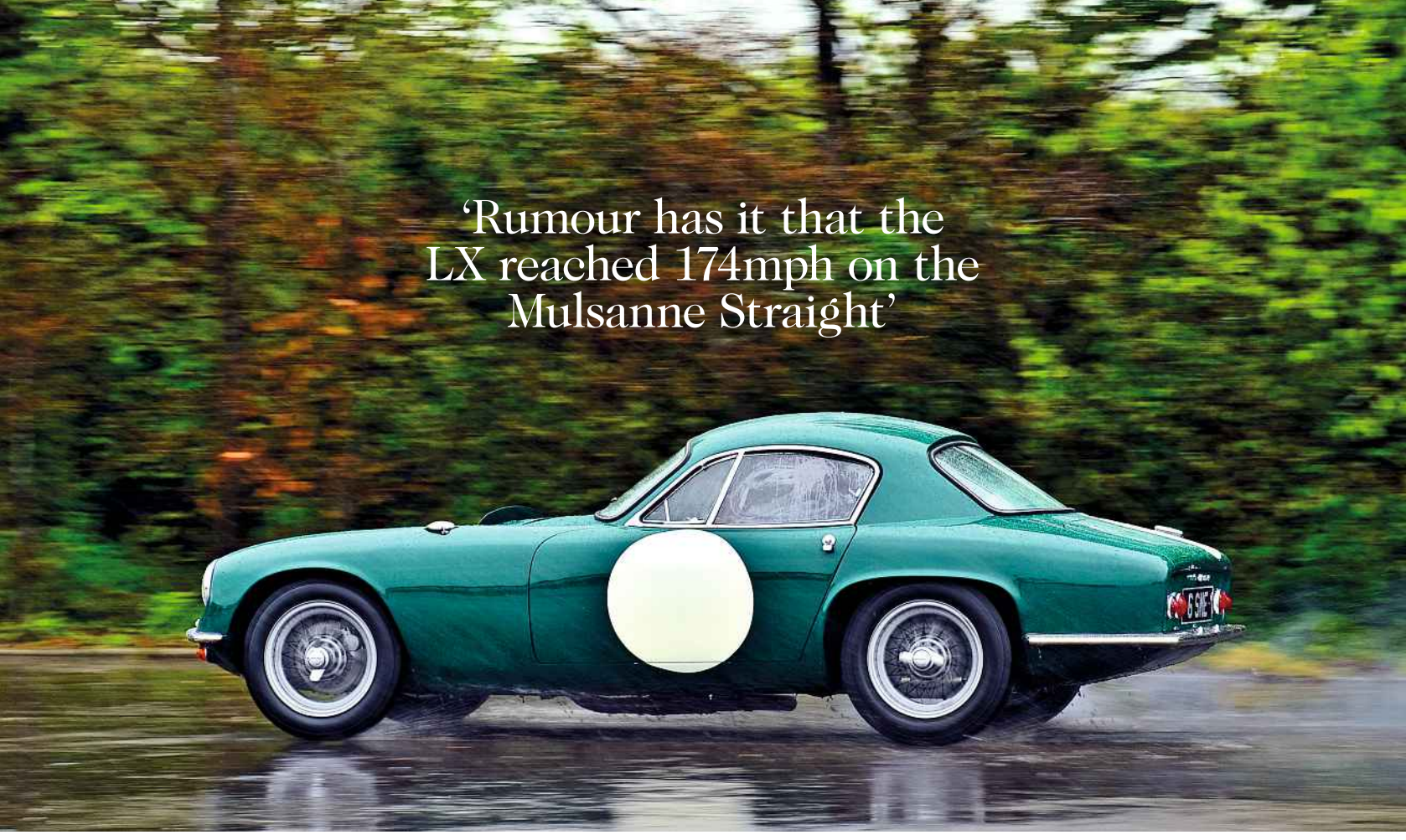
Chapman's optimism had not rubbed off on Innes, who was undestandably spooked by the misfortunes that had befallen his colleagues, and by his first outing in the LX. A single lap in the car had convinced him that it was too softly sprung and nose-heavy. It weighed in at just 712kg in scrutineering, 318kg front, 394kg rear, so it was tail-heavy, if anything. And the handling issues were down to an underinflated tyre. But Innes could be a superstitious sort, and he had already lost all confidence in the Lotus.

As he sat nursing a drink in the Auberge Saint Nicholas, Lotus's home-from-home in Le Mans, he suddenly turned to John and said: 'I want to borrow your car.' He explained that if he left Le Mans that night, crossed the Channel and withdrew to his house in Wales, that would put him out of the race and bring this bad spell to an end. John handed Innes the keys to his Mini van and watched him disappear.

It was impossible at that stage to appoint another replacement driver for the LX. Its entry had to be withdrawn, and John was left high and dry, relegated to the status of a spectator needing to hitch a lift home. What would have happened if Innes had stuck around? Could the little Lotus really have won Le Mans?

Rumour has it that in 1960 the LX reached 174mph on the Mulsanne Straight, but with no official source for that number, we can't take it seriously. John recalls that the revcounter reading in 1960 equated to 172mph, but such calculations are unreliable; even if the tachometer is accurate, tiny movements of the needle represent big changes in speed

Clockwise from right
The Lotus LX at a very wet Goodwood Circuit; and at scrutineering at Le Mans in 1960; the sparse interior is currently pretty much off-limits to larger drivers thanks to the fixed seat, which has been moved right forward; with its F1-derived 2-litre engine, the LX was a very different proposition to a standard 1.2-litre Elite; the speedo goes round to 140mph, but the car's top speed at Le Mans was probably more like 155-160mph.



‘Rumour has it that the LX reached 174mph on the Mulsanne Straight’

with Le Mans gearing. One person involved in the LX project has claimed the car was ‘approaching 200mph’, which is obviously impossible. He added that it gave Roy Salvadori’s Aston Martin DBR1 a tow along the Mulsanne Straight in practice, and that, on the other hand, is perfectly believable.

For the record, the actual speeds achieved by the leading cars at the fastest point of the course were measured during the race by an early version of one of Maurice Gatsonides’s speed cameras, and reported in *Motor* magazine on 20 July 1960 (see table on right).

Those figures might raise eyebrows among those who have been taken in by tall tales of 24 Hours past, but they are the facts as carefully reported at the time by the magazine’s technical contributor, Laurence Pomeroy.

Even if the top speeds claimed for the LX are nonsense, Chapman’s assessment of the car’s potential could well have been right. Thanks to a rule change, traditional big-banger open sports-racing cars were aerodynamically hampered at Le Mans in 1960. The regulations now called for a minimum distance of 80cm between the top of the windscreen and the lowest point of the seat cushion. Previously, only a minimum height for the windscreen had been specified, allowing clever designers such as Brian Lister to position the bottom of the screen behind and well below the top of the engine.

The change made the race organisers very unpopular in some quarters, but it was a worthy attempt to retain a genuine link between the machines on the grid and real-world production cars.

Of the traditional front-runners, Maserati was the only manufacturer to demonstrate any real nous in addressing the challenge presented by the new rule: the organisers had issued no edict about the minimum angle of the windscreen, so Maserati’s Giulio Alfieri designed a 5ft-long screen that rose gently from a point between the front wheelarches, keeping the frontal area of the car small. The Tipo 61 ‘Streamliner’ was rapid, but unfortunately it conked out during the night.

Other cars were fitted with relatively bluff screens, and found their top speed reduced by about 15mph, typically. The DBR1s, for example were doing 165mph in 1959, but could hit only 149mph in 1960. If the LX could manage a true 155-160mph, as I suspect was the case, it would have been right on the pace.

TOP SPEEDS AT LE MANS, 1960

Maserati Tipo 61 ‘Streamliner’	**170mph**
Ferrari 250 Testa Rossa	**162mph**
Jaguar D-type	**158mph**
Jaguar E2A	**153mph**
Chevrolet Corvette	**151mph**
Aston Martin DBR1	**149mph**
Maserati Tipo 61	**149mph**
Porsche 718 RS60	**145mph**
Austin-Healey 3000	**129mph**
Triumph TRS	**129mph**
Lotus Elite (standard 1.2-litre car)	**129mph**

The LX was likely quick enough to contend, then, and there's reason to believe it would have lasted the distance, too. It was built in a rush, like everything at Lotus in those days, but still a great deal of effort went into preparing it to slay the giants of Le Mans.

The engine bay was strengthened to cope with the forces exerted by the bigger engine, and the gearbox and final drive were designed to take the extra torque. The car's fuel capacity was increased, too: the tank at the rear held 12.8 Imperial gallons (58l) according to the scrutineers at Le Mans, and an extra 9-gallon tank was built into the nearside front wing.

Suspension, brakes and steering were all borrowed from the Lotus 18 F1 car, but Chapman took care to maintain the look of a standard Elite as far as he could. Only the two NACA ducts on the bonnet and the bigger wheels (5.00 x 15 front; 6.00 x 15 rear) gave the LX away as something more potent than a standard Elite. The car was never road-registered with the 2.0-litre engine, but went to Le Mans as 6 SME – the plates apparently borrowed from another car.

While the car didn't make the start of the 1960 24 Hours, it seemed that it would have another chance at glory when it was sold to Team Elite, which planned to run it at Le Mans in 1961. Unfortunately it was damaged in a race at Rufforth Circuit in April of that year, and then Team Elite ran into serious money troubles.

The LX was stripped down and the bodyshell was rebuilt as a standard Elite club racer with the smaller Climax FWE engine. It suffered the usual tribulations of accidents, repairs and alterations until the shell was bought in 1995 by American enthusiast Dr Charles Levy.

Levy's first task was to establish beyond doubt that it really was the LX Le Mans car. He approached Ron Hickman, chief road car designer at Lotus when the LX was built. Ron spent a couple of days examining the car and was able to confirm, 'with 100% certainty', that it was 'the original Le Mans 2.0-litre Elite'.

The car was then restored to its original specification, with special parts expertly fabricated from scratch where original components could not be found. The work, carried out by Kelvin Jones and costing close to £100,000, was only deemed complete after three successful track tests.

John Whitmore was reunited with the restored LX in 1998, and drove it at that year's Goodwood Festival of Speed. Since then, though, the car's Formula Junior seat has been fixed in a very high, forward position to suit another driver, making it impossible for him to treat us to a few hot laps on the day of our shoot.

I did just about manage to squeeze into the car, but it would have been madness to try seriously quick driving. I could hardly move, it was streaming wet, and I couldn't see much because the wiper wasn't working. Even so, the might of the FPF engine was obvious, and after buzzing around Goodwood Circuit for a while, I, like Colin Chapman and John, was left wondering what might have been. End

THANKS TO Bonhams (bonhams.com).

1960 Lotus LX
Engine 1964cc four-cylinder, DOHC, twin Weber 40DC carburettors **Power** 176bhp @ 6500rpm **Transmission** Four-speed manual, rear-wheel drive **Steering** Rack and pinion **Suspension** Front: wishbones, coil springs, adjustable telescopic dampers. Rear: Chapman struts, coil springs, adjustable telescopic dampers **Brakes** Discs **Weight** 712kg **Top speed** 150mph-plus

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1969 Lola T70 Mk 3B - Chevrolet

Chassis SL70/143 was one of the 16 B-spec. T70 MK3 GTs constructed by Lola.Supplied new to Swedish Formula 1 driver, Jo Bonnier, chassis 143 replaced chassis 101, an old 1967 example that Ecurie Bonnier had campaigned throughout 1968. The new car was painted the Bonnier team colours of yellow with a broad white centre stripe and single red pinstripe and contested World, British and Swedish sportscar championship events in 1969 plus a smattering of big independent events as well. Highlights of its inaugural campaign included fifth overall and first in class at the Spa 1000km World Championship race, a brace of seconds in the British Sportscar Championship and outright victory in the Paris GP at Montlhery. Regularly driven by Bonnier, Reine Wissel, Ronnie Peterson and on occasion Herbert Muller. Well documented history file and restored by Colin Bennett this car is a fantastic piece of sportscar history that is invited to and eligible for the premier historic motorsport events.

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LONG SHOT

Ferrari's final win at Le Mans was the most improbable in memory, and even now the events of the race remain cloaked in intrigue

Words Andrew Frankel **Photography** GP Library and Godwin-Stubbert Archive

The 24 Hours of Le Mans is a fickle race; just ask the poor Toyota drivers whose car failed one lap from glory in 2016, gifting victory to Porsche. But I don't think there was ever a less likely winner than in 1965. Not only was the Ferrari that finished on top that year hopelessly uncompetitive relative to the quickest cars in the race, its drivers didn't even want to be there. What's more, there is evidence to suggest that there was an attempt to torpedo the car by none other than Enzo Ferrari. Yes, Ferrari's ninth win at Le Mans was far and away the strangest of the lot.

The only thing anyone got right before the race began was that Ford or Ferrari would triumph, and the smart money was on the Americans. Ford had come to Le Mans the year before with brand new GT40s and the sole aim of beating Ferrari, only to see the cars retire one by one with mechanical issues, but that was very much a practice run. In 1965 Ford returned with six GT40s, four of them fitted with a 4.7-litre V8 – an engine bigger than any Ferrari had at its disposal. The other two looked more intimidating still: under the engine cover of each lurked a V8 displacing a whopping 7 litres. These formidable MkII cars would be piloted by Chris Amon, Phil Hill, Bruce McLaren and Ken Miles, first-rate racers all.

Ferrari did at least have a numerical advantage with ten prototypes entered, but just three were factory-run examples of its latest P2 sports racer, and of the seven privately entered cars, five were 250 LMs – which were only classed as prototypes because Ferrari had failed to homologate the LM as a replacement for the 250 GTO in the GT class. With single-cam 3.3-litre engines, they couldn't touch the purpose-built, 4-litre twin-cam P2 prototypes, let alone the GT40s.

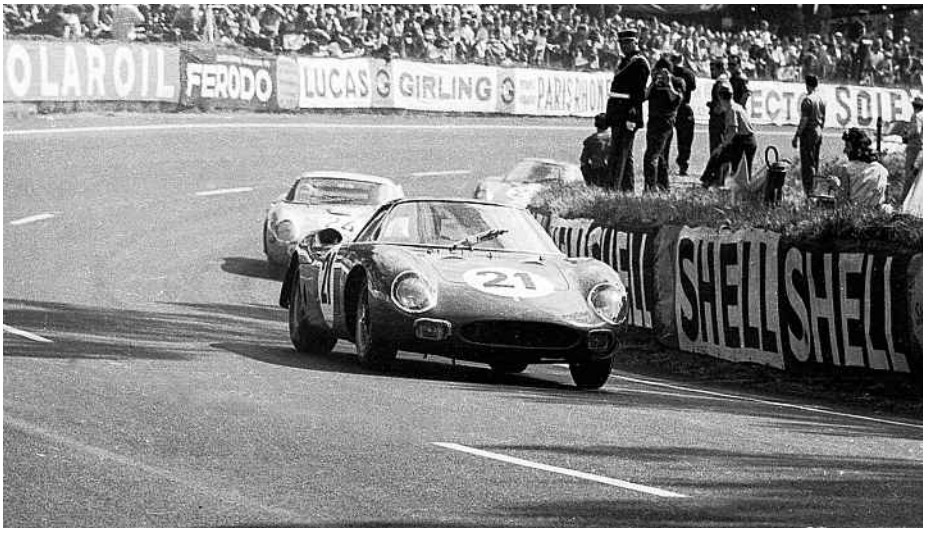
Aside from one entire practice session being washed away by a freak rainstorm, the build-up to the race was entirely predictable. On pole sat the Amon/Hill Ford, a terrifying five seconds quicker than any other car. Next best was the P2 of John Surtees and Ludovico Scarfiotti, with a further three Fords rounding out the top five. At this stage few would have been paying attention to the LM entered by Ferrari's North America importer, languishing down in 11th place, a dozen seconds off the pace. If that sounds only a bit slow, consider that when multiplied over the distance of the race it equates to well over an hour of lost time.

The LM, too, was being pedalled by a couple of Formula 1 drivers, but these were not men of whom great things were expected; the career of the first was all but over, while that of the second had barely begun. We shall return to them shortly.

So the race began and to nobody's surprise the two 7-litre Fords just disappeared into the distance. But almost at once the Ford challenge started to unstitch itself, to the undisguised delight of the team from Maranello. The big Fords were phenomenally thirsty and their competitive advantage was blunted by the need to stop more often for fuel. Far more seriously, Ford had failed to anticipate the strain that the torque of the enormous engine would put on the transmission, and the 7-litre cars soon started to have gear selection issues. To make matters worse, the smaller-engined GT40s were struggling with various maladies, too.

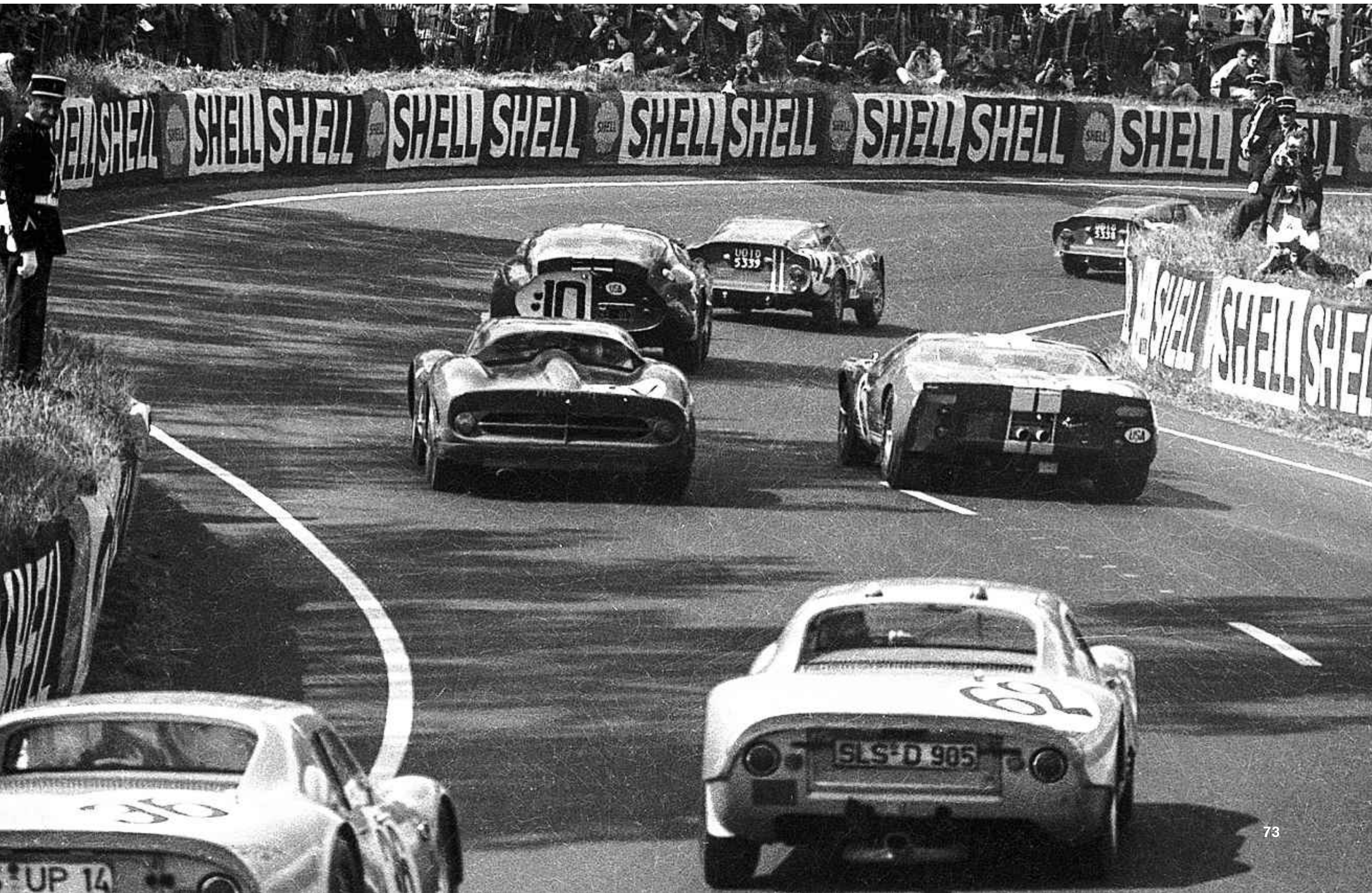
After three hours, Ferraris held the top five places; after seven hours not a single GT40 was still running. For Ford it was a total humiliation. For Ferrari's factory entries the race was already theirs to lose. And lose it they duly did.

'THE RACE BEGAN AND THE TWO 7-LITRE FORDS JUST DISAPPEARED INTO THE DISTANCE'



Clockwise from top right
The Ferrari P2s looked good basking in the sunshine before the start, but just one would survive the rigours of the race; Ford's GT40s fared even worse. The Müller/Bucknam car shown ran for only three hours, and after seven hours all six GT40s were out; as retirements blew the race open, the 250 LM of Masten Gregory and Jochen Rindt suddenly became a contender.


FERRARI
LUCAS
PARIS-RHONE
graphite
40
22
DUNLOP


SHELL
10
SLS-D 905
62

It is easy to forget that Ferraris frequently won races – long-distance sports car races in particular – thanks to their durability rather than their raw speed. We tend to think of thoroughbred Italian competition cars as highly strung, temperamental machines, but Ferraris were generally strong and well prepared. As often as not, they won because they kept going when others faltered.

Not this time, though. One of the first to show signs of weakness was the unfancied 250 LM mentioned earlier. It wasn't even the North American Racing Team's lead entry; that was a 4.4-litre P2 crewed by Nino Vaccarella and the great Pedro Rodríguez. The LM came limping into the pits in the early evening with only six of its 12 cylinders firing. Jochen Rindt, who had not yet completed his first full season in F1, was waiting to take over the driving from Masten Gregory, the American known as the 'Kansas City Flash' in his 1950s pomp. The problem was nothing more than a dodgy condenser, but it took half an hour just to diagnose the fault, and by the time Rindt fired the LM back up the pitlane towards the Dunlop Bridge, they were absolutely nowhere.

By some accounts, neither Rindt nor Gregory wanted to be at Le Mans that weekend, least of all in a car with no chance of winning, and it seems those lost 30 minutes were the last straw. As they waited for the car to be fixed, it is said they agreed to drive flat-out because that would both alleviate their boredom and greatly increase the likelihood of an early night.

Meanwhile, far away at the sharp end of the race, other Ferraris started to fail. The two cars entered by the British Maranello Concessionaires team retired during the night, and then the factory effort came off the rails in a hurry. One after another the cars' brake discs, which had radial ventilation slots, started to crack and perish.

All three works cars along with the NART P2 were afflicted and the drivers were instructed to use the brakes as little as possible (tricky when the end of Mulsanne required braking from over 200mph to perhaps as little as 40mph), while all spare hands were sent off to find spares or scavenge discs from retired cars. It was all to no avail. Drive a car faster than it cares to go in an attempt to make up lost time, while also using the transmission to brake in an attempt to spare the discs, and your race is very likely to end prematurely. Gearbox problems knocked out the two faster factory P2s, and engine failure did for the last of them. Of all the true prototypes in the race from Ford and Ferrari – 11 cars in total – just one finished, the NART P2 staggering home in seventh place and 28 laps behind the winners.

Now, with the 24 Hours only half done, a new race began, but not before a curious episode involving our hard-charging NART LM. All official records show its drivers to be Rindt and Gregory, and they are not wrong, but they may not be entirely right either. It has been claimed that when the famously short-sighted Gregory pitted unexpectedly in the small hours complaining of having trouble seeing in the dark, it was not Rindt who replaced him, but Ed Hugus. Why Rindt was unavailable is not clear; some accounts say he'd taken himself off for a sleep, not expecting to be needed. If Hugus did drive, he did well enough during his stint to keep the Ferrari in the hunt.

It was Hugus himself who made the claim, but he was by all accounts one of the good guys and a longtime NART driver. Moreover, in the endurance racing bible *Time and Two Seats*, János Wimpffen records Hugus' stint as fact. On the World Sports Racing Prototypes database, all three drivers are listed.

On the other hand, Doug Nye, probably the leading authority on Ferrari's racing history, considers the story 'total garbage – something the guy said many years later and then subsequently could not bring himself to retreat from'. Coco Chinetti, son of NART boss Luigi, felt similarly, but conceded he couldn't rule out Hugus's version of events: 'He may have driven the car but I find it highly unlikely.'

Whatever the truth, as the sun rose the NART LM found itself in second, and with Rindt back at the wheel it was travelling far faster than the privately entered yellow LM of Pierre Dumay and Gustave Gosselin.

'DRIVING FLAT-OUT, THEY DECIDED, WOULD BOTH ALLEVIATE THEIR BOREDOM AND INCREASE THE LIKELIHOOD OF AN EARLY NIGHT'

Anti-clockwise from top
The yellow 250 LM of Dumay and Gosselin about to be passed by the NART-run LM of Gregory and Rindt; a frightening blowout on the Mulsanne Straight eventually did for the yellow car's chances of victory.

The NART squad was still two laps down, of course, but Rindt and Gregory tore chunks out of the lead until it became apparent that, despite only 14 of the 51 starters still running, Le Mans had a proper race on its hands.

The intrigue was not over yet, however, for now was the time for the *éminence grise* to make his entrance. The problem was that Scuderia Ferrari was under contract to Dunlop, whose tyres were worn by the Dumay/Gosselin LM. The NART car was on Goodyears.

A Dunlop representative apparently paid a visit to Luigi Chinetti, who was not only the sole importer of Ferraris into the marque's most important market, but also a three-time Le Mans winner and the first person to win the 24 Hours in a Ferrari. According to Coco Chinetti in an interview with Doug Nye, his father was asked to let the Dumay/Gosselin LM win. Chinetti senior, always his own man, was having none of it – and even if he'd wanted to, it's doubtful he could have persuaded Rindt and Gregory to throw the race now, having flogged themselves through day and night.

For a while, it looked like the crowd would be treated to a grandstand finish. It seemed inevitable that the NART LM would take the lead before the flag, but it would then need a longer pit stop before the finish. Chinetti's lot were confident that Gregory and Rindt could pull it off, while their rivals were equally sure the NART challenge could be resisted.

'GOSSELIN DID INCREDIBLY WELL TO STOP HIS FERRARI FROM TURNING INTO A LOW-FLYING LIGHT AIRCRAFT'

We never got to find out who was right. Three hours before the flag, with the car flat-out at perhaps 190mph on the straight, a Dunlop on the Dumay/Gosselin LM let go. Gosselin did incredibly well to stop his Ferrari from turning into a low-flying light aircraft, but the exploding tyre caused massive damage to the rear of the car, and by the time it could be patched up all hope of victory had gone.

The record says that the NART LM finished the race five laps clear of the rest of the field, which suggests an easy day at the office. It was anything but. Had Masten Gregory and Jochen Rindt not decided to drive the LM right on the limit, no matter what the consequences, they'd never have been in a position to push the Dumay/Gosselin LM as hard as they did in the closing stages. Enzo might not have liked it all that much, but it was a very fine victory – and, of course, Ferrari's last at Le Mans to date. Evo

Above
Members of the NART pit crew enjoy a ride on the victorious Ferrari at the end of a seriously gruelling 24 Hours. Of 51 starters, just 14 lasted the distance.

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PIRELLI FERRARI *formula classic*
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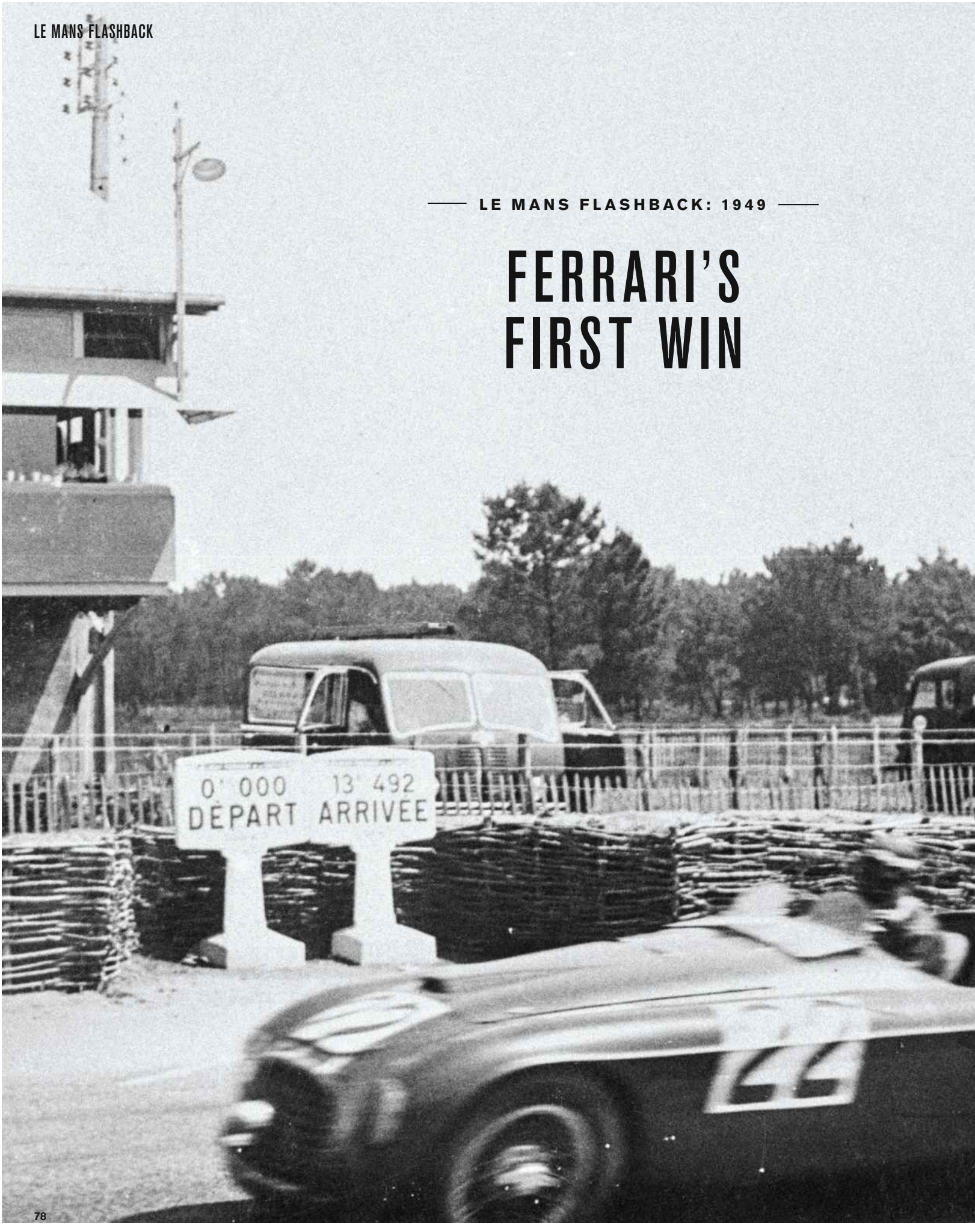
LE MANS FLASHBACK: 1949

FERRARI'S FIRST WIN



It was the first running of the 24 Hours after World War Two, and there was a new kid on the block: Ferrari. Its delicate, boat-tailed 166 MM may have packed only a 2-litre V12, but the car outpunched the big-engined Talbots, Delahayes and Delages to win by just over a lap. The win was also remarkable because, while accounts vary, it is almost certain that Luigi Chinetti drove all but 72 minutes of the race. Lord Selsdon, who owned the Ferrari, was down to share driving duties, but apparently fell ill in the early going. There was some suspicion that he had scared himself in his first stint and declined to go out again… Whatever the truth of the matter, Chinetti's performance was heroic, and having written himself into the history books by delivering Ferrari's first win at Le Mans, he went on to become a pivotal figure in the commercial success of the marque, acting as its first agent in the USA, where he also set up the famous North American Racing Team.

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TAKE-OFF

Mark Dixon heads to Le Mans to see Rover's famous jet car in full flight for the first time since the 1965 24 Hours

Photography Lyndon McNeil

Things are not going well on the lush display lawn that fronts the trade village at the Le Mans Classic. Bemused onlookers watch as three green-overalled mechanics work frantically to fire up the Rover-BRM gas turbine car. It last ran here in 1965, during the 24 Hours, and the demonstration that's scheduled to take place in just a few minutes will be the first time it has been driven at speed since – well, since 1965. The engine was damaged back then, and it's taken 49 years for it to be restored to health. But, at the moment, no-one is sure whether Rover's 'jet car' is actually going to make it onto La Sarthe's hallowed tarmac.

Then, all of a sudden, there's the loud electrical buzz of a starter motor turning over, which is rapidly drowned out by the unmistakable sound of a jet engine spooling up. The noise morphs from the whine of an air-raid siren into the percussive beat of the loudest washing machine you've ever heard, rising in pitch all the while, now emulating a high-speed drill until finally it climbs a further two octaves to reach a full-blooded jet-engine scream. The onlookers are sticking fingers in their ears as the mechanics rush to secure the huge, lift-up tail, and driver Andy Storer is beckoning to me to hurry up and wedge myself into the passenger seat beside him. I can hardly believe it, but I am about to lap Le Mans in one of the most exciting – and potentially dangerous – racing cars ever made.

IT'S NOT THE FIRST TIME I've ridden shotgun in the Rover-BRM. A few weeks ago Andy and I made some tentative laps of the car park at the British Motor Museum in Gaydon, where the car normally resides. We circled lazily for a few minutes, the car temporarily denuded of its rear bodywork just in case the worst should happen and rapid access with a fire extinguisher was required.

Earlier, I had watched from a safe distance as Andy drove the initial test circuits, and I was amazed at just how much like a taxiing airliner the car sounded. You know that moment when you're buckled up, armrests down and tray-tables folded away, and the pilot pushes the throttles forward and gives it everything for take-off? That's what the Rover-BRM sounds like under acceleration.

Strictly speaking, the Rover-BRM does not have a jet engine: it's powered by a gas turbine, but in essence that's a jet with a turbine wheel placed behind the gas flow to translate it into rotary motion, which can then turn road wheels. All you need to know for now is that it gets very hot (930°C just after combustion), and it's very loud. And, given that the engine has a turbine wheel spinning at 65,000rpm, the consequences of a mechanical failure really don't bear thinking about. Especially when all that's separating the car's occupants from its powerplant is a thin sheet of alloy and a marginally thicker piece of asbestos.

Right
British Motor Museum volunteers Pete Stratton (top) and Ian Wood work on the Rover-BRM at the Le Mans Classic.

'GIVEN THAT THE TURBINE WHEEL SPINS AT 65,000RPM, THE CONSEQUENCES OF A MECHANICAL FAILURE REALLY DON'T BEAR THINKING ABOUT'

The car was running with a damaged engine when it completed the 1965 24 Hours of Le Mans at an average speed of 98.8mph, finishing 10th overall and 2nd in class. (The boffins had worked out a formula that put the car in the 2.0-litre Prototype category, where it was up against Porsches and the like.) It was later discovered that a piece of turbine blade had broken off and that the engine was running out of balance – to the tune of 200 times more than its build-level tolerance, which is why the car was hardly ever used after its return to England. It last ran in 1993 when Tony Dron drove it for *Classic Cars* magazine. No-one seemed to be aware of the fault when the test was arranged, but Tony immediately realised the engine was not on song.

'Somebody hinted that it had been regulated to reduce its power but, whatever the truth of that, there was clearly something else wrong,' he wrote. The very poor state of the engine was revealed in 2013, when it was stripped by a group of British Motor Museum volunteers: father and son Andy and Jon Storer, Neil Simmons, Ian Wood and Pete Stratton, all of whom have worked for Siemens (and, in Jon's case, Rolls-Royce) on large gas turbines.

'Jon was able to secure a boroscope to inspect the inside of the engine before we took it apart,' says Andy. 'That revealed that there was extensive cracking in some of the turbine blades. Fortunately, we had a spare engine and were able to cannibalise enough parts to make one good unit from the two. But getting it to work properly has been something of a game.'

Whether the team should even try was a question with which Motor Museum curator Stephen Laing wrestled. 'The desire to demonstrate the car in public, to remind people what Rover achieved, had to be weighed against the risk of causing irreparable damage to a historic artefact.'

Andy has become the car's designated driver. He races Austin Sevens as a hobby, but the Rover-BRM demands a technique unlike that used for any other racing car. A gas turbine is slow to react when it's throttled up, and it also provides zero engine braking when the driver lifts off. In fact, says Andy, it provides less than zero, because the inertia of the high-revving turbines creates a flywheel effect that keeps on driving the car.

That means you rely very heavily on the brakes when entering a corner, and have to completely recalibrate the anticipated braking distance. Moreover, because of the turbine lag under acceleration, you have to start spooling up the engine while you're still braking into the corner, so that it will slingshot you down the next straight. No wonder Graham Hill and Ritchie Ginther, contracted by Rover for Le Mans in '63, had misgivings. Hill in particular seems to have almost hated the car.

BRITISH MOTOR INDUSTRY HERITAGE TRUST

BRITISH MOTOR INDUSTRY HERITAGE TRUST

Above and left
As built for Le Mans in 1963. The car wore number 00 that year as it couldn't officially compete, because there was then no formula to equate gas turbines with petrol engines; on the streets of Coventry wearing the new body fitted in 1964 at a reported cost of £10,000.

IN ROVER'S FINAL YEARS, back in the early 1990s, the company was seen as old-fashioned. Few people recalled that Rover had for decades been one of the most adventurous carmakers in the world. Its SD1, launched in 1976, could hold its own against anything from the likes of, say, Citroën. That car was preceded by the radical P6, introduced in 1963. And before that there were the gas turbine cars. In fact, Rover was the first company in the world to produce a gas turbine car, in 1950.

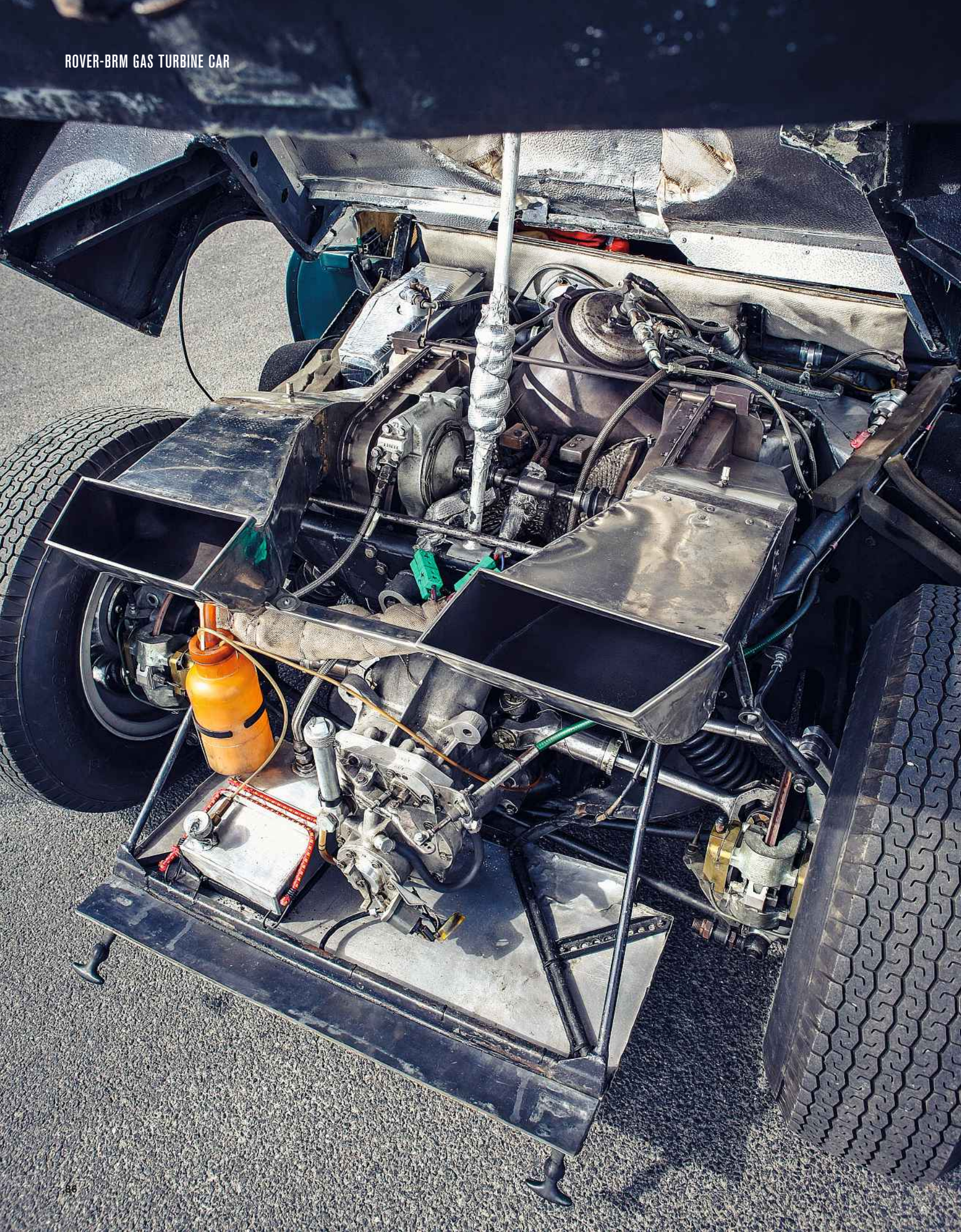
Rover had been involved with developing jet engine technology during World War Two, thanks to a meeting between jet engine pioneer Frank Whittle and Rover's chief engineer, Maurice Wilks. Rolls-Royce ended up taking over jet engine development (Rover was tasked instead with turning the Merlin aero engine into the Meteor unit for tanks), but the Rover engineers had gained a lot of experience in the brave new world of jets and turbines, and in March 1950 they unveiled a fully functioning gas turbine car, registered JET 1.

In essence a P4 saloon with the roof lopped off and a Rover T8 gas turbine fitted amidships, it wasn't sexy, but it was fast. In June 1952 it exceeded 150mph on the Jabbeke motorway in Belgium. It was just as well that it was fitted with disc brakes all-round – another Rover first.

Further turbine cars followed. First there was another P4, kept in saloon configuration this time but with an ugly 'chimney' where the bootlid would normally be. That was succeeded by the T3, a dumpy, glassfibre-bodied coupé, featuring four-wheel drive, disc brakes and a de Dion rear axle. Rover finally got its design ducks in a row with the 1961 T4 saloon, whose looks prefigured the sleek P6.

Then came the Rover-BRM Le Mans racer. It was conceived and built in just nine months to meet a challenge from the Automobile Club de l'Ouest, which offered a prize of 25,000 francs (about £2000) for any gas turbine car that could cover at least 3600km during the 1963 24 Hours of Le Mans. Rover joined forces with racecar manufacturer BRM, whose engineers prepared a chassis based on that of the Type 57 Formula 1 car. This was then fitted with a lightweight Rover 2S/150 engine.

This revolutionary car would wear two distinct bodies. The first, a riot of compound curves rather spoiled by the tall windscreen necessary to meet race regulations, seemed like a design from the previous decade. But the second, penned by William Towns and fitted in 1964, had a futuristic beauty that was in keeping with the advanced technology underneath.



1965 Rover-BRM
Engine Rover 2S/150R gas turbine, equivalent to 1600cc by FIA formula **Power** 126bhp @ 63,500rpm **Torque** 267lb ft @ 0rpm
Transmission Single-speed plus reverse, with power turbine acting as torque convertor
Steering BRM rack-and-pinion **Suspension** Front and rear: double wishbones, coil springs, telescopic dampers **Brakes** Dunlop discs **Weight** 757kg
Top speed c140mph. **0-60mph** 11.3sec

GAS TURBINES ARE FRUSTRATING MACHINES. They offer some great advantages: you can run them on pretty much anything that will burn, and they get up to operating temperature almost immediately. There are some significant drawbacks, too, however. For road car use, one of the biggest disadvantages is their high fuel consumption. JET 1 could burn through fuel at between one and four miles per gallon. Even the much more advanced T4 would typically average 12-14mpg in normal use. And gas turbines are very slow to respond to throttle inputs; they work best when running at a high constant speed.

Part of the fuel consumption problem is that huge amounts of energy are wasted as exhaust heat. To help reduce this wastage, engineers experimented with various forms of heat exchangers, or regenerators, that could recycle heat from the exhaust to the inlet charge. Initially these took the form of static radiators, but the development of ceramic technology by Corning Glass in the USA allowed a new concept to be tried: a slowly rotating disc that absorbed heat from the exhaust on one sector, then passed it to the inlet tract. This was much more efficient, and the material was almost impervious to expansion and contraction, and thus didn't distort – but, unlike metal, it exhibited no measurable 'strain', and so there was no way of knowing for sure when a ceramic disc might simply let go.

Nevertheless, by the time the Rover-BRM appeared at Le Mans in 1965, it was fitted with two regenerators. Looking like huge ears on either side of the engine, they improved fuel efficiency considerably, and *Motor* magazine – which had been allowed to drive the Rover-BRM for a whole week on public roads in the UK! – reckoned that at high speed the car had about the same fuel economy as a Big Healey or a Jaguar E-type. It was a different story in towns and traffic jams, however, where the gas turbine's high idling speed meant that it consumed fuel with abandon. The engine also tended to roast the car's occupants.

BACK AT THE LE MANS CLASSIC, one of the mechanics is racing ahead of us on foot, clearing a path through the milling spectators like some 19th-century motorist's servant, only without the red flag. We wind along the back road that will lead us to the track entrance, keeping an eye on the jet pipe temperature gauge that sits to the left of the steering wheel. If the needle creeps much beyond 650°C, we're in trouble, for there's a chance that the engine could seize. In which case it's game over, forever.

For a couple of heart-stopping minutes we're held in check just short of the track. Then the marshals are urging us forwards, and we start accelerating through the gap in the pit wall, make a right turn… and we're finally here! We're beginning to lap Le Mans in a car that last drove this track five decades ago. It's a fantastic moment, an enormous privilege – and I can't help feeling guilty that I'm in the passenger seat rather than one of the volunteers who toiled to make all this possible.

‘I WORKED ON THE ROVER-BRM’

Memories from the engineers who created Rover’s jet car

CHRIS BRAMLEY
DEVELOPMENT ENGINEER

‘We built a simulator to test the engine for Le Mans, using a big rotating wheel made out of Tufnol with grooves cut in it to activate microswitches that controlled the engine. One rotation of the wheel took eight minutes, about the length of a single lap at Le Mans.

‘This was in the days before data loggers, of course, so we had lots of gauges, lots of manometers, thermocouples and so on, with people writing everything down and taking the notes away to put the details into some very primitive Monroe calculating machines. It took something like four hours to get a set of results after running the engine – so do that seven or eight times and it was a week’s work! Nowadays you’d have the information in seconds.’

MARK BARNARD
HEAD OF ROVER-BRM PROJECT

‘Really, the 1963 race was quite boring from our point of view. At each stop we had a set routine: the foam filters in the air intakes would be replaced and the brake pads and fluid levels would be checked. Otherwise we didn’t really have to do anything at all.

‘In 1965, [tester] Pete Candy and I discovered the night before the race that the engine was running hotter than normal. We debated whether to swap in the spare engine, but in the end we decided to leave it. We found afterwards that a large chunk of compressor had broken off – ahead of the race, not during it. The oil we used to damp out resonance at certain frequencies had kept the engine going.’

LAWRENCE ‘TOD’ BUTLER
GAS TURBINE ENGINEER

‘At a particular engine speed, a resonance could develop between the blades of the compressor and power turbines, and that could ultimately lead to a blade breaking off. But we knew at what speed the problem occurred, so we decided just to minimise the time window in which it could happen, and not to worry about it!

‘Much later, we had a problem with the heat exchanger discs when sulphur-bearing fuel was used. The stuff leached into the material and caused the discs to explode. It was scary to be surrounded by hand grenades in the workshop…’

JOE POOLE
GAS TURBINE DESIGNER

‘Sometime in ’63 we decided to drop the fixed heat exchangers and go for the rotating ceramic discs instead. We were taking quite a gamble, but that was typical Rover: “Let’s try it, chaps!” By the time we got to Le Mans in ’65, we’d tested several engines for hundreds of hours each, but we still had no idea whether a disc would last for hundreds of hours or just a few minutes. There was just no way of predicting when a disc would fail.

‘Issues with the heat exchangers were one reason we didn’t compete in ’64. The other reason was that the chap towing the car back from a test in France went off the road and hit a tree. When we got home, he was summoned upstairs and we all thought, “ Wow, this is it!” But the odd thing was, after that he never looked back, and in fact he went from strength to strength!’

From far left
Rover-BRM engineers Joe Poole, Chris Bramley, Lawrence Butler and Mark Barnard; the crew hitches a ride following the 1965 24 Hours of Le Mans, at which the car finished 10th overall.

BRITISH MOTOR INDUSTRY HERITAGE TRUST

MARTYN GODDARD

'YOU'RE ON THE BRAKES ALMOST ALL THE TIME TO SLOW IT DOWN AHEAD OF INCONVENIENCES SUCH AS CORNERS AND CHICANES'

This is a demonstration run in a largely untested car, so there's no way Andy is going to be pushing the envelope. But since even at its 28,000rpm idle the car will be travelling at 100mph, the issue is not getting it to go faster – it's slowing it down ahead of inconviences such as corners and the chicanes on the Mulsanne Straight. It just wants to keep accelerating. As Andy tells me later, it's not that quick up to 80mph, but it's noticeably faster from there to 100, and faster still to reach 120. Maximum speed is at least 140mph. You are on the brakes almost all the time in the Rover-BRM, which makes it all the more astonishing that in 1965 it did the whole 24 hours of Le Mans with just one change of rear pads.

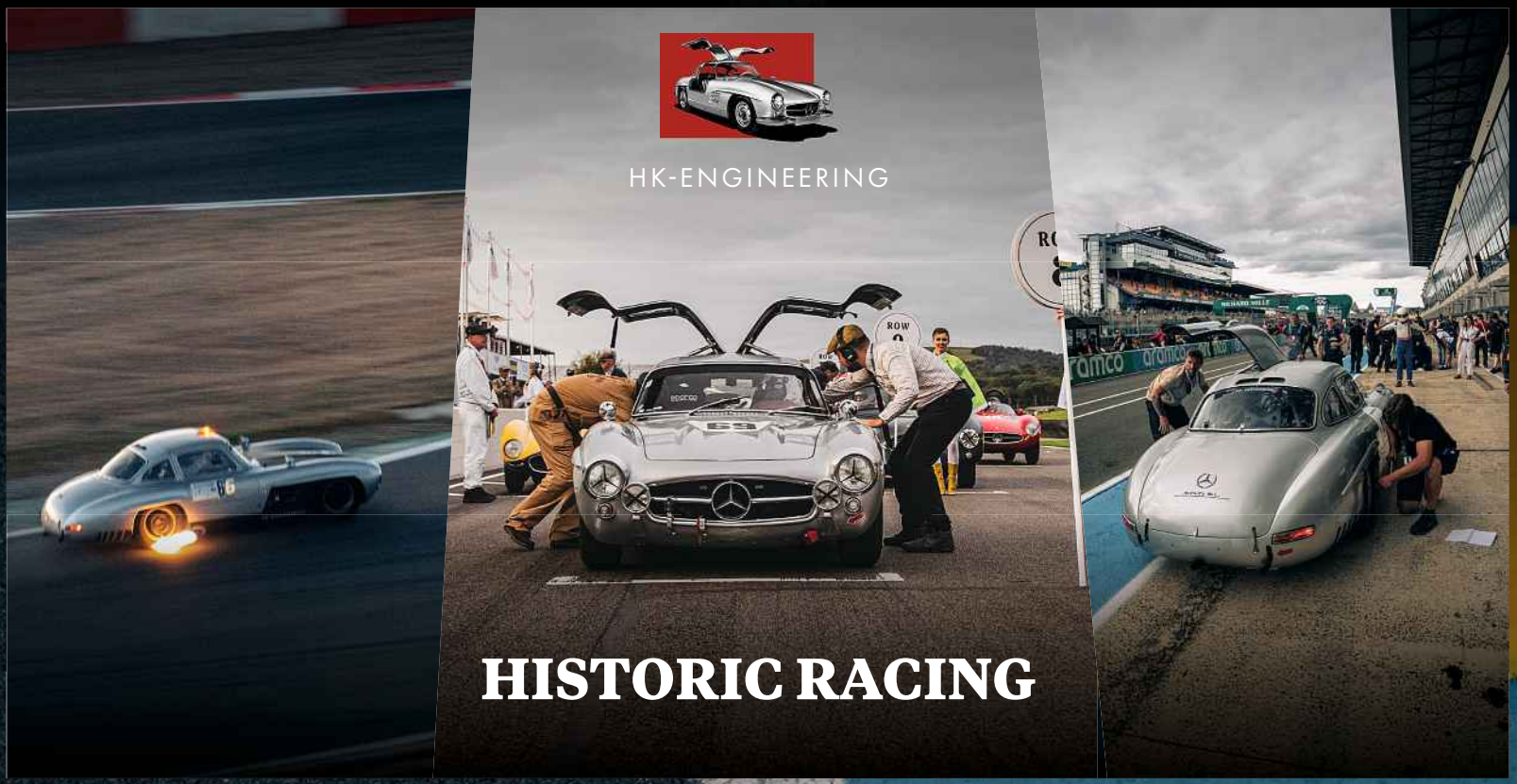
Even travelling at a decent lick it takes several minutes to negotiate the 8.5 miles of a single lap, and as a passenger I have little to do except keep an eye on the instruments. There's time, then, to take stock of the interior, which is very much as it was back in 1965: the dashboard is still trimmed in what looks like slightly baggy red corduroy (it's apparently 'ribbed nylon', which doesn't sound like the most fire-resistant material) and boasts an array of instruments and switches that have a distinctly military look. As Andy flicks the car neatly around the first Mulsanne chicane, I discover there's one thing missing in here: a grab handle for the passenger. I wrap my fingertips around the lip of the window frame.

Now the car is moving freely. The heat being transmitted through the skimpy seatback is tolerable, and I've almost stopped worrying about a fire breaking out. Almost. After all, the compressor turbine spins at up to 65,000rpm (the output turbine turns at a mere 40,000rpm), the engine hasn't been used in anger for half a century, and it's now running on proper jet fuel rather than cheap paraffin. What could possibly go wrong?

I SHOULD HAVE HAD MORE FAITH in Rover's engineering. During the 1963 Le Mans race, the car ran faultlessly and would have finished 7th overall, had it been competing officially. At Le Mans in 1965, when it was driven by Graham Hill and Jackie Stewart, its speed had to be reduced to preserve the engine, but it still ended the race 10th overall and 2nd in class – and could easily have been driven home afterwards. Even more telling is that *Motor* was allowed to road-test the car, with no press-office minder hovering in the background. 'It shows,' the write-up noted, 'that the company has confidence in the reliability of its product.'

Now, thanks to a small band of dedicated and very skilled volunteers, the Rover-BRM is again living up to the sterling reputation that Rover enjoyed back in the mid-1960s. If you get a chance to see the car run, grasp it with both hands. It won't be just the stink of jet fuel that brings a tear to your eye. End

THANKS TO all mentioned, and to the British Motor Museum, where the Rover-BRM is normally on display (britishmotormuseum.co.uk).



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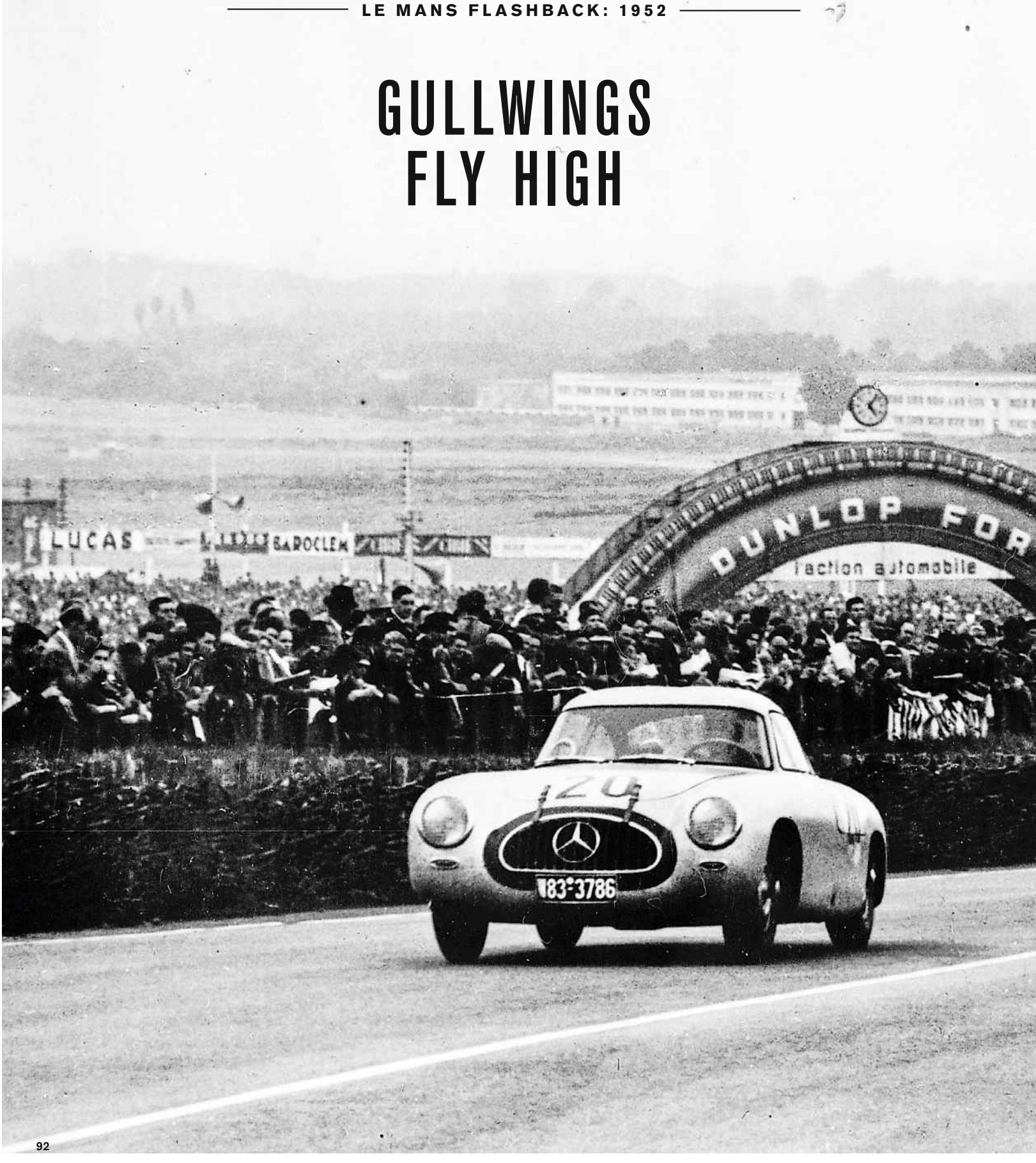
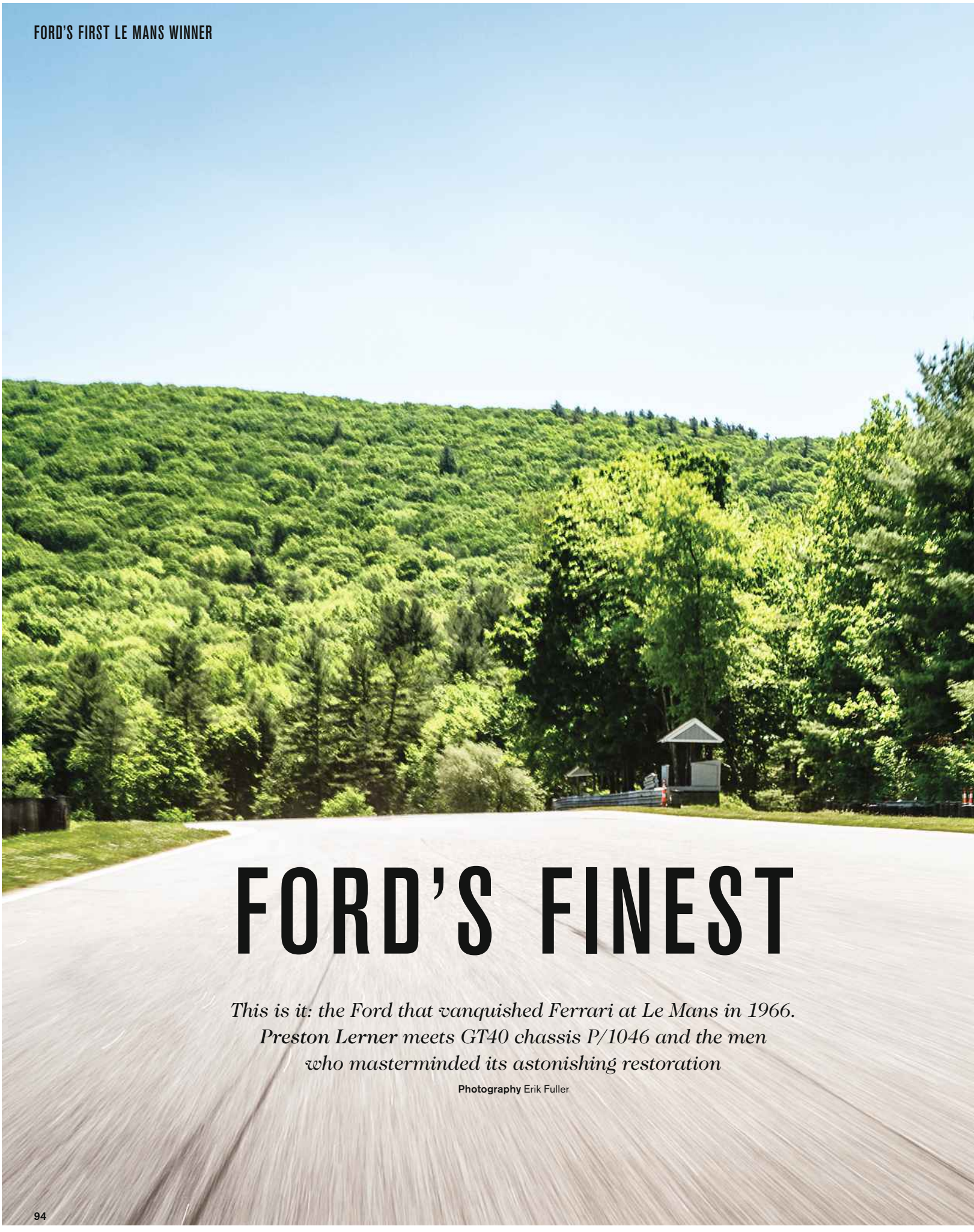
LE MANS FLASHBACK: 1952

GULLWINGS FLY HIGH



DAIMLER BENZ

In 1952, Mercedes-Benz brought to Le Mans a trio of W194 Gullwings. One car retired before morning, but the other two motored on to take 1st and 2nd places, delivering the first win for a German marque. The winning car, driven by Hermann Lang and Fritz Riess, finished a full 15 laps ahead of the 3rd-placed Nash-Healey. It's fair to say, though, that the Gullwings enjoyed a little good fortune: the race was most notable for Pierre Levegh's attempt to drive the full 24 Hours solo, and the Frenchman had built up a big lead by the final hour when he was cruelly failed by his Talbot-Lago. His retirement handed victory to Mercedes-Benz, which had also benefitted from the decision of defending champion Jaguar to field C-types with new bodywork – the infamous 'Kettle Cars', which were aerodynamic but overheated as disastrously as the nickname suggests.



FORD'S FINEST

*This is it: the Ford that vanquished Ferrari at Le Mans in 1966. **Preston Lerner** meets GT40 chassis P/1046 and the men who masterminded its astonishing restoration*

Photography Erik Fuller


2
FORD

GETTY / RAINER SCHLEGELMILCH

GT40 chassis P/1046 sits naked on a table at restoration shop Rare Drive in rural New England, being scrutinised by an uncommonly keen pair of eyes. Rare Drive owner Mark Allin peers at the car not as an artist considering the possibilities of a blank canvas, but as an archaeologist contemplating a historic artefact.

'As a restorer, I'm not using my imagination,' he says. 'I'm not trying to create something. I'm just a mimic. Preserving history is the most important thing to me. If one of my restorations were put in a barn for 50 years, I'd want people to think it was original when they pulled it out. My goal is to make an accurate representation of what an earlier generation did – in every way.'

In decades past, for a concours-quality commission, most shops would have removed the door hinges and strike plates before painting the chassis. But Allin, who is in the vanguard of a school that prizes authenticity over appearance, sprayed with everything in place, because that's how it was done at Shelby American in 1966. Period photos show that the heat-retardant material around the bucket holding the Holley carburettor was wrinkled, so Allin consciously misapplied the new blanket. He even made sure there was a run in the paint of the 'meatball' on the bonnet.

'I would love to have the guy who painted that number go, "Holy mackerel! The paint ran like crap by mistake, and there it is." You want to show the mindset of the guys building the car, and their mindset was: "Get a race number on it RIGHT NOW."

'We could do everything perfectly. We could line up all the screws and plate all the latches. But that's not what they did. I'm not trying to make this a testament to my skills. I'm trying to make it what it was.'

By obsessively studying archive photographs and leveraging his very considerable abilities, Allin has come as close as possible to recreating GT40 P/1046 as it sat on the grid at the Circuit de la Sarthe at 4pm on Saturday 18 June 1966. Twenty-four hours and 3009 miles later, the Ford GT MkIIA, driven by Bruce McLaren and Chris Amon, gave Ford its most important victory in international competition.

Although it's hard to anoint any single chassis as the greatest car in motor sports history, P/1046 is unquestionably on the shortlist of candidates. And to fans of a certain age, no car inspires more passion than the menacing black Ford with the rumbling, big-block V8.

'Even if you know nothing about it or its history, the car is bad-ass,' says current owner and major-league car collector Rob Kauffman, who tasked Rare Drive to carry out the stem-to-stern restoration. 'That thing is just cool.'

Clockwise from above
Ford attempted to engineer a dead-heat between the McLaren/Amon and Miles/Hulme GT40s, but the organisers scuppered Ford's plans and awarded the win to McLaren and Amon. The latter waves to a bewildered crowd; P/1046's current owner, Rob Kauffman, gave Mark Allin (right) the almighty job of restoring the car to exact 1966 condition; so serious was Allin about getting the details right that he even replicated original 'mistakes', such as the wrinkles in the heatproof material around the Holley carburettor; master pinstriper Alex Olivera painted the race numbers, as well as the silver fern that was added in honour of Kiwi drivers McLaren and Amon.

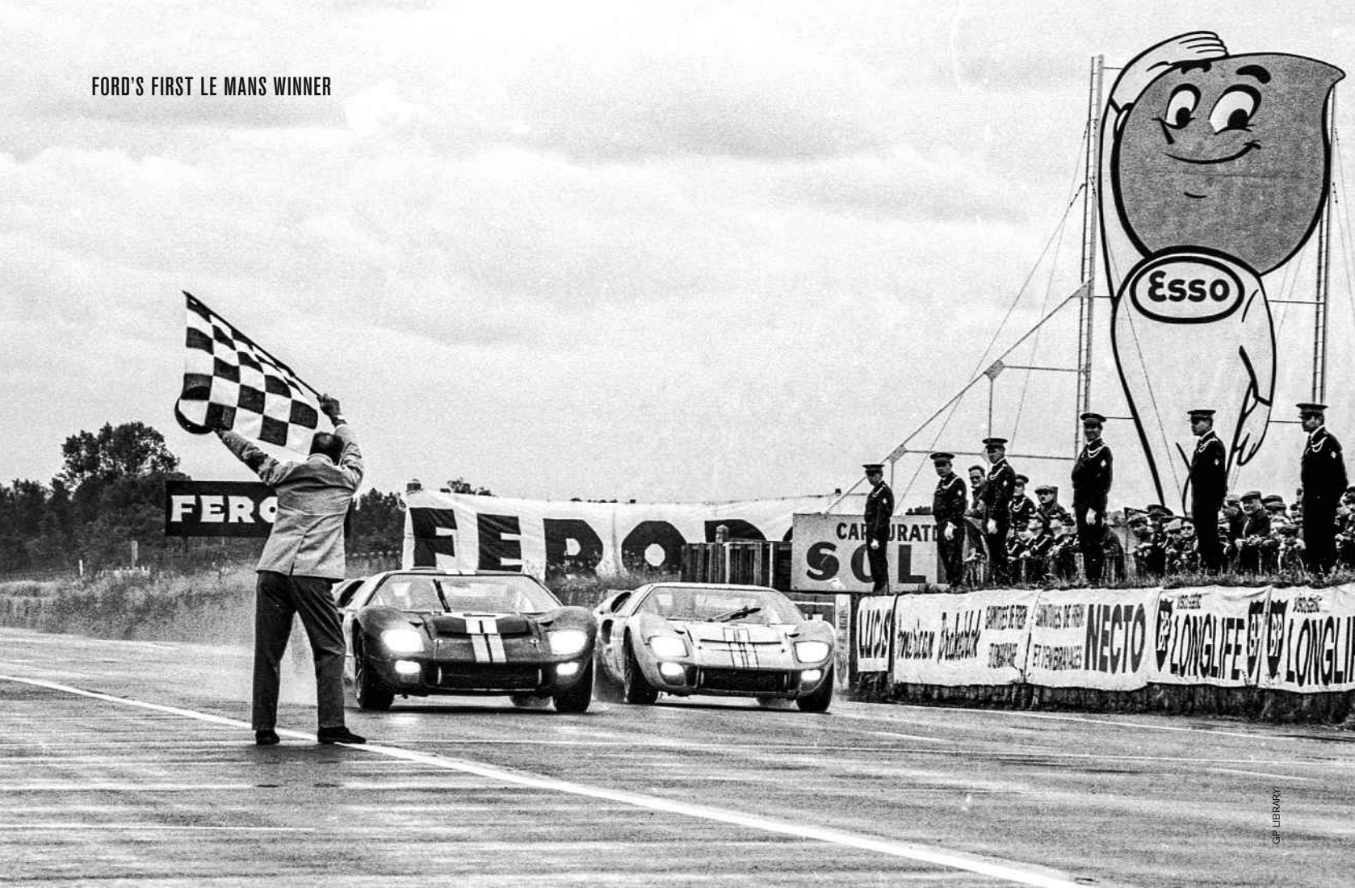
THE STORY OF the Ford GT begins in 1963, when Enzo Ferrari and the Ford Motor Company started negotiating a corporate marriage. After a long courtship, Enzo haughtily left Ford standing at the altar. Ford's imperial leader, Henry Ford II, was incensed by the snub. 'All right,' he growled, 'if that's the way he wants it, we'll go out and whip his ass.' Within a month, Henry had embarked on an ambitious programme to win Le Mans – and crush Ferrari while he was at it.

Stylists in Dearborn fashioned a slinky body for the GT40, so named because it stood only 40 inches high. But no-one in the United States had any experience building mid-engined monocoques. So Ford hired Eric Broadley, whose Lola GT had just raced at Le Mans with a Ford V8 mounted amidships, to design and develop the car from scratch. Four Ford engineers were dispatched to England, and John Wyer, who had orchestrated Aston Martin's win at Le Mans in 1959, was brought in to run the project. Eventually the team moved to a spacious new shop at the Slough Trading Estate near Heathrow Airport, and a company dubbed Ford Advanced Vehicles was established to build the cars.

Fitted with a pushrod version of the 4.2-litre V8 Indy Car engine, the Ford GTs were fast but fragile. After a disappointing first season in 1964 marred by three DNFs at Le Mans, Ford yanked the racing program from Wyer and handed it to Carroll Shelby in Southern California. A Shelby American-modified Ford GT with a Cobra-style 4.7-litre V8 won the season opener at Daytona in 1965.

Ford upped the ante for Le Mans by stuffing 7-litre big-blocks, originally developed for NASCAR, into a pair of GTs designated as MkIIs. This time around, all six Fords broke. Henry was not amused. He sent Leo Beebe, who oversaw Ford's motorsport operations, a notecard with a handwritten admonition: 'You better win.'

For 1966, Ford expanded its road-racing programme to include the Holman & Moody and Alan Mann Racing teams. The company dispatched no fewer than eight MkIIAs to Le Mans – three for each American team, and two for Alan Mann's British outfit. P/1046, run by Shelby, was painted black and silver with a silver fern in honour of the Kiwis, Bruce McLaren and Chris Amon, driving it. After the Fords dominated in qualifying, team officials proposed a conservative race pace, but the drivers had other ideas.



GP LIBRARY

After stopping at the end of the first lap to secure an improperly latched door, Ken Miles set a lap record to make up for lost time. A couple of hours later Dan Gurney broke it. Meanwhile, McLaren and Amon had been hamstrung by the poor performance of their Firestone tyres on the damp track. After losing several laps, McLaren, whose own racing team was funded by Firestone, reluctantly switched over to Goodyear intermediates. 'Let's drive the doorhandles off the thing,' he told Amon.

The Ford aces driving each other into the ground was Beebe's worst nightmare. Sunday morning, after Gurney's GT40 expired, Beebe ordered the remaining cars to slow to a crawl. The target lap time was four minutes flat – nearly 30 seconds off the qualifying pace. There was no more racing as such, but the lead changed hands repeatedly as 1046 and 1015, the car driven by Miles and Denny Hulme, pitted for fuel and tyres.

On Sunday afternoon, Ford decided to stage-manage a dead-heat finish. But while Miles and McLaren were doing their final stints, race officials informed the team that a tie was impossible. Victory would be awarded to the car that had completed the longest distance – 1046, which had started from fourth place, or about 20 metres behind 1015.

Three MkIIAs crossed the finish line together. (The third-place car, driven by Dick Hutcherson, was 12 laps behind the leaders.) Confusion reigned. When Miles tried to drive to the victory stand, his way was blocked, while the seas parted to allow 1046 through. McLaren and a rather sheepish-looking Amon quaffed champagne with Henry Ford II while Miles stewed. Although Hulme enthusiastically congratulated his fellow Kiwis, he later confided: 'We wuz robbed.'

After the race, several other Ford GTs were painted black with silver stripes and sent around the United States as show cars. The engine and electrical system of 1046 were removed and mounted on boards for display purposes. But the chassis was tested extensively during the rest of 1966. Then it was sent to Holman & Moody and converted to MkIIB spec, with a new dashboard, bigger brakes and tyres, wider rear bodywork, a tunnel-port engine with two four-barrel carburettors, even a hefty NASCAR-style roll bar. The car ran one final race, DNF'ing at Daytona in 1967, before being mothballed.

P/1046 passed through the hands of several private owners before ending up in Belgium, where it was transformed into a road car with a reversing camera (!). In 1982 it was bought by American George Stauffer, a major player in the Shelby American community, who restored it for historic racing. Stauffer sold the car to another noted collector, Aaron Hsu, in 2010.

Then, in 2014, it was acquired by the aforementioned Kauffman, an enthusiastic racer who has run a Ferrari 458 at Le Mans. Coincidentally, at around the same time as he bought the GT40, Kauffman also took a stake in Chip Ganassi Racing, which was then campaigning four modern Ford GTs in the FIA World Endurance Championship and the IMSA WeatherTech SportsCar Championship.

Kauffman believes that classic cars should be preserved as far as possible, but after so many modifications and previous restorations, 1046 wasn't a candidate for a preservation-based approach. So after consulting with several 'wise men' of the collector-car world, including Miles Collier and Fred Simeone, Kauffman decided to restore the car to its 1966 Le Mans configuration. And Mark Allin was the obvious choice to lead the project.

Above and opposite
P/1046 crosses line to score the victory over Ferrari that Henry Ford II so coveted. It had travelled 20m further than the car of Miles and Hulme – who thought they had won; owner Rob Kauffman takes P/1046 for a post-restoration shakedown at Lime Rock Park.


2
FORD
GOODYEAR


BRUCE McLAREN
MOTOR RACING
TEAM


2


RPM


WIPER
HEAD LAMP

ALLIN, 49, is a reserved New Englander with a ginger beard and a fascination with mechanical contrivances. He and his wife, Carrie, opened their own shop in 2001. Located in East Kingston, a tiny farming community about an hour north of Boston, Rare Drive consists of eight employees working in a fully kitted-out 10,000sq ft space that was once a DeSoto dealership. The Allins live upstairs with their dogs. 'Mark will come down on a Sunday morning in his pyjamas to do some welding,' Kauffman says.

Allin is renowned for his stellar work on 300SLs, post-war Italian sports cars and racing Porsches, but he's particularly passionate about Cobras and other cars built by Shelby American. He'd already done three other GT40 MkIIs, so he was intimately familiar with the challenges that lay ahead.

Considering it was due for an 18-month-long rotisserie restoration, P/1046 looked pretty good when it arrived at Rare Drive, and Kauffman drove the car briefly before it was disassembled. Allin was pleasantly surprised to discover that the suspension was original and in excellent shape. Ditto for the chassis, with the exception of modifications made to accommodate the Holman & Moody roll bar. The good news was that he found the original blue paint underneath the roll bar mounts, so he was able to match it after blasting the incorrect black paint – applied during a previous restoration – off the chassis.

Allin kept the 1967 T-44 gearbox because it was the same as the 1966 unit aside from a marginally different case. The engine already had period-correct heads, crank, distributor, cast-aluminum water pump, Ford Racing alternator and starter and rare aluminium dampener, but a 1966-vintage block and other internals had to be found. As a concession to durability, Allin installed coated bearings and high-quality head bolts, but he drew the line at performance upgrades. 'No Carillo rods, no roller rockers, no titanium valves, none of that,' he says. The rebuilt engine made 490bhp on the dyno. Back in the day, it was rated at 485.

The Rare Drive crew sourced a heap of period and new-old-stock parts: headlights, a multi-plate clutch, a four-barrel Holley carburettor with mechanical secondaries, a windscreen wiper motor out of a Boeing 707…

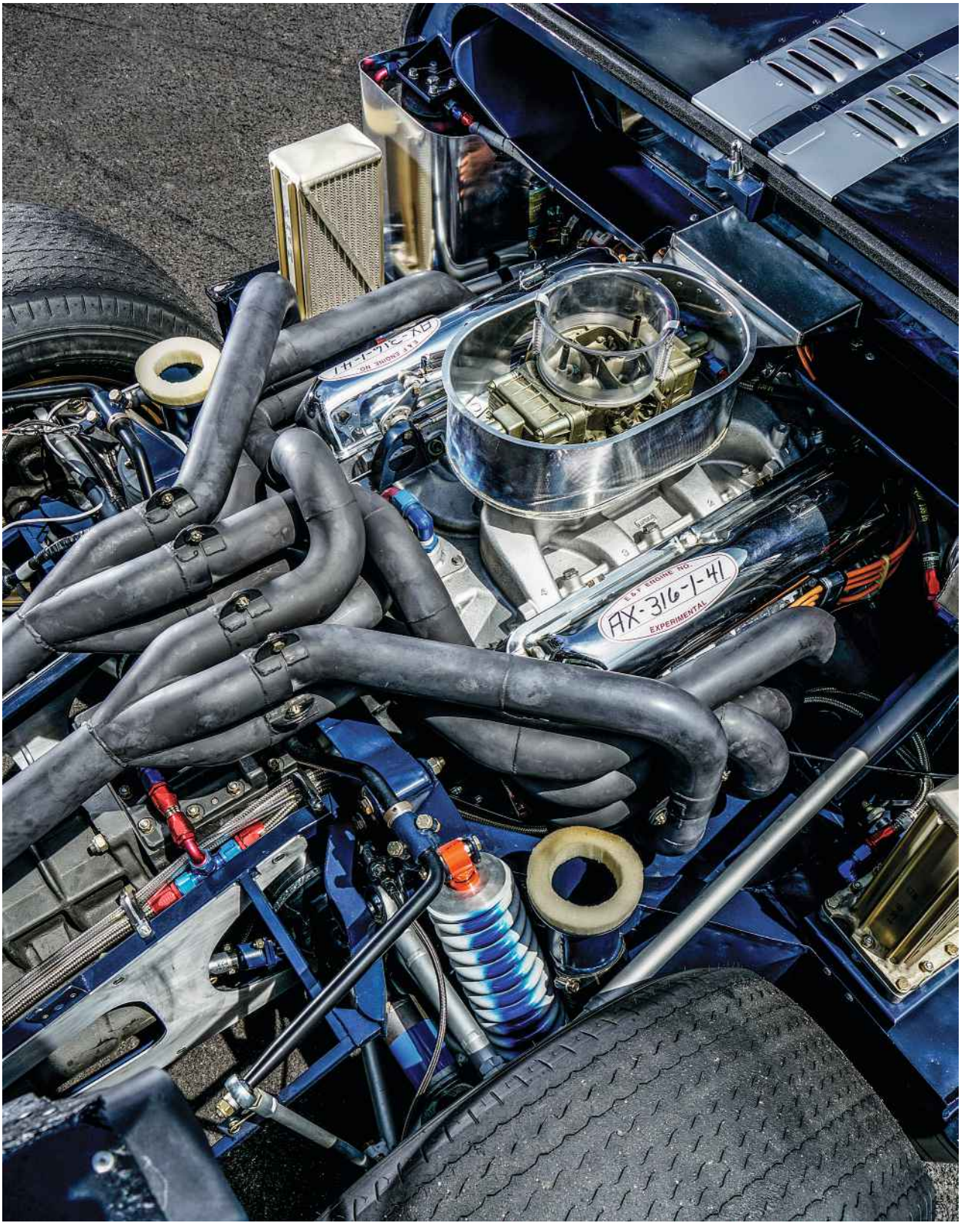
The major fabrication jobs were the bag-of-snakes exhaust ('We were welding for a *long* time,' employee Burn Kenyon says.), the water pipes, the brake ducts, and a slew of brackets and sheet-metal pieces. The original MkIIA rear bodywork came with the car, but Allin had to make moulds for the glassfibre doors and nose, and for the crackle-painted dashboard.

Still, the devil was in the details. 'We filled what felt like eight million holes that were drilled into the chassis for different things,' he says. 'Like, someone screwed a fire system here, somebody put an extra bracket there. Then there were all the holes brazed in earlier restorations that we had to cut open.' But even discounting the changes made over the years, 1046, like all the GT40s finished at Shelby American, was unique. 'No two cars were the same in any way,' Allin says. 'They were built by different guys. One made a weld that was an inch long, and another made a weld that was an inch-and-a-half long. Some guy drilled a rivet hole here, and another guy drilled it nearby.'

Allin didn't interview any of the mechanics who worked on the car in period. 'No fricking way can they remember if the switch for the fuel pump said "Aux" or "Res"! Only a picture can tell me that.' Allin spent hours poring over photos with the concentration of a physicist searching for the Higgs boson. 'The pictures are a blessing and a curse. They help you do the car accurately, but they eat up a lot of time, too.

Above
Mark Allin tracked down several ancient Dymo labelmakers to create the stickers on the dashboard, having first examined old photographs to establish how each switch was originally labelled; the lights to illuminate the race numbers are from a Ford Ranchero.

‘THE CREW SOURCED A HEAP OF PERIOD PARTS, INCLUDING A WINDSCREEN WIPER MOTOR OUT OF A BOEING 707’



1966 Ford GT40 MkIIA

Engine 427ci (6997cc) V8, OHV, Holley four-barrel carburettor **Power** 485bhp @ 6200rpm **Torque** 475lb ft @ 5000rpm
Transmission Four-speed manual, rear-wheel drive **Steering** Rack and pinion **Suspension** Front: double wishbones, coilovers, anti-roll bar.
Rear: trailing arms, top links, lower wishbones, coilovers, anti-roll bar **Brakes** Vented discs **Weight** 1170kg **Top speed** 210mph

If I hadn't had the photos, I would have done what I've seen in other GT40s and guessed my way through some stuff.'

Photographs revealed where to place rivet holes (often unevenly spaced), what colour the brake duct hoses were (orange), even how the indicator stick was secured to the steering column (with hose clamps cut in half). Although there was a standard mount for the fuel pump, the hoses are routed differently in every MkIIA.

Allin picked up about a dozen obsolete Dymo labelmakers to replicate the labels for the switches on the dashboard. He also went through three typewriters to recreate the tachometer correction table taped next to the steering wheel.

Colour archive pictures clearly showed that the quick-jack hooks, which were blue when they left Shelby American, were painted white and then covered with red to improve visibility at Le Mans, so that's what Rare Drive did, too. By zooming in on a tiny portion of a photo of the cockpit, Allin was even able to identify the one-off Cobra chassis tag that 1046 wore during the race.

The restoration process has given Allin some insight into the men who built the car. P/1046 initially came out of the Ford Advanced Vehicles shop in Slough, like all GT40s. But the chassis that were shipped to Los Angeles were modified by the mechanics at Shelby American to accommodate the big-block V8, and all sorts of other changes were made, too, from upgrading the suspension to fitting the cars with the latest aerospace-spec fittings and fasteners. Anglo-American sports cars were transformed into Southern California hot rods.

'The cars that never came to America are much more straightforward,' Allin says. 'There are some deviations, but they were more or less following a script. Each of the Shelby American cars is different. Each has a personality of its own. The guys had an idea of how things were supposed to look, but each person was allowed to execute it the way he wanted.'

Now, ironically, Allin knows how the cars fit together better than the guys who assembled them. Thanks to his attention to detail, anybody who looks at P/1046 today will see *exactly* what Bruce McLaren saw as he stood on the far side of the pit straight at Le Mans in 1966, waiting for the flag to drop on the race that would make the Ford GT40 an icon. Evo

'AT SHELBY HQ IN LOS ANGELES, A STANDARD GT40 WOULD BE TRANSFORMED INTO A SOCAL HOT ROD'

MOTORSPORT IMAGES

‘YOU COULD SIT AT 210MPH’

Chris Amon was legendarily unlucky in Formula 1, but fortune smiled on him at Le Mans in 1966. Before his death in 2016, he looked back on his biggest win. Opposite and overleaf, we pick out some key moments from the race

Words Preston Lerner and John Simister

Chris Amon won only one race in a GT40, but it turned out to be the most significant victory on his CV. ‘The Le Mans win has become more special to me over the years because I didn’t achieve what I wanted to in F1. Le Mans in ’66 is probably the thing I will be remembered for. My wife occasionally runs into Denny Hulme’s widow, Greeta, and she’s still going on about it 50 years later!’

Amon was entrusted with a MkII at Le Mans in 1965. ‘Those cars were quite squirrelly in a straight line,’ he recalls. During practice, they were tamed with chin spoilers, nose canards, tail fins and rear spoilers. ‘I got away first, leaving giant tyre marks behind me. Bruce [McLaren] slipstreamed past on the Mulsanne, and when I looked in my mirror at the end of the straight, the nearest Ferrari was 300 or 400 yards behind me. Nobody would have caught us if we hadn’t broken.’ Which, of course, all the MkIIs did.

By 1966, the fully-sorted MkIIA was the class of the field at Le Mans. ‘The new car was less slippery, but it was much more stable. You could sit at 210mph with one hand on the wheel and it never deviated.’ His unforgettable outing at Le Mans was also his last race in a Ford. The following year, he won the Daytona 24 Hours in a Ferrari 330 P4. ‘By comparison,’ he said after the race, ‘the Ford is a truck.’

Over the years, though, Amon has become much more complimentary. ‘Yes, the MkIIA was a great car, particularly around a circuit like Le Mans. It wasn’t a nimble car by any stretch of the imagination, but it was very good on fast corners.’ And, of course, it was a winner.

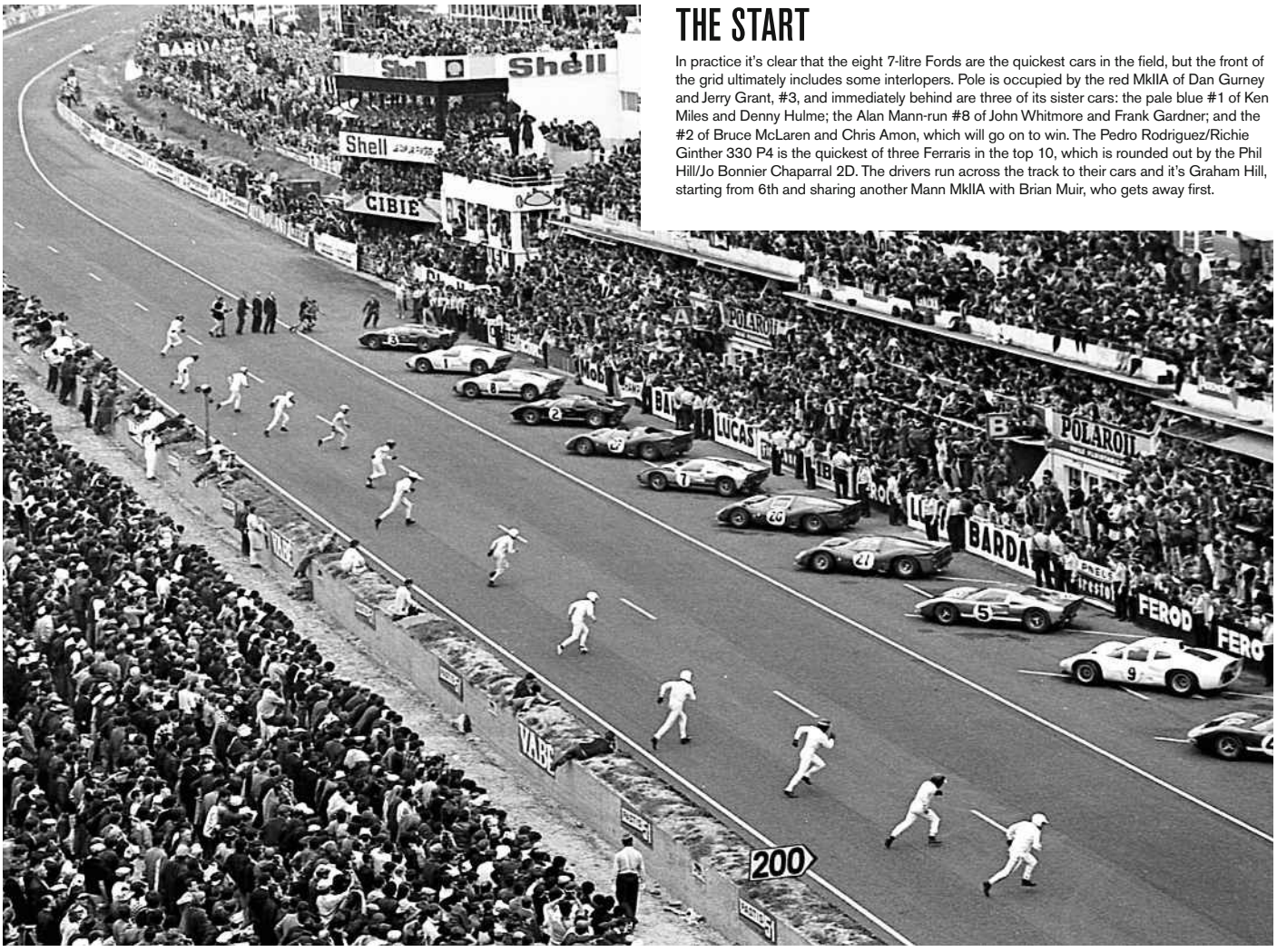
GP LIBRARY

WHERE ARE THE PEUGEOTS?

Answer: moved to the other half of the local Peugeot dealership's workshop. Ford has borrowed half of the building to use as the base for the three factory-backed teams – Shelby American, Alan Mann Racing, and Holman & Moody, the last of which has brought with it a mobile machine shop with beds on the roof and showers inside. The total inventory includes eight race cars plus a spare; seven extra engines; 21 tons of spare parts; and, hilariously, a Coca-Cola machine.

THE START

In practice it's clear that the eight 7-litre Fords are the quickest cars in the field, but the front of the grid ultimately includes some interlopers. Pole is occupied by the red MkIIA of Dan Gurney and Jerry Grant, #3, and immediately behind are three of its sister cars: the pale blue #1 of Ken Miles and Denny Hulme; the Alan Mann-run #8 of John Whitmore and Frank Gardner; and the #2 of Bruce McLaren and Chris Amon, which will go on to win. The Pedro Rodriguez/Richie Ginther 330 P4 is the quickest of three Ferraris in the top 10, which is rounded out by the Phil Hill/Jo Bonnier Chaparral 2D. The drivers run across the track to their cars and it's Graham Hill, starting from 6th and sharing another Mann MkIIA with Brian Muir, who gets away first.



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NEIL GODWIN-STUBBERT

A TRAITOR IN THE FORD CAMP

Henry Ford II desperately wants to win, principally to spite Ferrari. He's still smarting from Enzo Ferrari's abrupt rejection, three years earlier, of a proposal that would have seen Ford acquire the Italian marque. With only three of eight GT40 MkIIAs left in the race, Henry is no doubt cursing the organisers for not allowing him more factory-backed cars; he had wanted to enter 15! Not for nothing did John Wyer, the head of Ford Advanced Vehicles, refer to the 1966 Le Mans effort as 'Operation Overkill'. We suspect Henry did not consider being named the honorary starter of the race to be sufficient compensation for a decision that could yet spoil his party. It emerges that Henry's Italian wife, Cristina, has placed a $1000 bet on Ferrari to win. The Ford people are not amused – apart from Henry himself, to his great credit.

A SURE THING – OR IS IT?

With the Ferrari P3s out by 8am and the Chaparral not even lasting to midnight, it seems to be a question of which Ford will win. But the Ford top brass can't relax yet: four of the eight MkIIAs are out through mechanical malady or accident, and all five of the MkI GT40s are also out, their engine problems an echo of 1964 and '65. Then Gurney's leading MkIIA blows a head gasket. Team manager Leo Beebe, under intense pressure for a result, orders the remaining three cars to slow right down. The Ronnie Bucknum/Dick Hutcherson car is too far behind to win but the Miles/Hulme and McLaren/Amon MkIIAs trade the lead from the 18th hour, the drivers highly frustrated.

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GETTY / RAINER SCHLEGELMILCH

UNTANGLING THE RESULT

Miles and Hulme, who had grudgingly been lapping especially slowly relative to their true pace in service of Ford's nonsense dead-heat finish, initially think they're the (joint) winners. But it's McLaren (far left) and Amon (far right) alone who are ushered, wearing slightly embarrassed smiles, to the podium – the victors by dint of having started ever so slightly farther back on the grid. Henry Ford II, of course, doesn't care which car has won as long as his name is on it. In the centre of the picture are winners of the 1601-2000cc class, Colin Davis (left) and Jo Siffert (right), whose works Porsche 906 has also won the Index of Performance. Evo

1964 Jaguar E Type
FIA HTP 2028

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CIBIÉ
DUNLOP
917
SHELL
PORSCHE

Seeds of success

The Porsche 917 dominated at Le Mans in 1970 and 1971, but its story begins earlier, with this very car

Words Glen Waddington and Peter Stevens **Photography** Dean Smith

The Porsche 917 was a car so fearsomely fast that in the early days of its competition career, some drivers refused to get behind the wheel at certain circuits. Those who were willing to drive it had to face down the tears of their wives. Today it is remembered above all else for dominating at Le Mans in 1970 and 1971 – but it wasn't a winner from the off. Its vast potential was harnessed, little by little, by a team boasting some of the finest minds ever to work in motorsport.

Ask any of those involved about the part they played in developing the 917, and you'll be struck by one thing in particular (other than their modesty): they all mention Ferdinand Piëch. Frequently.

Back in 1968 Piëch was the chief engineer in charge of motorsport at Porsche, which was run by his uncle, Ferry Porsche. The company had already enjoyed plenty of racing success, but Piëch sought more than class wins for little 2-litre coupés. He wanted to win the 24 Hours of Le Mans outright, and with that lofty goal in mind Porsche set about building the most powerful sports car of the era.

'We had fought for victories for more than 20 years, yet never won overall,' says engineer Hermann Burst, who worked on the project. 'We had a dedicated team but very little time. And it was all led by Piëch. "The biggest risk of my life," he called it.'

Piëch dreamt up the car's spec with engine maestro Hans Mezger, who went on to become the 917's project manager. The pair promised to deliver 500bhp and a top speed of 380km/h, figures previously unheard of in sports-car racing.

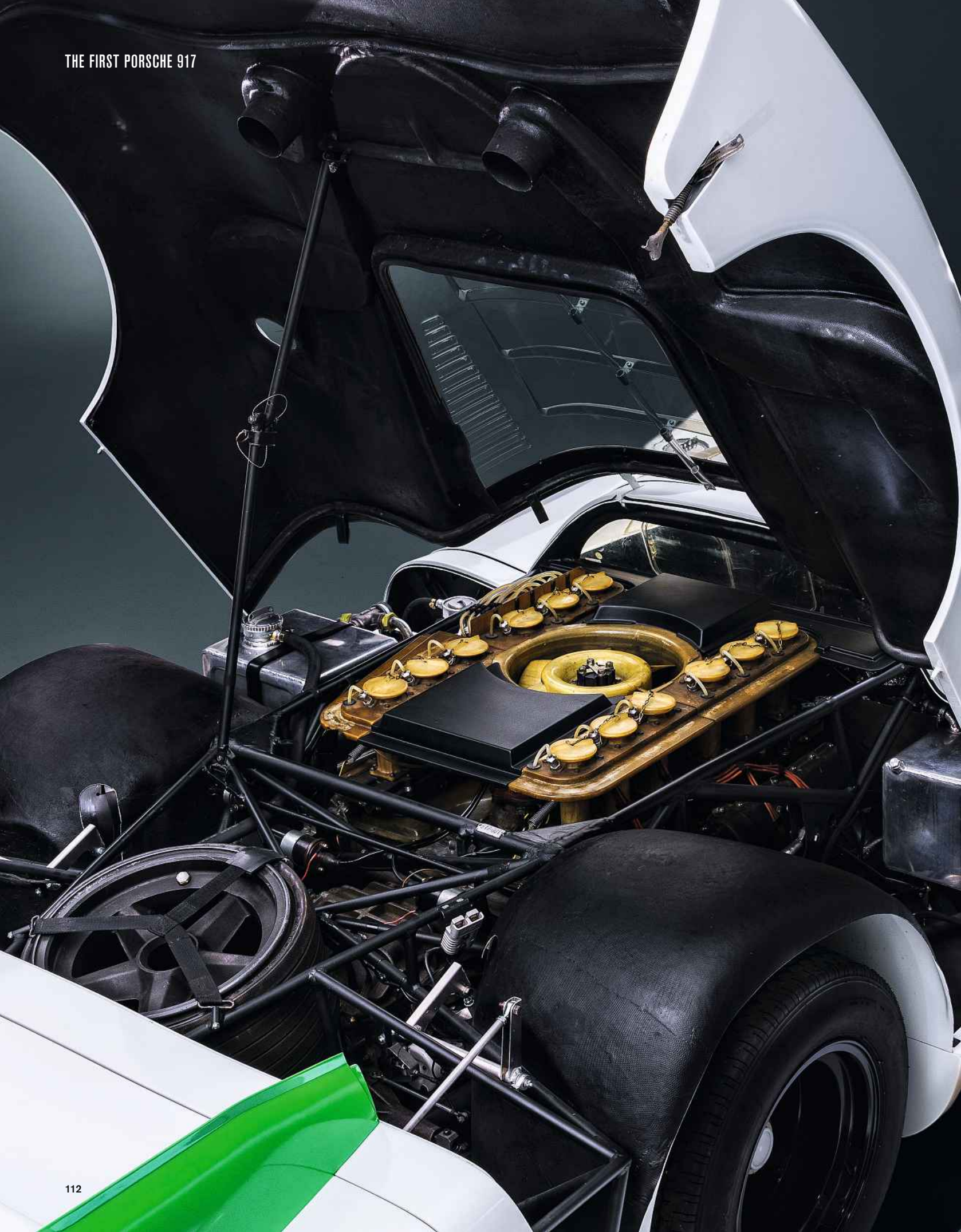
'Back in 1963, Piëch had welded together two 911 engines to create a flat-12,' says Mezger. 'So Porsche was already thinking about a 12-cylinder engine. But for the 917, it was not really a flat-12, and it certainly wasn't a boxer. We had to change the firing order, so in reality it was a 180º V12. But it had a central power take-off. The reliability of the 917 engine originated from this central power take-off. And the power output itself was greater than we expected.'

A claim of 520bhp had appeared in a brochure printed for the 917's debut at the Geneva Motor Show in March 1969. That was based on trials carried out with a four-cam flat-six that had produced 260bhp. The engineers had simply doubled that number. But when the 12-cylinder was finally tested, it was found to make fully 580bhp.

'As opposing pistons shared a crank journal, the number of bearings could be reduced,' Mezger explains. 'This has benefits in terms of fabrication and oil consumption. We also fed oil into the crankshaft so there was far less friction at the bearings. That's how we gained 60bhp in the 12-cylinder layout. And that's how we moved from smaller, class-winning engines to larger ones that would win overall.'

'There were no excuses any more,' says Burst. 'Everybody wanted to win, and with this project, we could.'

Still, in 1969 they didn't expect to. That was the car's shakedown year. In fact this car, chassis 1, has never raced. It has always been used for promotional work, and spent much of its life dressed in the body style and iconic red-with-white-stripes livery of the Team Salzburg car that won at Le Mans in 1970, carrying Hans Herrmann and Richard Attwood to a stunning victory.



Left
The 4.5-litre horizontally opposed 12-cylinder produced 60bhp more than was anticipated in period – and recent calculations suggest a theoretical top speed for the car of 405km/h!




‘For the homologation inspection, all 25 cars had to be driveable – and they were, after a fashion…’

Their 917K (‘K’ for ‘*Kurzheck*’, meaning ‘short-tail’) finished five laps clear of the 917L (‘*Langheck*’ or ‘long-tail’) driven by Gérard Larrousse and Willi Kauhsen, with the 908 of Helmut Marko and Rudi Lins taking 3rd place to complete a clean sweep of the podium for Porsche.

The long-awaited win owed much to the efforts of those who had refined the 917’s aerodynamics, but the whole team had worked tirelessly. ‘We were building for a new 5-litre class,’ says Burst, ‘and they reduced the homologation requirement from 50 cars to half that.’ That was an invitation that Piëch couldn’t resist, but to design a brand new racer and and build 25 cars in ten months was still a tall order.

‘There was a lightweight lattice frame, just 45kg, that was built for us by Baur,’ Burst continues. ‘The bodies were outsourced to Wendler, though they were finished and put together at Porsche. No two cars were the same. And though the 917 was based in many ways on the 908, we needed more room for the engine, and that meant moving the driver further forwards.’

The team developed a scale model that would be tested at the FKFS wind tunnel, which was actually a Mercedes-Benz facility. ‘It was the only wind tunnel we could use,’ remembers Burst. Importantly, while the model scored very well for aerodynamic drag, the tests revealed much less about lift. We’ll return to that.

As for car number 1, it was completed in time for the Geneva Motor Show in March 1969 – barely eight months since Piëch had announced his intentions. He presented it not on Porsche’s stand but on that of the Automobile Club Switzerland. Meanwhile, back at Porsche’s factory, the race was on to complete the remaining 24 cars required.

‘We had 48 men in 12 teams,’ says Burst. ‘And the cars had to be driveable! The only space we had where they could be lined up was the executive car park. So on 21 April 1968, Ferdinand Piëch’s secretary called the executives and asked them all to remove their cars. We wanted to overwhelm the homologation inspectors with what we had created.’

It turns out that the inspector chose to drive car number 12. Could he really have picked any of them? ‘They all had engines that would start, and they all drove,’ says Burst. ‘They didn’t all have full suspension, but they could all be driven in that car park…’

FAST-FORWARD TO the present day and the 3000-hour restoration of chassis number 1. ‘This car was created in the Porsche motorsport department at Weissach, and that’s where it was restored, too,’ says Alexander Klein, manager of the Porsche Museum. ‘We wanted maximum authenticity. To restore the car to its exact original state. And to achieve that, we involved some of the people who built it in 1969.’

Amin Berger led the restoration, assisted by Klaus Ziegler, Roland Bemsel and Gerhard Küchle, all of whom were involved in building the original 25 cars; and Eugen Kolb from the design department lent his knowledge, too.

'We disassembled the car and looked for original components. The body, the fuel tank and the engine were all original, but with some modifications,' says Berger. 'The tank still wore its original neck, blanked-off when the bodywork was altered, and the floor was still shaped to accommodate it. Inside, the steering wheel and switchgear are original; we just had to make new tape labels. And we had the same upholstery fabric still in stock.'

The car was scanned and digitised, and Kolb spent time poring over microfiche in the factory archive to find out which elements of the bodywork to keep and which needed to be (re)modified. The shape of the nose and front wings, the front air intakes, and the tail (which had been shortened) all needed to be corrected.

'In 1969 we had no CAD, no data transfer. Everything was put together manually, and quickly, we had so little time. So the restorers ran into problems!' smiles Klaus Ziegler. 'For them, the reality didn't always match the drawings.'

Gerhard Küchle worked on the engine. 'It had to be squeezed into the frame, tilted at 7° to fit. The injection pipes were plastic and we had to heat them with a hairdryer to make them fit,' he recalls. 'We found the original 1969 exhaust in one of our warehouses, and the engine bay now looks exactly the same as in period photographs.'

The 917 as a breed evolved quickly from the exact specification of chassis 1, and when it appeared at Le Mans for the first time, it was 30km/h faster than anything that had previously been driven there, using its huge power to exploit its low drag. But that lack of drag came at the expense of downforce, and the high speed came with the risk of exploding tyres.

Driver Kurt Ahrens, who had joined the Porsche factory

team in 1968 after racing Formula 2 cars, was instrumental in developing the 917. His car was quickest in practice at Le Mans in 1969 (a race that no 917 finished), and at the Zeltweg 1000km later that year he partnered Jo Siffert to score the 917's first victory. By 1970 he was contracted to John Wyer's factory Gulf Porsche Team.

'It was clear that we needed extra downforce over the rear axle,' says Ahrens. Legend has it that at the Österreichring, Wyer's chief engineer, John Horsman, noticed a pattern of dead gnats on the 917's bodywork, revealing the airflow – and the tail was clean.

'For three days, we tried everything. In the end, we attached aluminium sheets to the body. I went out and did a tentative lap. No lift. Second lap, a bit faster, still no lift. Third lap, I took four seconds off my time! It gave me goosebumps. I had to explain to Piëch, "Good news: it's four seconds faster. Bad news: it looks ugly!" The engine, the chassis, they were great from the start. We just had to work on the aero.'

And so the *Langheck* was born. 'By 1970 it was perfect for Le Mans. For me, it's the car of the century and I was part of its story! The speeds were unprecedented. Piëch was a fanatic when it came to top speeds.'

The rest, as they say… Well, I'm not going to say it. And you can hear about some memorable moments from the 917's racing career on page 120, where Paul Fearnley speaks to the drivers about their experiences behind the wheel. But what I will add is that the 917 was not only a formidable racing car, it was a looker, too. And who better to give us an insight into the way that Porsche blended form and function than the man who designed the McLaren F1, Peter Stevens.

'The lack of drag came at the expense of downforce, and the high speed came with the risk of exploding tyres'

1968 Porsche 917, chassis 1

Engine 4494cc horizontally opposed 12-cylinder, DOHC per bank, Bosch mechanical fuel injection
Power 580bhp @ 8400rpm
Torque 376lb ft @ 6600rpm
Transmission Five-speed manual, rear-wheel drive
Steering Rack and pinion
Suspension Front and rear: double wishbones, coil springs, telescopic dampers
Brakes Vented discs
Weight 800kg
Top speed 237.5mph

Right
The stars of Porsche's in-house design studio: from left to right, Dick Söderberg, Anatole 'Tony' Lapine, Hans Braun and Wolfgang Möbius.

Peter Stevens on the design of the Porsche 917

WHEN SOME OF YOUR BEST MATES were involved in a project as extraordinary as the Porsche 917, you listen, wide-eyed, to everything they tell you.

I've studied the early wind-tunnel results for the first 917, and it's clear that Porsche's engineers were looking for low drag – and that they took little notice of lift values at either the front or the rear of the car. They used a comparatively small-scale model in a fixed-floor tunnel, with no simulation of the ground moving beneath the car and no rotating wheels, so none of the figures achieved were really to be trusted on a track. At 250mph.

When lifting off the throttle or braking, the softly sprung nose would dip, changing lift to downforce at the front, while rear downforce disappeared – an alarming state of affairs on the Mulsanne Straight. Brian Redman remembers the 917 being initially 'incredibly unstable, using all the road at speed.' And so, for 1971, Piëch decided that the Porsche would develop a number of different versions of the car. Porsche's in-house design team, led by Anatole 'Tony' Lapine, submitted a proposal, as did the French aerodynamic research company SERA-CD. Another option on the table was the revised long-tail that we know today.

The car developed by the in-house group was a handsome machine with smooth surfaces and clever air management around the wheel wells – the result of much wind-tunnel work by studio aerodynamicist Hans Braun. Overall drag was low, while lift at the front and the rear was converted to downforce when a small rear wing was added. The SERA-CD car was a strange-looking beast with a very wide body and wheels tucked well within strongly radiused openings. The drag coefficient was undoubtedly low, but the frontal area was much larger than that of any other proposal.

The most interesting detail on both these cars was the small horizontal front splitter, un-noticed by just about every journalist at the time. It was almost certainly the first time a front splitter had been seen on a racing car.

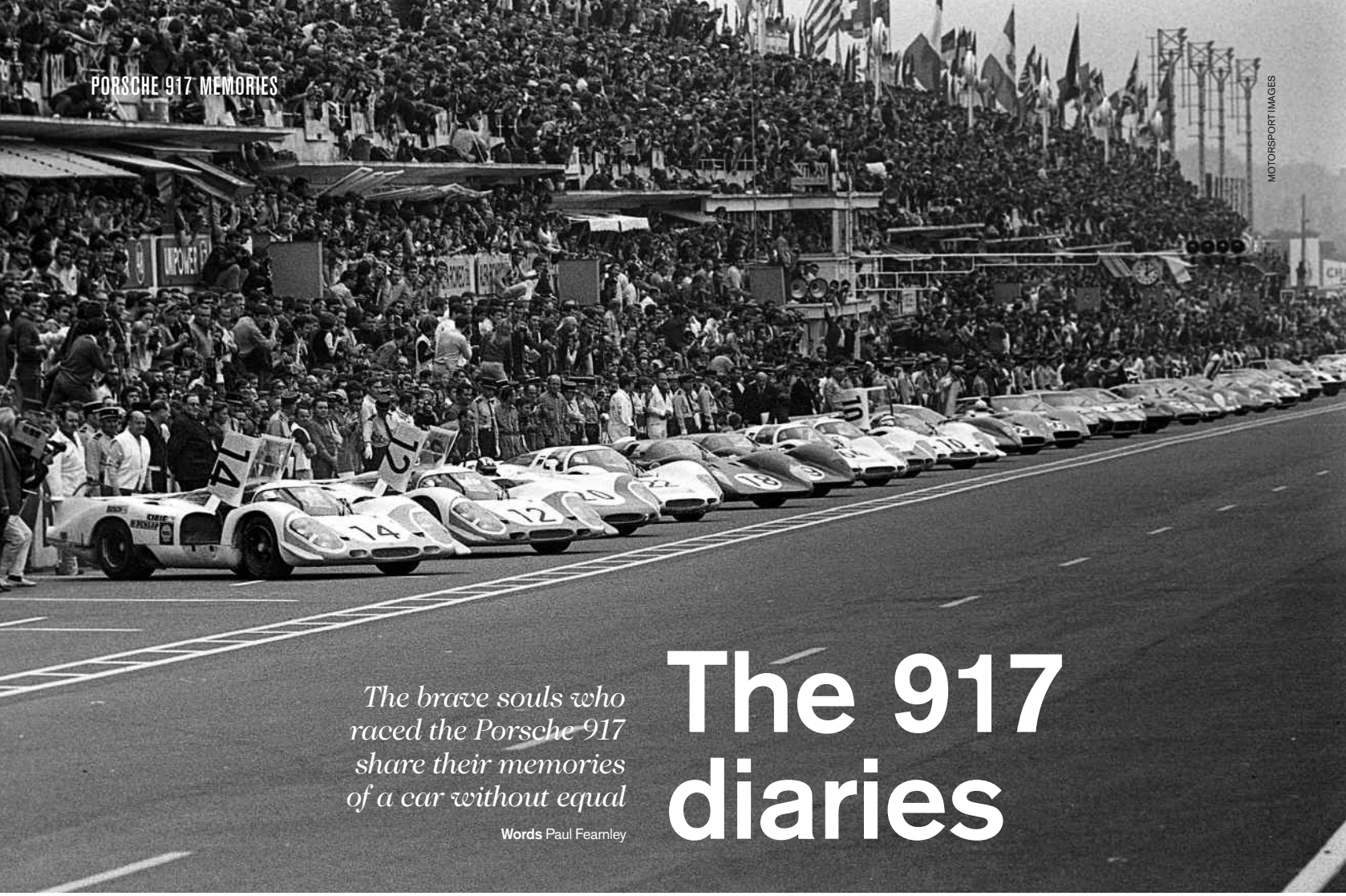
But with the race budget getting out of hand, Piëch cancelled the design studio car. At Porsche every part was 'lifed', so the scrap containers were full of beautiful racecar bits. Just about everyone in design had a coffee table made from a 917 rear wheel. No wonder money was leaking away.

Lapine's group, comprising design chief Dick Söderberg plus designers Dawson Sellar and Wolfgang Möbius, suggested to Lapine that he should get a signed agreement from Piëch that in exchange for cancelling their project they would have absolute control over the graphic design of all Porsche racing cars. Piëch agreed, and then had to bite his tongue when the wild 'Hippie' schemes appeared.

He had even more of a problem enduring *der Trüffeljäger von Zuffenhausen* ('the Truffle Hunter of Zuffenhausen'), better known as the Pink Pig, which was painted in the style of the cut charts you see at the butcher's shop. The car is described in official documents as being very fast, but in qualifying for Le Mans in '71, it was actually more than seven seconds slower than the new long-tail driven by Pedro Rodríguez. The car crashed due to brake failure (no-one had realised that the front brake cooling was inadequate on the poor old porker) and it was never raced again, but its livery is now revered at Porsche.

What's most fascinating to me about Porsche in the late 1960s is that, because the racing programmes existed to sell road cars by demonstrating the company's engineering prowess, it was important that the racing cars looked good – and that they looked like Porsches. Therefore the design studio was always quietly involved, helping to create cars such as the 908/03, which, for me, has always been one of the very best looking competition Porsches.

That car displays a clarity of purpose that the first 917, which was cobbled together too quickly, lacked. But then came the short-tail, which looked so right and worked so well. Then there was the revised long-tail, an extraordinarily effective racing machine but also a symphony of seductive curves and well-resolved surfaces. We designers are usually told that if a racing car wins then that makes it beautiful, or that aero performance is all that matters, but look through the amazing portfolio of 20th-century competition Porsches, headed by the 917, and it's clear you *can* have great-looking cars that are winners, too. Evo



MOTORSPORT IMAGES

The 917 diaries

The brave souls who raced the Porsche 917 share their memories of a car without equal

Words Paul Fearnley

1969

Geneva Motor Show

13 MARCH

Vic Elford Love at first sight. Porsche told me just one 917 would be entered at Le Mans, for Rolf Stommelen, and that it would break after six hours. Luckily I was maybe the only driver who got on well with Ferdinand Piëch, and I persuaded him I could do well if I treated it with kid gloves. Every driver except me hated that 917.

Spa 1000km

11 MAY

Brian Redman Knees jammed behind the wheel. Head rubbing the roof. I turned on that gigantic wiper and it did one sweep before flying into the pits. The car weaved from one side of the circuit to the other without you steering. It looked fantastic. Like a cheetah. But it was horrible. Manufacturers were concentrating on top speed even though Chaparral's wing car of 1967 had been effective.

Le Mans 24 Hours

14-15 JUNE

Elford My usual co-driver, Jochen Neerpasch, had been hurt, and I suggested Richard Attwood take his place. But Porsche didn't tell Richard what he'd be driving. He was horrified when he found out.
Richard Attwood They'd tested on an airstrip and never reached terminal velocity. They'd got up to perhaps 190mph. We were doing 235 and discovering an extra element of badness: down the straight, your rear-view mirror increasingly filled with rising tail.
Elford It was nasty. But it was 25mph quicker than anything else. Exiting Tertre Rouge, the other drivers queued on the right until I went by. They were more scared than I was. My rallying experience was probably helpful; a good rally car is inherently unstable.
Attwood After my first stint I had a blinding headache – two exhausts exited under each door – and my neck was wearing out already. Why did Vic like it?!
Elford We were 50 miles ahead after 20 hours. The eventual problem hadn't been anticipated: a cracked bell-housing. They tried the usual clutch remedies, pouring in Coke and extinguisher fluid, but we were out.
Attwood I didn't give a monkey's.

Österreichring test

15-17 OCTOBER

Redman Kurt Ahrens and I would do a few laps, come in and shake our heads. We changed everything, to no avail. It was a Porsche test but it was John Wyer Automotive's [chief engineer] John Horsman who spotted it: squashed bugs on the front of the car but none at the rear, except at the tail's tip. He had his mechanics modify the bodywork overnight. The prototype 917K ['K' for '*Kurzheck*', or 'short-tail'] looked like a pickup, but it was four seconds a lap faster already. Some management guys showed up, talked with the Porsche lot and left again. Didn't say a word to John.

Daytona test

THIRD WEEK OF NOVEMBER

Redman Porsche insisted on using synchro to help develop road-car gearboxes. It cost us 1.5 seconds a lap on a short circuit. And the flat-12 could *not* be over-revved. Forty hours at 8200rpm and it was fine. 8400rpm once, bent valves.

1970

Daytona 24 Hours

31 JANUARY – 1 FEBRUARY

Elford Piëch was getting hell for spending all the company's money

GETTY IMAGES

From left
Two 917s sitting pretty at the front of the grid at Le Mans in 1969 – but unfortunately neither would last the distance; the Gulf-liveried Siffert/Redman car is examined by the scrutineers ahead of the 1970 24 Hours.

on the 917. When John Wyer got sponsorship from Gulf in 1970, he was convinced his team was number one. The first chance with every mod, and if he didn't want it – well, that was surely that. He reckoned without Piëch…
Redman …who was very single-minded. The biggest risk he ever took was giving the go-ahead for the 917.

Targa Florio

3 MAY

Elford Piëch insisted I had a new 908/03, but I did a test lap in a 917 at his request. In second or third gear everywhere except on the 200mph seafront straight, I set the fourth-fastest time. But I was destroyed physically because the car leapt about so much. Plus you can't see very well from a 917 on mountain roads. But if we'd built a special one with softer suspension, I could have taken two minutes off my time.

Le Mans 24 Hours

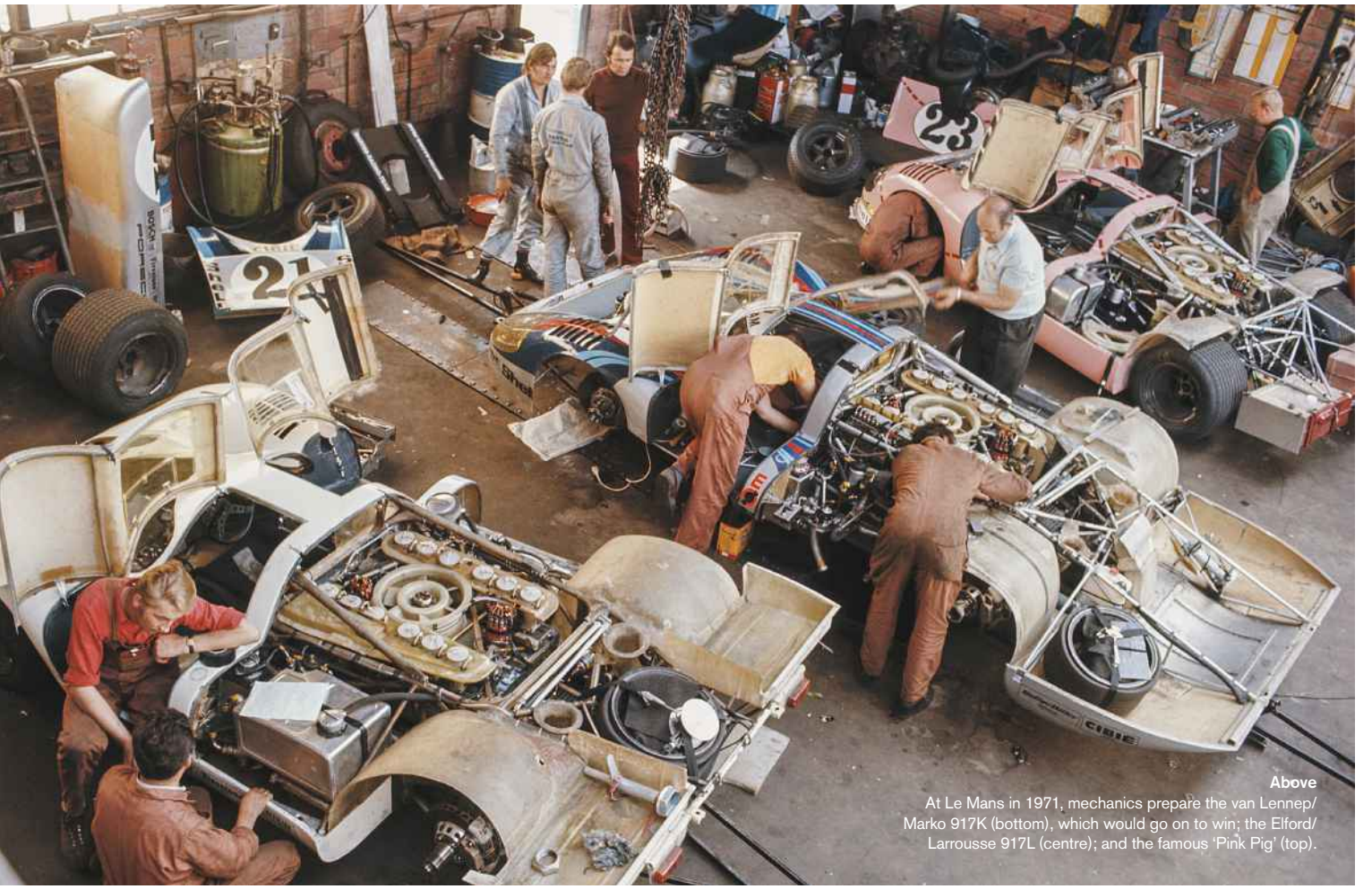
13-14 JUNE

Elford John Wyer said: 'We'll stay with the short-tails, thank you.' You could move the 917K around if you needed to, whereas once you were committed in the long-tail, you were really committed. Approaching the Kink at 250mph in the long-tail that I was sharing with Kurt Ahrens, I eased off and coasted through. But after a few more laps I took it flat. 'Christ! That was easy!' That lift that had been having such a destabilising effect? Now it was no problem.
Redman That was the result of a major aerodynamic effort with SERA-CD in France. The long-tail was now 20mph faster down the straight, though not much faster over a lap. JWA didn't want the car because it would have been prepared by Porsche, and Wyer trusted his engineering more.
David Hobbs Mike Hailwood and I had been invited to drive JWA's third 917 – a 4.5. The others had 4.9-litre engines. Mike was good in the wet but he got over-ambitious. He stayed out a lap too long on slicks and hit a crashed car. John Wyer said: 'Don't call us, Hailwood. We'll call you.'
Attwood Ahead of the race I'd requested a 4.5-litre short-tail and [co-driver] Hans Herrmann – the oldest of the bunch. He didn't want to die. We qualified way back, and I remember telling my wife there was absolutely no way we were going to win. But I'd read it all wrong: so many other drivers made errors that we were leading after ten hours. Keeping it on the island for the next 14 hours was incredibly stressful, but we managed. Huge downpours. Down to 60mph in places. They'd probably postpone the race in conditions like that today. But there wasn't even a pace car back then.

Goodwood test

LATE SUMMER

Derek Bell Ronnie Peterson, Peter Gethin and I were invited by JWA to test a 917 at Goodwood. I'd turned Wyer down for Ferrari in 1968, and when I wrote to say I was free again I got this dismal letter in reply: 'We have no idea as to your current ability.' I was the equal of Peter, but Ronnie was in the elite. I don't know why I ended up getting the drive – I was very inexperienced then – but I wasn't about to say no!



Above
At Le Mans in 1971, mechanics prepare the van Lennep/Marko 917K (bottom), which would go on to win; the Elford/Larrousse 917L (centre); and the famous 'Pink Pig' (top).

1971

Daytona 24 Hours

30-31 JANUARY

Hobbs The Europeans smirked: typical American bullshit and polish, they thought. But Penske's Ferrari 512M was more than a match for the 917. It didn't flex like the Porsche, and it handled better. Mark Donohue and I out-qualified the 917s in the Ferrari. That made me smile. Mark unfortunately got involved when a tyre blew out on Elford's Porsche during the race, and then some prat in a 911 ran into the Ferrari in the smoke and dust. We stuck a million yards of tape on the car and still came 3rd.

Spa 1000km

9 MAY

Bell There was a red flag at the end of the pitlane. Jackie Oliver snuck ahead in another JWA 917. For the next hour [mechanic] Jo Ramírez, who I liked immensely, waved me on, against team orders. I would have disappeared if I'd got back onto the front, but Jackie never made a single mistake.

Le Mans 24 Hours

12-13 JUNE

Jo Ramírez We drove the 917s to and from the hotel, a journey of 35km each way. At 70-80km/h, a 917 felt terrible. You could hear the pads moving. But when you put your foot down, everything became a uniform noise. My God! The drivers earned their money.
Gijs van Lennep The car I shared with Helmut Marko was a short-tail with side fins. We didn't know its chassis was magnesium, making it about 40kg lighter than standard. They had built two like it before: the first lasted a couple of hours in testing, the second ten hours or so. We had an oil tank, of whatever size was needed to meet the minimum weight, at the centre of the car. The handling was fantastic.
Jackie Oliver A union came loose and the pipe thrashed like a snake.
Ramírez Pedro [Rodriguez, sharing Oliver's car] arrived saturated with oil. In the moment he didn't register how hot it was. 'Another pipe! Quick! Go, go, go!'
Oliver They fixed it but driving it back to the pitlane had damaged the needle-rollers.
van Lennep We were worried about our cooling fan. So at every pit stop a mechanic replaced one of its four bolts. With about five hours to go, our brake discs were cracking. They were cross-drilled – that was a new thing back then. If we stopped to change them we couldn't win. So Helmut and I said: 'OK, we brake less.' Whatever it took to win. At the end, it was key out, and straight off to the museum with the car!

Watkins Glen 6 Hours

24 JULY

Bell I had an issue with the throttle linkage. I stopped on the entry of a fast corner. There's a photo of my arse in the air as I'm climbing over the engine to get a look. I used a bit of wood to wedge the engine at 2000rpm, and drove to the pits.

Barcelona 1000km

12 OCTOBER

Bell The team didn't bring enough fuel – the 917 requires almost unleaded – and the local stuff caused a misfire.

Paris 1000km

17 OCTOBER

van Lennep My 23rd race in a 917, and it was the 917's final win. I shared the car with Derek.
Bell It was the most memorable car I ever drove.

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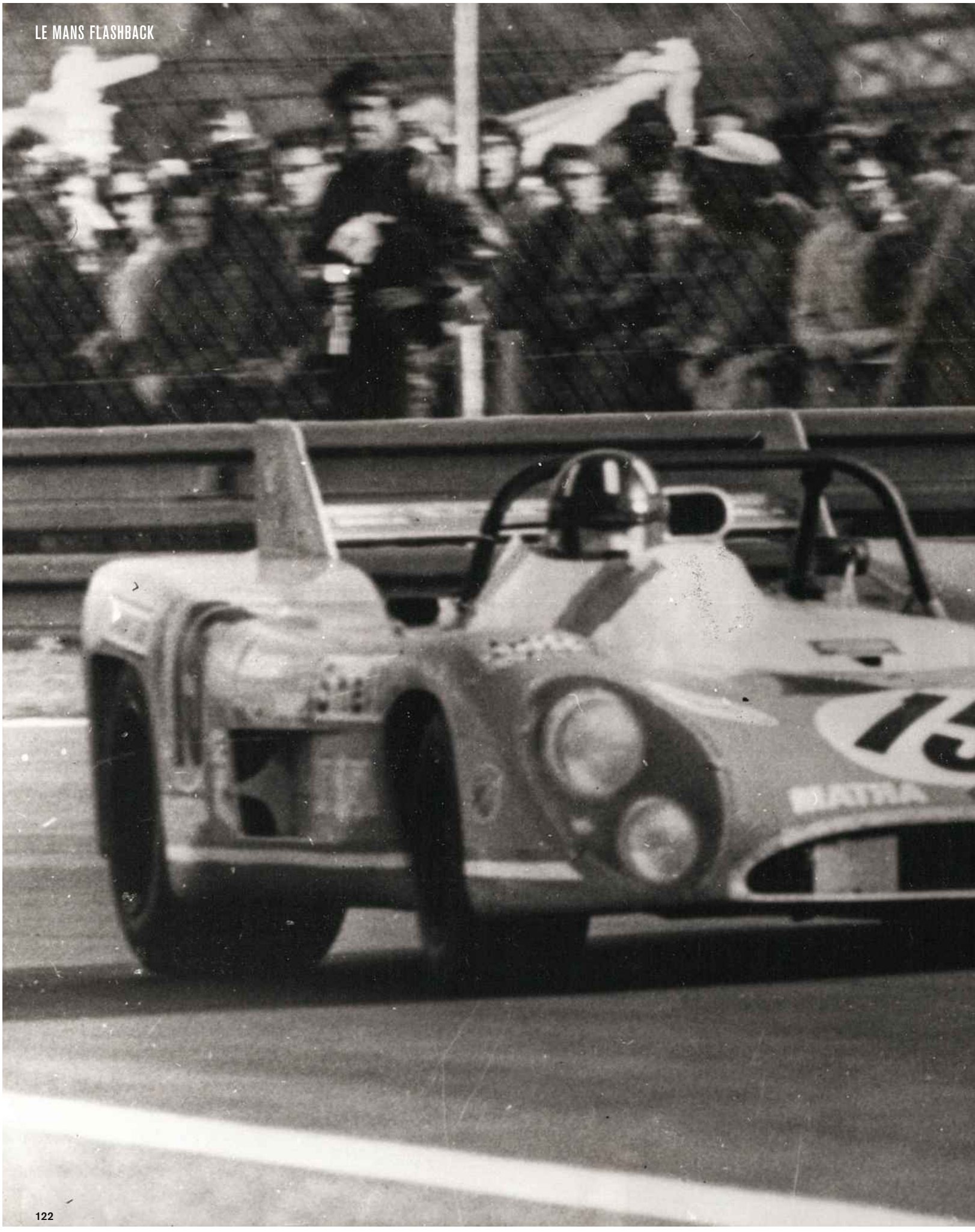
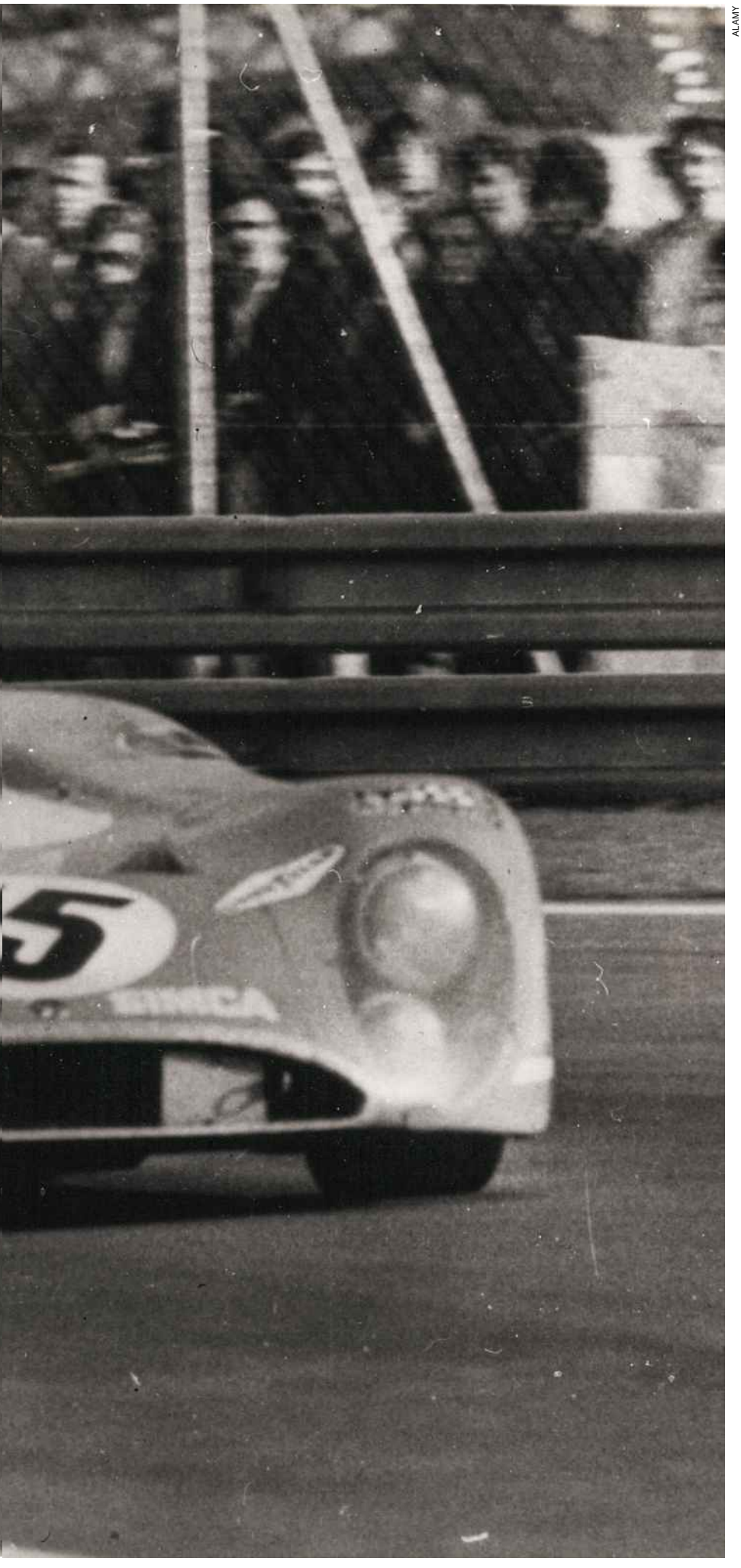




ALAMY

LE MANS FLASHBACK: 1972

HILL'S TRIPLE CROWN

When the Matra-Simca MS670 shared by Henri Pescarolo and Graham Hill took the chequered flag in the 1972 race, Hill completed the Triple Crown of Motorsport, becoming the only driver to win all three of the Formula 1 World Championship, the Indianapolis 500 and the 24 Hours of Le Mans. Another definition of the Triple Crown exists, we should note, which replaces the F1 Drivers' title with the Monaco Grand Prix. Use that one if you like; by that definition, too, Hill remains in a club of one. Given the nature of modern motorsport, Hill's achievement is unlikely to be replicated, although Fernando Alonso remains just an Indy 500 win away from joining racing's most exclusive club…

TRAILBLAZER

The Porsche 911 RSR Turbo was the first turbocharged car to race in the 24 Hours. John Barker climbs aboard for a memorable ride

Photography Alex Tapley

What a crazy car. I've seen plenty of pictures of the Carrera RSR Turbo 2.1, but to walk out into the pit lane at Rockingham Raceway and find it parked there is like walking into your living room and finding Keith Richards sitting on your sofa. Goodness knows what Porsche's rivals thought when the car was wheeled out at Le Mans in 1974.

The RSR Turbo was the answer to an audacious question: what do you need to do to make a 911 RSR competitive if you stick a 500bhp, turbocharged flat-six in the back? The great Norbert Singer, then just a few years into his career at Porsche, decided that the necessary modifications included the fitting of 15in-wide rear slicks and the most enormous rear wing. FIA Group 5 was a silhouette class but, because race cars exist to sell road cars, the RSR Turbo had to look like a 911, so that wing was painted black to make it (very marginally) less obvious.

Porsche built four 2.1 Turbos, all of which were given 'R' numbers. Only three were raced (the fourth was a development car), and this one, R13, was the most successful of the lot, finishing 2nd overall at Le Mans in 1974. Quite a feat when you consider that the RSR Turbo was the very first turbocharged car to tackle the 24 Hours, and that it lined up against a horde of proven, low-slung sports prototypes.

In comparison with the Matras, Lolas, Gulf Mirages, Ligiers, Chevrons and Porsche 908s on the grid, the RSR Turbo must have looked like a Funny Car. Its low, obviously 911 front end rises and then distends into caricature. The rear side windows are replaced with panels with NACA ducts, and the buttresses and wing extended the car's overall length.

Move around to the back and the hefty turbo hanging in the wide cut-out immediately draws your eye. Then you notice the original 911 tail-lights either side of it. Flanked by the vast rear wheelarches, the lights look so far inboard that you wonder if the original shell has been narrowed, but no: it's just that the inside edges of the road-roller-like rear tyres sit outboard of where a standard 911's 'arches would finish.

At Le Mans, it was as effective as it was arresting. The fastest of the sports prototypes qualified with lap times in the 3min 36sec range; the RSR Turbo was only about 16 seconds a lap slower than that, but it was about 20 seconds faster than the 3.0 RSRs. It proved remarkably reliable, too, and, despite issues late on, it could even have won outright.

You might imagine it to be the sort of car that needs a mechanic with a portable starter motor to churn the engine and get it going. It isn't.

‘THE DOOR FEELS AS LIGHT AS A CRISP PACKET, AND OFFERS ABOUT AS MUCH SIDE-IMPACT PROTECTION’

‘It’s a Porsche: it starts first time on the key,’ grins Simon Harper, who’s looking after it today. Our driver, Joe Twyman, straps in, turns the disarmingly normal-looking key poking out of the scrappy dashboard, and the flat-six fires up with a chug of dark smoke from the tailpipe. The sound at idle has some blare to it, but is surprisingly moderate given that the header pipes feed into the hulking KKK turbocharger and then go straight to atmosphere.

The engine note is hard-edged – though not coarse – as Joe pulls away and disappears out of sight. Simon, snapper Alex and I stand and listen, tracking the car by ear. It’s a bit hesitant at first, reluctant to pull revs, but it hasn’t been used in anger for many years and Joe is treating it respectfully.

As it comes past the pits on the banking, still far from full-throttle, a flat-six drawl ricochets off Rockingham’s stands. For me, this is the sound of Le Mans – the noise I went to sleep with and woke up to. By the third lap, the car is coming on song and the sound has a new element: a high-pitched whine reminiscent of a jet engine. ‘That’s the turbo,’ Simon observes. ‘It boosts to 1.4bar [20psi].’

The flat-six makes a claimed 450-500bhp at 7600rpm, and its precise capacity – 2142cc – was chosen to ensure that the RSR Turbo could compete in the prototype Group 5 class. Naturally-aspirated engines of up to 3.0 litres were allowed, but force-fed engines were subject to an equivalency factor of 1.4:1. To achieve that magic number of 2142cc, both the bore and the stroke of the base 3.0-litre RSR engine were reduced.

In a standard 3.0 RSR engine the cooling fan faces the rear, but here it sits on top, as in Porsche’s flat-12s of the same period. It’s a less energy-efficient arrangement, but worthwhile because cooling is improved – which means the engine can make more power.

Back in the pits, the turbocharger is still spooling down a good few seconds after the engine has been cut. The car is now giving off the rich-running, part-burnt-hydrocarbons aroma that old racers so often have.

It’s clear that R13 has never been restored. In fact, I could quite believe that since its last competitive outing it has only been washed to get the bugs off. The patina is glorious. There are nicks and scratches, the wing tops are

From left
Joe Twyman feels his way around Rockingham on a wintry day when grip was in short supply, even with the Porsche wearing chunky Avon wet tyres.

stone-pecked, and there's paint missing on an 'arch where another car's tyre has rubbed. The Martini stripes that flow around the car's curves were clearly applied by hand, and even the sponsors' logos are signwritten; you can see brushstrokes in the almost transluscent 'MARTINI PORSCHE' script, as if two coats of paint would have been unnecessarily heavy.

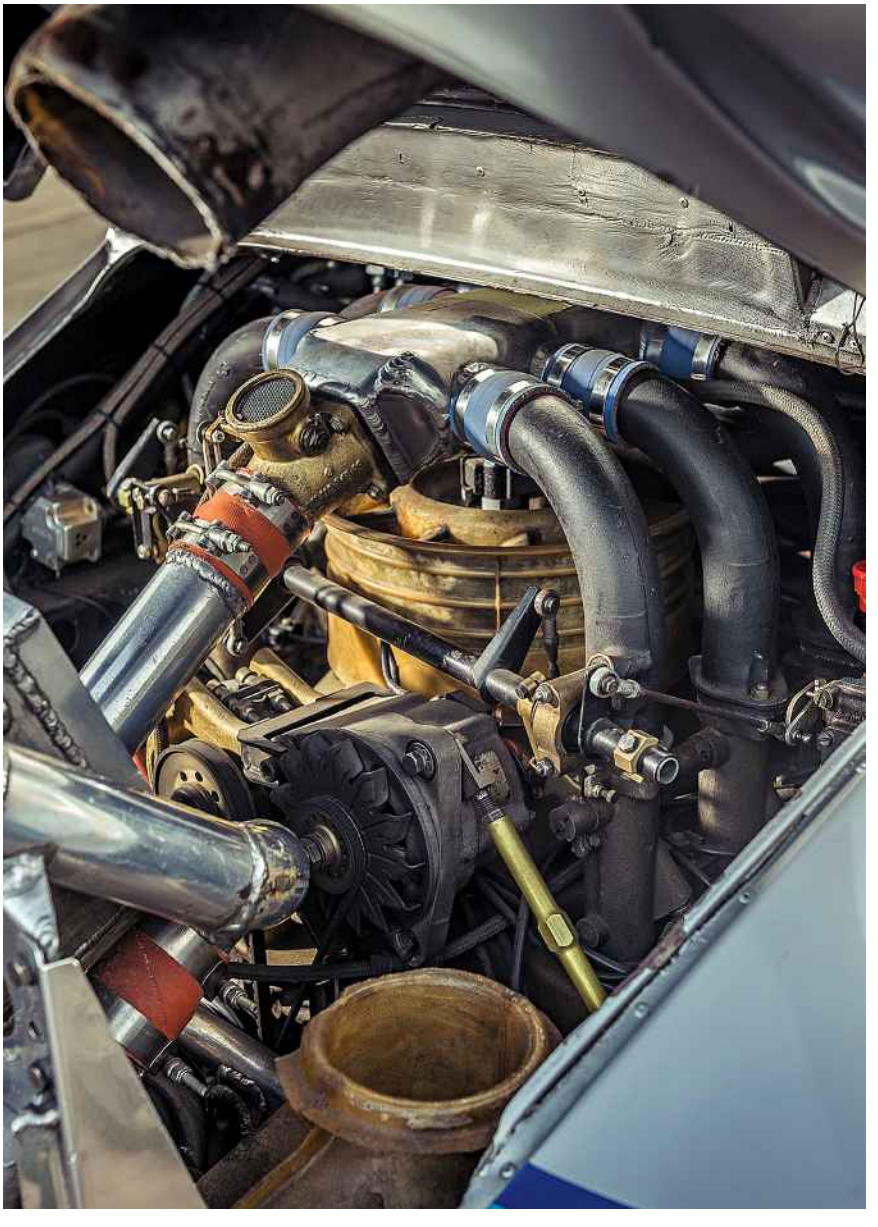
I'm only half joking. The more you look, the more you discover a fanatical commitment to weight-saving. The bonnet shield is a transfer rather than an enamel badge, and the doorhandles look like the standard metal ones painted black, but are in fact moulded from lightweight plastic.

Take hold, push the button and swing the door open. It feels as light as a crisp packet, and probably offers about as much side-impact protection because there are neither door bars nor cross-bracing for the aluminium rollcage. Yep, aluminium. Like an aircraft, this car was designed to fly, not to crash. Different times.

There's not much of the original 911 steel bodyshell left – just the floorpan, front bulkhead and a few sections at either end of the tub. Almost all the bodywork is fashioned from lightweight glassfibre. The roof is still metal, but it's made of aluminium to help lower the car's centre of gravity. The deep-dish wheels are the 917's 15in centre-lock magnesium alloys, which originally would have been shod with Dunlop slicks. On this bitterly cold day, though, they are instead wearing a set of Avon wets with Dunlop transfers.

The standard 911's torsion-bar suspension had already been replaced by a coil-spring set-up on the 3.0 RSRs, and the Turbo's chassis was evolved further still. Porsche came up with a lighter (by 27kg) arrangement of box-section aluminium arms and progressive-rate titanium coil springs, anti-roll bars and Bilstein dampers.

The upshot of all these weight-saving measures? With its 120-litre long-range fuel tank filled to the brim, the RSR Turbo 2.1 tips the scales at just 828kg. Less than a Lotus Elise.



‘ALREADY I’M TRYING TO IMAGINE WHAT SUCH A TAIL-HEAVY CAR MUST FEEL LIKE’

From left
The first force-fed engine to power a Le Mans entry; the RSR Turbo is every inch a competition car, yet it starts (first time!) on a standard key like any road-going Porsche of the period.

Weight distribution (32:68) would be improved if that big fuel tank was placed under the bonnet, but as it went from full to empty the front of the car would unload to the tune of 90kg, changing the dynamic balance. So you find the tank instead in the middle of the car next to the driver, leaving a scant 266kg over the front wheels.

Already I’m trying to imagine what such a tail-heavy car must feel like, and how the RSR will behave when its heavily turbocharged, small-capacity flat-six comes on boost. A colleague speculated that flooring the throttle would be like pulling the pin from a grenade… I’ll find out soon enough, if only from the passenger seat.

‘SEAT’ IS A GENEROUS DESCRIPTION. Really it’s a small scoop of glassfibre covered with a swatch of velour. It’s supported by an aluminium tube at the front and pop-riveted to the bulkhead behind. It looks like it would struggle to cope with a heavy bag of shopping, let alone my weight, but a Group 5 car has to be a two-seater. Technically.

‘Be careful, please,’ says Simon. I do my best, lowering myself in gingerly, and – ta-da! – it holds. I am proof that this RSR is a two-seater. It’s a bit cramped, mind. The centrally located fuel tank pushes the rear bulkhead forward and the footwell is shortened, too, so my knees are up around my ears. I feel like I’m squatting rather than sitting.

Joe fires-up the flat-six, snicks the lever into first and we trundle out onto the circuit, the gravelly-voiced boxer crooning away behind. A squeeze of throttle brings a whoosh of boost and a strengthening of the push.

Joe brakes early for the left that links to the infield section of the circuit, and as he swings the car in there’s a sharp *CRACK!* The fragile passenger seat gives way and I’m suddenly sitting a couple of inches lower, eyes now level with the top of the dashboard.

It means I loll drunkenly into the next corner. To stop myself impeding Joe’s gear-shifting, I have to shove my left arm down the side of the seat and my right hand high up into the corner of the rollcage.

As the lap progresses, Joe coaxes more from the engine, and I’m getting a flavour of its power. When the swell of torque takes hold of what little mass there is, it throws the RSR forward with fabulous ease. Shame there’s a misfire at around 5500rpm.

As period photographs show, it’s not a stiffly set-up car, so there’s some roll. Occasionally Joe throws in a stab of opposite lock for a reason that I, sitting on something about as stable as a beachball, cannot discern. I can guess, though: it’s just above freezing today, and when I stuck a thumbnail into the tread of those Avon wets earlier, the rubber felt like Bakelite. I’m seeing just a glimpse, then, of the RSR’s potential. Oh for a warm track and hot slicks! And a proper seat.

After three laps I can brace no longer. When we come to a stop in the pits, I apologise as I extricate myself. ‘It’s been repaired before,’ says Simon, pointing to a discoloured patch on the seat, the base of which has delaminated like puff pastry. Like many other parts of this car, the passenger seat was never expected to be in service into the next millennium. Following our shoot it will be mended again.

It's agreed that Joe will do two more laps so we can get some shots of the car cornering. Happily, the misfire clears and he stays out for a few more, getting his foot down to 6500rpm and treating us to a more dynamic display, the wastegate chattering its musical *chu-chu-chu-chu-chu* on the overrun.

'It's clear that they built it to be incredibly driver-friendly,' says Joe when we catch up in the pits. He's been fortunate enough to drive lots of great Porsche racers – 3.0 RSR, 935, 956, 962 – but this is his first time in an RSR Turbo 2.1. 'It's not a lot of effort to drive, as you'd expect of a car that's designed to be driven for long stints. The clutch has a long travel so, although it's heavy, it's not easy to stall, and the gearbox is good.

'There's nothing to catch you out. The steering is light despite not having assistance, and it's obvious there's not much weight at the front, but ultimately it seems easy to get into the apex.'

And that engine? 'Lag is much less than expected, but there's enough to make you think about it. Boost comes in quite low down, so as long as you've got it spooled-up early it's OK. In delivery it's a lot like a 956.

'If you really leaned on it, it would wheelspin – it's a beast waiting to be unleashed – but on those fat slicks I imagine the advantage it had over the 3.0 RSRs was acceleration out of the corners, and top speed.

'I think it could get quite warm in there. I was cold when we were just trundling around, but it heated up once it was going a bit and the fluids really started to flow through the cockpit. Imagine what it would have been like in France in mid-June.'

Second at Le Mans was outstanding, but drivers Gijs van Lennep and Herbert Müller could have been standing on the top step. While its sister car, R12, retired after eight hours with an 'engine-bay fire' (actually a massive blow-up at max speed caused by a crank failure), R13 enjoyed a near-perfect run and climbed up the order as many of the sports prototypes faltered. With six hours to go, R13 was comfortably in 2nd place behind the leading Matra-Simca of Henri Pescarolo and Gérard Larrousse when the Matra ran into gearbox trouble.

'ITS SISTER CAR RETIRED WITH AN "ENGINE-BAY FIRE" – ACTUALLY A MASSIVE BLOW-UP AT MAX SPEED CAUSED BY A CRANK FAILURE'


MARTINI RACING
Turbolader
Shell

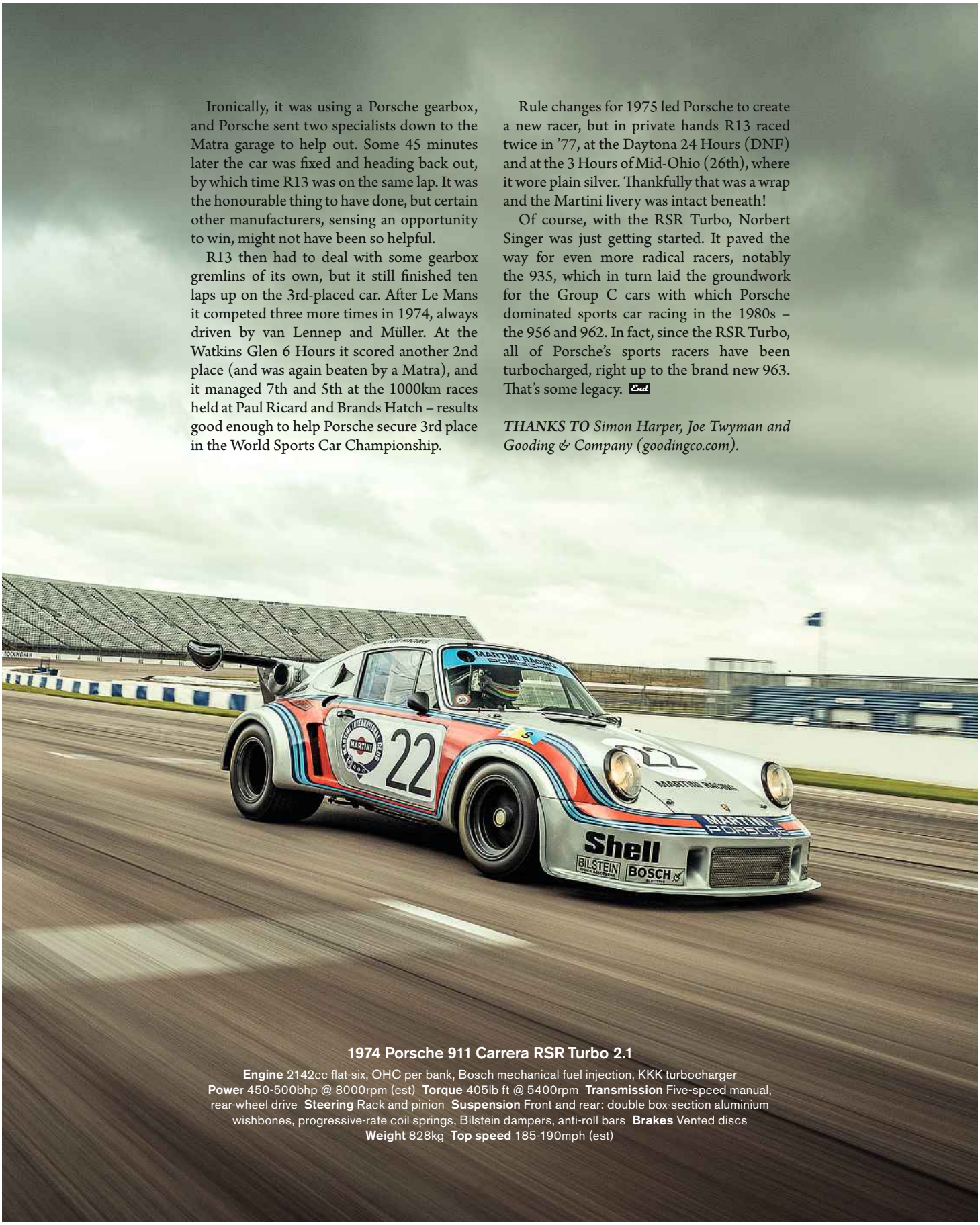
Ironically, it was using a Porsche gearbox, and Porsche sent two specialists down to the Matra garage to help out. Some 45 minutes later the car was fixed and heading back out, by which time R13 was on the same lap. It was the honourable thing to have done, but certain other manufacturers, sensing an opportunity to win, might not have been so helpful.

R13 then had to deal with some gearbox gremlins of its own, but it still finished ten laps up on the 3rd-placed car. After Le Mans it competed three more times in 1974, always driven by van Lennep and Müller. At the Watkins Glen 6 Hours it scored another 2nd place (and was again beaten by a Matra), and it managed 7th and 5th at the 1000km races held at Paul Ricard and Brands Hatch – results good enough to help Porsche secure 3rd place in the World Sports Car Championship.

Rule changes for 1975 led Porsche to create a new racer, but in private hands R13 raced twice in '77, at the Daytona 24 Hours (DNF) and at the 3 Hours of Mid-Ohio (26th), where it wore plain silver. Thankfully that was a wrap and the Martini livery was intact beneath!

Of course, with the RSR Turbo, Norbert Singer was just getting started. It paved the way for even more radical racers, notably the 935, which in turn laid the groundwork for the Group C cars with which Porsche dominated sports car racing in the 1980s – the 956 and 962. In fact, since the RSR Turbo, all of Porsche's sports racers have been turbocharged, right up to the brand new 963. That's some legacy. End

THANKS TO Simon Harper, Joe Twyman and Gooding & Company (goodingco.com).



1974 Porsche 911 Carrera RSR Turbo 2.1

Engine 2142cc flat-six, OHC per bank, Bosch mechanical fuel injection, KKK turbocharger **Power** 450-500bhp @ 8000rpm (est) **Torque** 405lb ft @ 5400rpm **Transmission** Five-speed manual, rear-wheel drive **Steering** Rack and pinion **Suspension** Front and rear: double box-section aluminium wishbones, progressive-rate coil springs, Bilstein dampers, anti-roll bars **Brakes** Vented discs **Weight** 828kg **Top speed** 185-190mph (est)

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TEAM EFFORT

The A443 was the distillation of everything Renault and Alpine knew about building a racing car. It looked nailed on for victory at Le Mans in 1978, until a fateful team order handed the win to one of its stablemates…

Words Richard Meaden **Photography** Gus Gregory

To make sense of the extraordinary investment, in terms of both francs and man-hours, that Renault Sport poured into its 1978 assault on Le Mans, you need a little context.

The World Championship of Makes provided the impetus for the sports-racing campaigns of the major manufacturers, but Le Mans remained the big prize even though it was a standalone event. In 1976 Renault was still dividing its attention between a World Championship effort and Le Mans, but after a bitterly disappointing retirement at the 24 Hours that year, the decision was taken to focus solely on Le Mans for 1977. It made no difference; the pace-setting Renault Alpines all expired. With Formula 1 activities eating ever more hungrily into the racing budget at Renault, there was a very real sense that 1978 represented the company's last chance to win endurance racing's blue-riband event – and the team threw everything at it.

Group 6 regulations introduced in the mid-'70s had cemented the shift from big-banger sports prototypes, such as the Porsche 917, to slick-shod, open-cockpit projectiles powered by a new kind of downsized, turbocharged engine, and none was more highly developed or exuberantly designed than the one-off A443.

Developed in secret with the hope of stealing a march on Porsche and its 936, the A443 built on the foundation provided by the already extremely fast A442B. With a longer wheelbase for greater stability, a larger turbocharged V6, better aerodynamics, and countless refinements aimed at improving reliability and fuel economy, the A443 existed on the cutting edge of sports-prototype design.

Though the aforementioned retirements at Le Mans in 1976 and 1977 might give you cause to think otherwise, Renault Sport was meticulous in its preparation for long-distance events. During the development of the A442 and A442B, countless tests were conducted at Paul Ricard and even at facilities in the USA. The team also ran somewhat risky high-speed aerodynamics tests on closed roads, with the cars reaching speeds in excess of 350km/h.

'Renault was an amazing outfit,' remembers Derek Bell, who was drafted into a team of Frenchmen for Le Mans in '77. 'When Gérard Larousse called to ask if I'd join up, I couldn't believe they actually chose a Brit! Though by then I had already done seven Le Mans 24 Hours, winning in 1975 with Jacky Ickx. Gérard said that before the race there would be a lot of testing to do. My God, what an understatement that was! The guys in the team were incredible – mentally driven like I had never seen before.

'Remember I had raced for Porsche; they had been there and done it all. At Porsche it was the same every year: "OK, lads, it's Le Mans time again! Let's get sorted!" All the guys knew what to do, but they didn't go much for change. Renault was young, dynamic. No disrespect to the other teams I have been with, but I have to say Renault was the most refreshing of all of them. A serious, going-places outfit. Every time they went testing it was a big deal.'

Above
Writer Meaden picks up a few tips from the Renault Classic team ahead of his test at Dijon-Prenois; and out on track in the A443 – mercifully without the famous Perspex canopy that turns the cockpit into an oven on a sunny day.

‘THE TEAM ALSO RAN SOMEWHAT RISKY HIGH-SPEED TESTS ON CLOSED ROADS, THE CARS REACHING SPEEDS IN EXCESS OF 350KM/H’

The test regime was intensified in the build-up to Le Mans in 1978. The proven (sort of) A442s and the new A443 covered tens of thousands of kilometres in an effort to expose any flaws and root out any weaknesses in the team or its strategy. The budget for the Le Mans effort ballooned to 8,273,000 francs – just shy of £1m, a massive sum for the time. The pressure was on like never before.

Le Mans is always a war of attrition and neither Renault nor its German rival, Porsche, was taking any chances, with each manufacturer entering four factory cars. Pole position went to Porsche thanks to a record-breaking lap from Jacky Ickx in the first qualifying session. The Renaults found more pace in the second qualifying session, the A443 eventually posting the second-fastest lap in the hands of Patrick Depailler to secure a front-row slot. With the next three rows of the grid filled with the remaining works Renaults and Porsches, the scene was set for an epic battle.

One of the more memorable features of the A442 and A443 was the bizarre Perspex bubble canopy. It boosted top speeds by some 5mph, but it also made the cockpit unbearably hot, with just a letterbox-like slot in the front to let in cool air and offer a distortion-free view of the road. For the tall guys it made things horribly cramped, too. Jean-Pierre Jabouille could barely fit in the A443. He and Depailler tolerated the canopy for qualifying but ditched it for the race, while Jean-Pierre Jaussaud overruled co-driver Didier Pironi and elected to stick with it on their A442B.

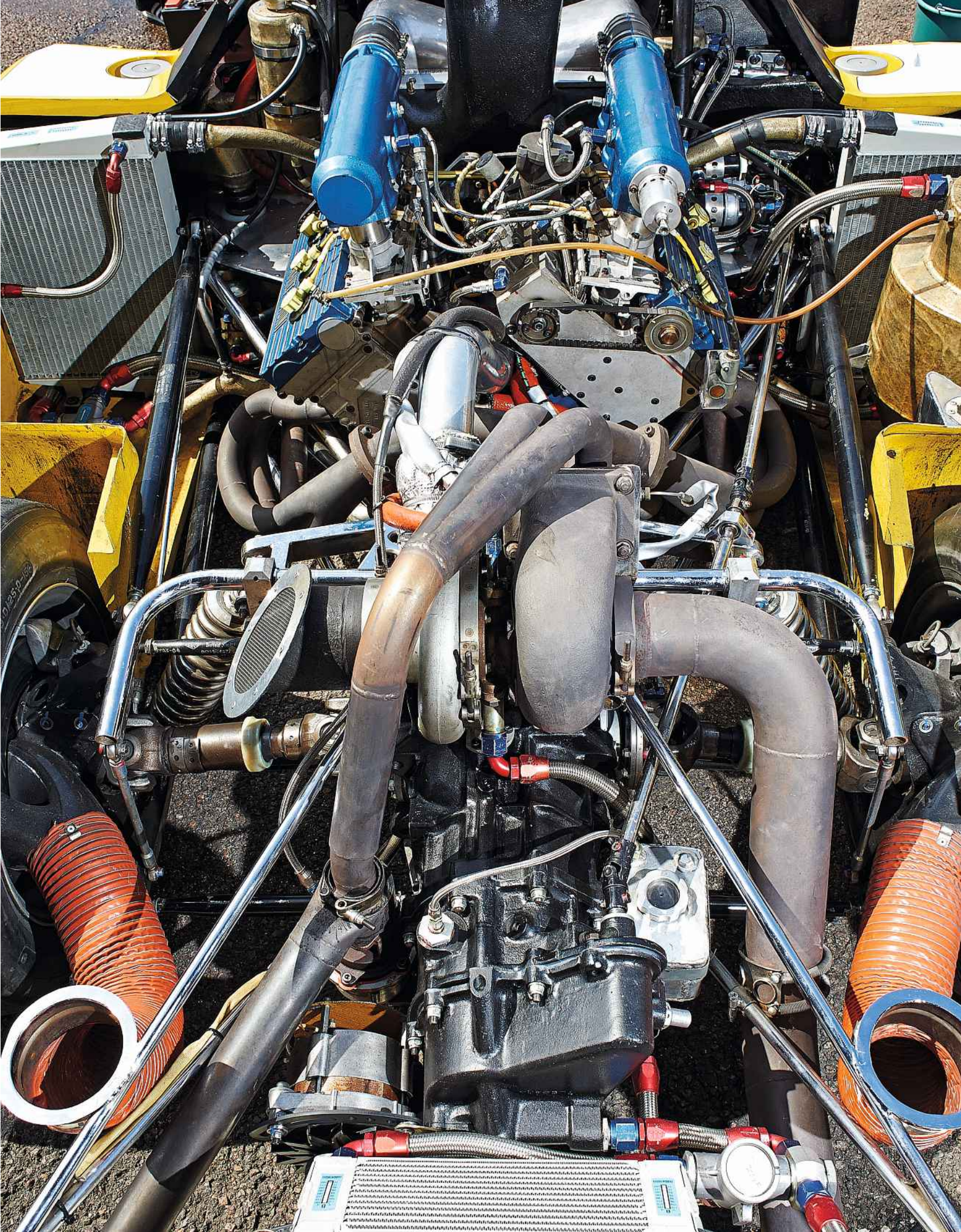
The race began in perfect conditions and Jabouille wasted no time in asserting himself. By the end of the first lap he had an 11-second lead over Ickx's Porsche 936. Drama came quickly, with the 936s of Ickx and Hurley Haywood both pitting on lap two for heat-related fuelling issues, and by the fourth lap the A443 led from two A442s, much to the partisan crowd's delight.

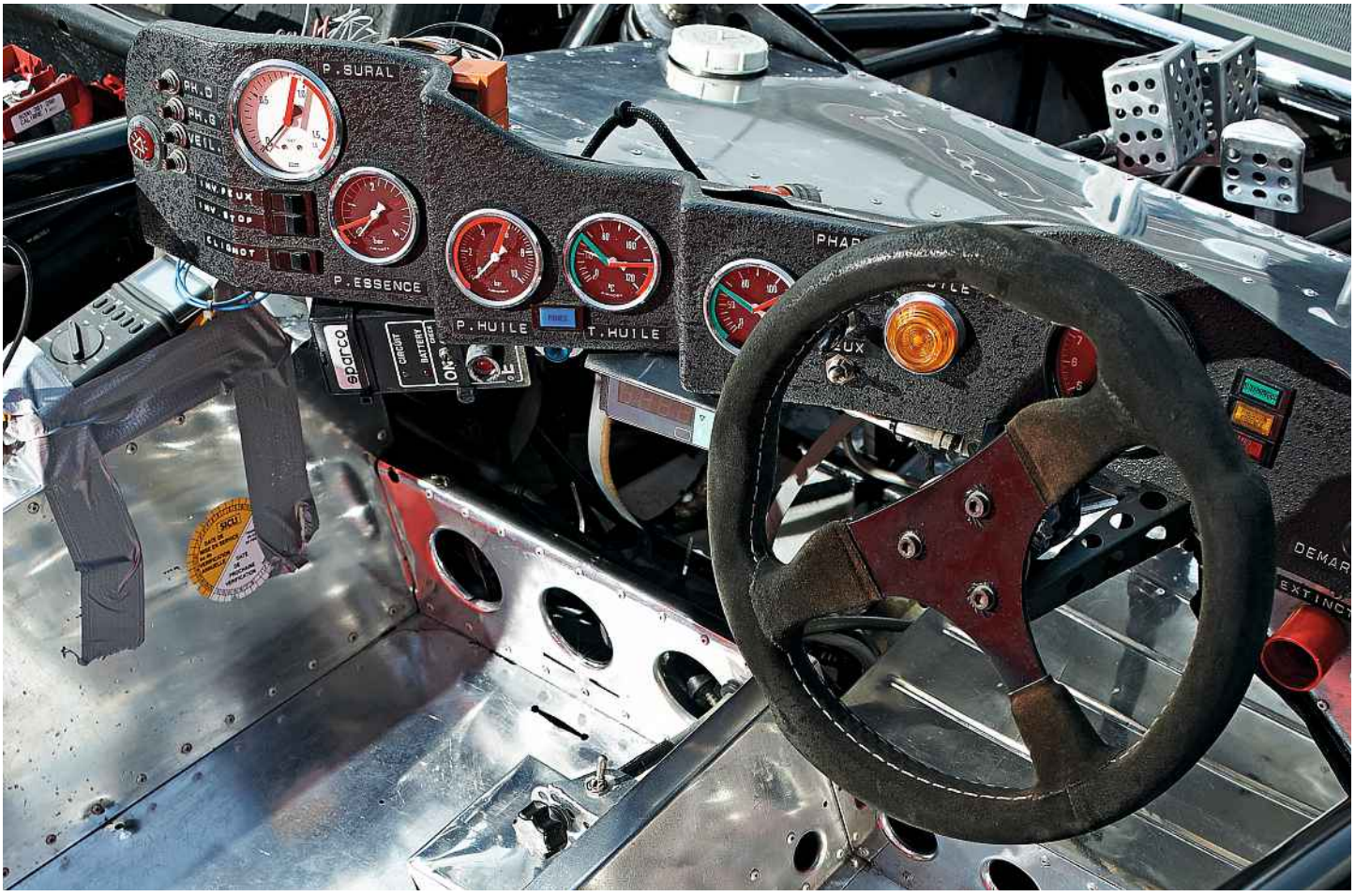
As darkness fell the Porsches continued to falter, while the Renaults ploughed on, the lead swapping between them with the ebb and flow of pit stops. By midnight Jabouille and Depailler were back at the front after stints that saw the pair lower the lap record half a dozen times.

By morning the 936 of Ickx and Bob Wolleck had mounted a comeback and was now in second place, two laps behind the A443, which was suffering from wheel vibrations but otherwise going like a train. When the chasing Porsche stopped with transmission issues just before 9am and took more than 40 minutes to rejoin the race, victory looked to be within Renault's grasp. Keen not to take unnecessary risks, the team instructed Depailler to use a device fitted to all four Renaults before the race, which would allow the boost pressure to be reduced to make life easier for the engine. It was the only component on the car that hadn't been subjected to the relentless testing regime…

Twenty-one minutes later Depailler was stationary at the side of the track, surrounded by a cloud of smoke, the engine having suffered what was later diagnosed to be a piston failure caused by a fuelling issue directly related to lowering the boost. The 443's race was run.

Right
The 2.1-litre V6 suffers from monumental turbo-lag, but is fantastically potent once on-boost, as Renault's rivals learned at Le Mans back in 1978.





The Pironi/Jaussaud 442B inherited the lead and held it, even as the clutch deteriorated and Pironi cooked under the canopy while driving a final, gruelling double stint. Weighing 7kg less than he had at the start of the race, Pironi was virtually desiccated as he took the chequered flag, but after being plied with water he was sufficiently revived to make the podium celebrations. Renault had won Le Mans!

The A443 might not have been the car that delivered the win in the end, but Renault has never forgotten the part the car played. Today the A443 is owned by the company's heritage division, Renault Classic, but it's no dusty museum piece. It's regularly used for demonstration runs, and is a crowd favourite at the biennial Le Mans Classic.

It's not hard to see why. When I first spot the car at the Dijon-Prenois circuit, it stops me dead in my tracks. Unlike today's LMP1 cars, which trade beauty for brutal functionality, the A443 is mesmerising. I'd be happy simply to stand and stare, but Hugues Portron, director of Renault Classic, has kindly agreed to let me get behind the wheel.

I'm a little disappointed to see the A443 isn't sporting its bubble canopy, even though sweltering beneath it would be a horrid experience. With the canopy absent, climbing in is a just matter of swinging your left leg up and over the side of the cockpit, plonking your foot down on the seat, and hopping slightly awkwardly as your right leg follows.

Then comes the tricky bit: you support your weight on the two hefty tubes that dive down either side of the cockpit from the top of the rear bulkhead, and thread your pins down into the footwell. Your ankles and shins clout an array of metal objects on their diagonal route to the pedal box, which is offset so crazily to the right that it feels like you're driving side-saddle. Best not to think about how far forward your feet sit in relation to the front wheels…

Once you're settled into the seat, the A443 is surprisingly comfortable. The view ahead is dominated by the stepped dashboard, which runs the full width of the car and sports an array of simple analogue dials that indicate the car's vital signs. With the slave battery connected and a '*C'est bon!*' from the Renault Classic guys, it's time to press the starter button and awaken the 2.1-litre turbocharged V6.

After a few churns of the starter motor it fires into life, angry and urgent, each squeeze of the throttle eliciting an unmistakable blare from the exhaust and a lazy spool from the turbo. The clutch is heavy to depress, and some muscle is needed to pull the gearlever left and back to find the dog-leg first gear. Despite a few nerves I manage to get out of the pit lane without stalling, and head out onto the circuit for a few learning laps.

Portron has recommended double-declutching when changing up as well as down, for the gearbox was built with durability rather than sweet, sharp shifts in mind. You can certainly sense inertia in the rotating masses of the 'box, and bigger-than-average teeth attempting to mesh with one another. Still, as long as you're deliberate with your inputs and synchronise the pumping of your left leg with a firm, accurate push or pull of the gearlever, it swaps cogs

Above
Some gymnastics are required to get behind the wheel, ease of ingress/egress having been about as much of a priority for the designers as the safety of the driver's legs, which lie an awfully long way forward in the car – but it's pretty spacious once you're installed.

1978 Renault Alpine A443

Engine 2138cc V6, DOHC per bank, Kugelfischer mechanical fuel injection, Garrett T05 turbocharger **Power** 520bhp @ 9500rpm
Transmission Five-speed manual, rear-wheel drive
Steering Rack and pinion **Suspension** Front and rear: four-link, coil springs, telescopic dampers
Brakes Vented, cross-drilled discs
Weight 750kg **Top speed** 224mph

‘YOUR HEAD BOBBLES ABOUT IN THE SLIPSTREAM THAT PASSES OVER THE OPEN COCKPIT’

smoothly and swiftly enough. And the gate is sweetly sprung and well-defined, its centre bias helping you navigate your way either side of the second/third plane without getting lost on the way to or from fourth and fifth.

After a quick courtesy call back to the pits to make sure all is well with the car, I’m sent back out to drive as fast as prudence and courage allow. What strikes you first is how tall the gearing is. With five ratios spanning 230mph there are inevitably a few gaps, but what strikes you next is how the turbocharged V6 gets on top of each gear as torque begins to build, then rips through the last few thousand revs as the boost really hits home.

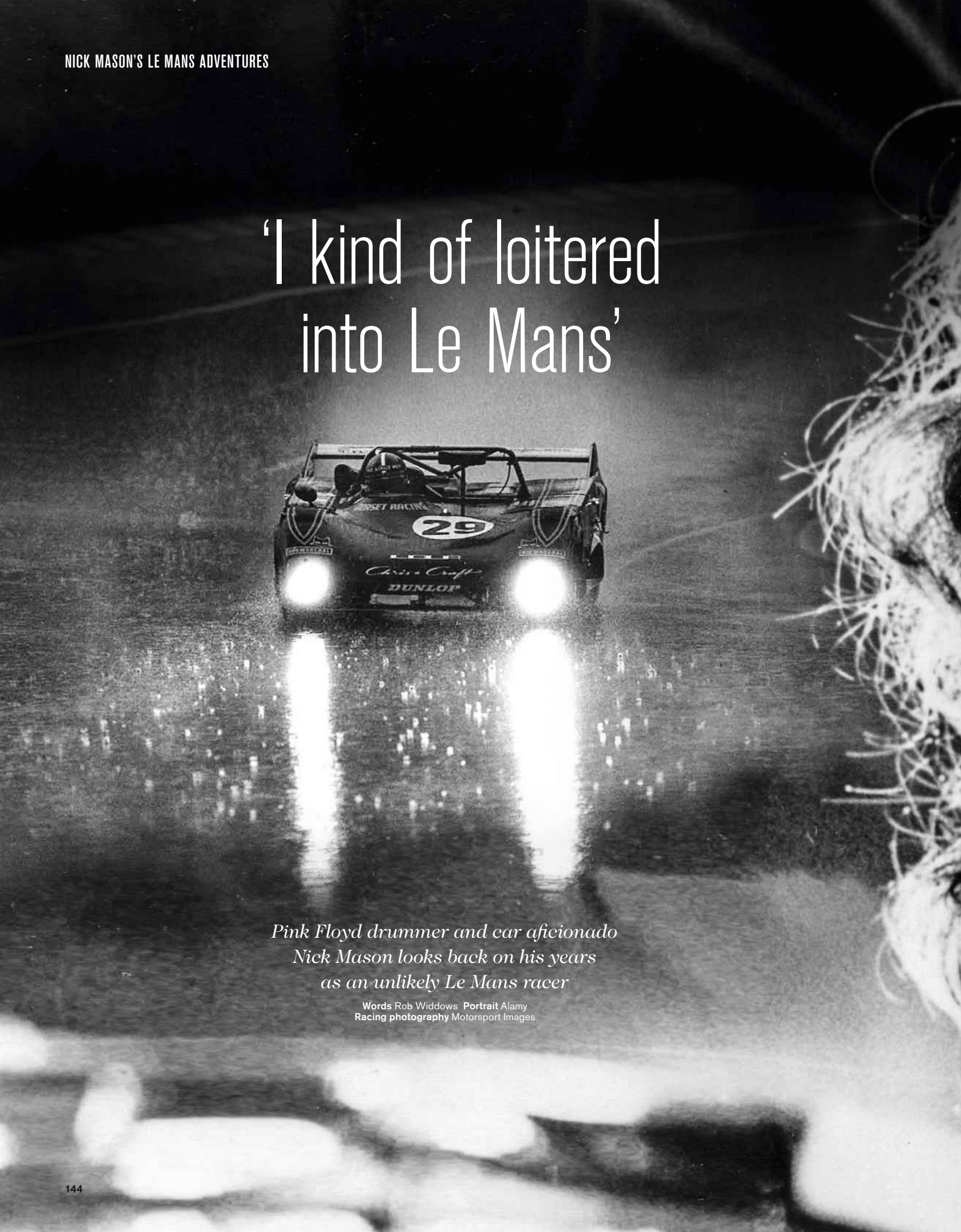
Second and third gears are the order of the day through the twists and turns of Dijon-Prenois, the big yellow car taking great bites out of the 2.4-mile lap with every surge of boost. Apart from the endless downhill-uphill Courbes de Pouas and the long main straight that follows, Dijon is nothing like Le Mans, but trying to get to grips with the A443 here is great fun. The car is keen to change direction, yet it feels stable and faithful to your inputs. There’s massive grip from the slick tyres, and as you gain confidence and carry more speed, you get the magical feeling of that mechanical grip being augmented by downforce.

As you might expect, there’s considerable turbo lag, but I’m beginning to get a tune from the A443. The engine is a force of nature, gaining exponentially in ferocity as that massive turbo begins to spin. Your head bobbles about in the slipstream that passes over the open cockpit, but the view out is excellent, with the white, louvred tops of the wheelarches framing each approaching corner and making it easy to position the car.

Thanks to the large-diameter steering wheel you only have to make modest steering inputs, with even the 180º Parabolique requiring no more than a quarter-turn of lock to negotiate, so overall the A443 doesn’t feel an especially physical car to drive – but then I’m not doing a three-hour, flat-out double stint on a hot day.

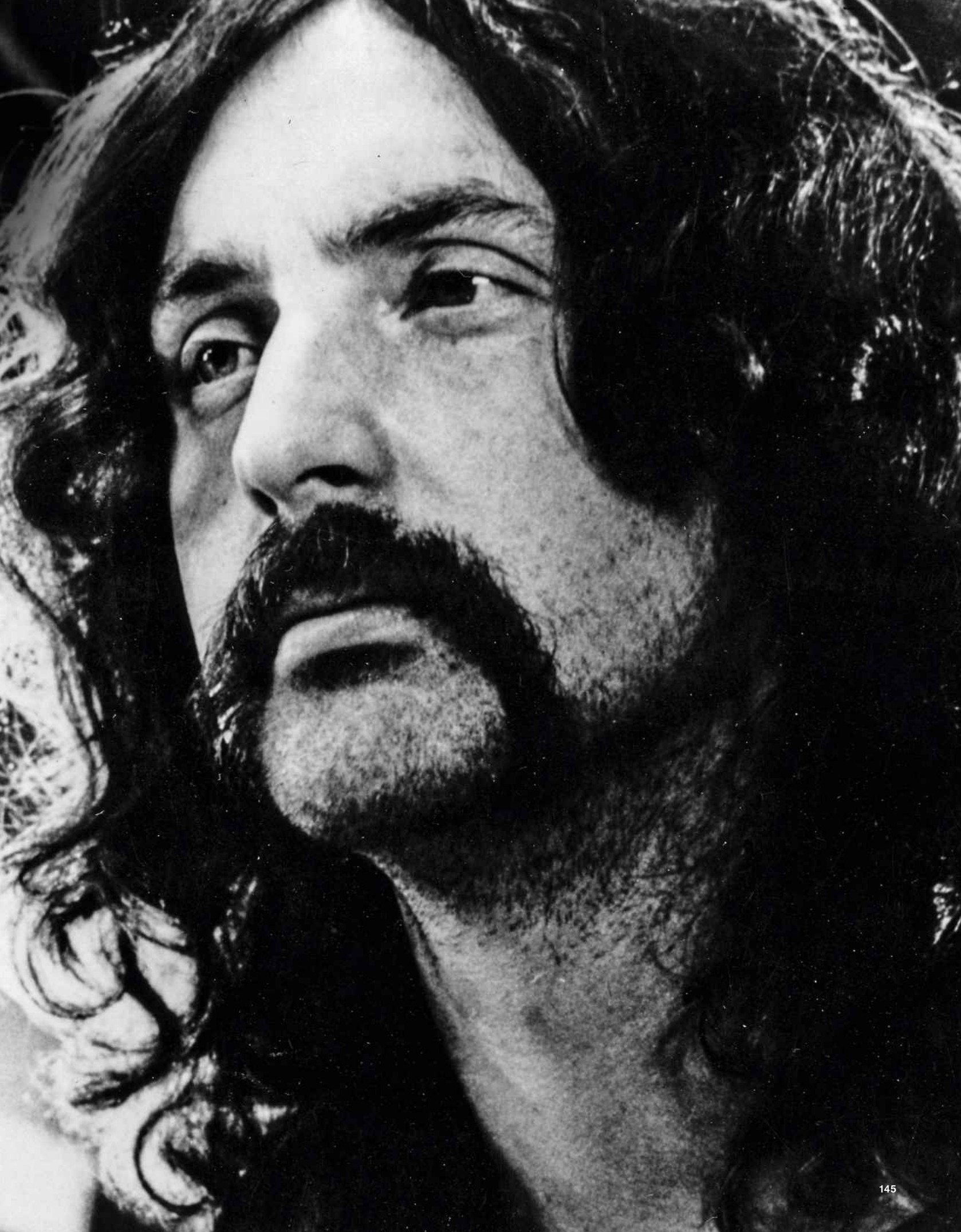
The calm steering must have made the A443 a joy to guide through the super-fast curves at Le Mans, and the car’s boundless straightline speed would surely have been exhilarating, if a little daunting when spearing down a chicane-free straight Mulsanne Straight at night. Depailler and Jabouille were no doubt crushed when they had to retire from the lead in ’78, but they had contributed to a win that was celebrated across France – and they’d had the privilege of racing a very special car indeed. End

'I kind of loitered into Le Mans'



Pink Floyd drummer and car aficionado Nick Mason looks back on his years as an unlikely Le Mans racer

Words Rob Widdows **Portrait** Alamy
Racing photography Motorsport Images



'It wasn't exactly a burning ambition,' Nick Mason says of competing in the world's greatest test of man and machine. 'Bear in mind that at the time I'd never raced anything more modern than a [Ferrari] 250 GTO. I used to have a T-shirt that said, "Some men strive for fame; this man loitered into it," which sums it up for me. I kind of loitered into Le Mans.'

The opportunity arose in the spring of 1979, when he met racing enthusiast Brian Joscelyne at a memorial service for AC Bertelli. Right place, right time, and by that stage Nick had made a few quid as the drummer of Pink Floyd. 'He asked me if I'd like to do Le Mans that summer. I just laughed. Like I said, I'd never raced a modern car, let alone for 24 hours. But Brian made it all sound so easy, no big deal, so for the princely sum of £3000 I became part of Dorset Racing Associates, a wonderful group of committed amateurs. They were a delightful crew, with a Lola T297 Cosworth. I still have the car today.'

A few weeks earlier, at the beginning of April, Pink Floyd had decamped to France to begin work on their 11th album, *The Wall*, at a studio near Nice. Nick and band manager Steve O'Rourke had driven down there, stopping at Le Mans on the way, of course. 'I'd never been there,' Nick says, 'and it was all a bit daunting, driving down the Mulsanne Straight. Everything was so big compared to what I was used to at, say, Silverstone. La Sarthe is a place built for giants. Steve was so inspired that he said he wanted to get involved, and he did, getting a drive in the Ecurie Francorchamps Ferrari 512BB – which, funnily enough, is also in my collection now.'

In the May, Nick finished all the drum tracks for *The Wall*. For reasons that need not concern us here, the recording of the album had not been the most harmonious of creative processes, but he was now free to stash the drumsticks and concentrate on racing. 'My bits were done, so I wasn't going to let anyone down if things went badly wrong at Le Mans,' he says, deadpan. He had time for some fitness training and some laps in a modern racing car at the Winfield Racing School at Paul Ricard, with instruction from Simon de Latour. His maiden outing in the 24 Hours was getting closer by the day.

'I was very nervous about all of it. The whole thing was bordering on terrifying. First time racing at night, first time in a car with a wing. But the Lola wasn't one of the truly quick cars. The team was incredibly supportive; I'd be sharing the driving with Brian, Tony Birchenhough and Richard Jenvey, who were all quite relaxed and had a few words of advice.

From top
First time out, 1979, in the Lola T297 run by Dorset Racing Associates; Nick was back in the same car the following year, but had to contend with much less helpful weather conditions second time around.

From top
The BMW M1 that Nick shared with Richard Down and Pink Floyd manager Steve O'Rourke in 1982; leading here is the rather scary Dome RC82 that Nick drove in 1983.

'Use the mirrors, don't look to the side,' they said. I only forgot that tip the once: I went to check behind me, and the wind got underneath my helmet, wrenching my head back so I couldn't see anything. Luckily I was going in a straight line at the time.'

The rest of the Dorset Racing drivers managed to keep it on the road, too, and the Lola finished 18th overall and 2nd in class, and won the Index of Performance trophy. (Steve O'Rourke, meanwhile, finished 12th in the Ferrari 512BB, which he had shared with Jean Blaton, Nick Faure and Bernard de Dryver.)

'There was very little drama. Good weather, the car was great to drive, and I did about seven hours in total. I didn't sleep much, but the breaks are a chance to rest. The adrenaline makes it very unlikely that you'd fall asleep at the wheel, and after a while you settle into a rhythm. Going into the dusk was my favourite time. The headlights come on and it's easier to see the quicker cars coming up behind. Same at night – you only need to glance in the mirror. Also it's cooler at night, which is good for the car.

'Early morning can be tricky: there's often a low mist hanging over the circuit, which is quite alarming. It was much easier back then – not a flat-out sprint like today, and none of the extreme *g*-forces the guys have now. What they do is very impressive. At the end I escaped the "rock star" treatment from the press because Paul Newman had come a brilliant second in Dick Barbour's Porsche 935. The paparazzi were all over him at the end, which was just fine with me. The last thing you want as a junior driver in a team is to have the media all over you.'

Maybe he should have left it at that, but the bug had bitten. 'I went back the next year with Dorset Racing and the Lola, this time sharing with Martin Birrane and Peter Clarke, and we got through [finishing 22nd overall and

Below
From far left, drivers René Metge, Nick Mason and Richard Lloyd with the GTi Engineering Porsche 956 at Le Mans, 1984.

'THE DOME RC82 WAS QUICK IN A STRAIGHT LINE, BUT IN EVERY OTHER WAY IT WAS DREADFUL – TRULY FRIGHTENING'

3rd in class] but it wasn't quite so enjoyable. It was very wet, and the spray made it more demanding. On the straights in the rain the visibility is less than ideal.'

After a year away, Nick was back at La Sarthe in 1982 with EMKA Productions, which Pink Floyd fans will recognise as the name of O'Rourke's management company. O'Rourke, Nick and Richard Down took turns in a BMW M1, running in the same IMSA GTX class as the all-conquering Porsche 935s.

'It was very enjoyable. A lot of the new Group C cars were breaking down and we had a chance of being right up there. The BMW was a great car, and we ran well for 266 laps before engine trouble right at the end of the race. Le Mans can be heartbreaking, and when things go wrong, they go wrong very quickly – and you can't just limp round that circuit with the car breaking down.

'The next year, in contrast, was my least enjoyable Le Mans.' Nick, along with proven talents Eliseo Salazar and Chris Craft, had signed up to drive Dome Racing's, Cosworth-powered RC82 Group C car. 'It was quick in a straight line but, sadly, that was about it. In every other way it was dreadful – truly frightening. It was just so stiff. Going over the bumps under the Dunlop Bridge it would unweight itself and the wheels would spin in fifth gear as it jumped around. When the clutch eventually packed up I thought "Oh good, that's over."'

There was one last outing in 1984, when Nick joined forces with Richard Lloyd and René Metge to drive a Porsche 956 run by Lloyd's GTi Engineering team. This was the year when Porsche fell out with the Automobile Club de l'Ouest over new fuel regulations and withdrew the Rothmans-backed works cars. Porsches did, however, take the first seven places, with the Joest Racing 956 of Henri Pescarolo and Klaus Ludwig leading the way.

'We had Richard's Porsche 956 and we'd been due to do a lot of filming in a deal with Rothmans, but the argument between Rothmans and the ACO put paid to that. I'd been promised a drive, though, so I went with Richard and René, which was terrific. Anyway, after about 140 laps we were disqualified. The reason given was that we had outside assistance. That was that.'

So, two strong finishes, two retirements and one disqualification – about average for a Le Mans career. But why was that the end of the adventure?

'I went back to work. We were back in the studio after Roger [Waters] left the band, and it was just too much. You need time off to go racing. Also, I had raced the 956, and where do you go from there?' End

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LE MANS FLASHBACK: 1983

THE PORSCHE ERA

Porsche's first Le Mans triumph came with the mighty 917 in 1970, but it was during the period from 1976 through 1987 that it more or less owned the 24 Hours, failing to win only in 1978 and 1980. So why pick out 1983 in particular? That year the 956 of Vern Schuppan, Al Holbert and Hurley Haywood finished top of the heap, and it was joined on the podium by two more 956s. Porsche's dominance in '83 went an awful lot further than that, though: the German marque took the top eight places, nine of the top 10, and 12 of the top 15. The race must have been a thoroughly demoralising experience for Porsche's rivals, the very best of whom (Diego Montoya, Tony Garcia and Albert Naon in a Sauber C7) finished the race 32 laps adrift.

ALAMY

DAYS OF

The 1980s were the era of Group C, and Aston Martin's contenders were these brutes: Nimrod and AMR1

Words Jethro Bovingdon **Photography** Jakob Ebrey

THUNDER

Ray Mallock is a busy man. His company, RML Group, is buzzing when we arrive a few weeks before the 2014 24 Hours of Le Mans. The RML team is preparing the radical Nissan ZEOD RC racer, powered by a hybrid drivetrain that should allow a full lap of the Circuit de la Sarthe on electric power alone, and at speeds of up to 190mph. The clock is ticking…

'It's not long until the test day and there's *so* much to do,' Ray says, before adding with a grin: 'It's a really exciting time.' It's just a moment, but it reveals everything about Ray's passion for motorsport – and for Le Mans in particular. He waves his hand towards the spotless and pulsating workshop area. 'I suppose you could say that all of this started with Nimrod and AMR1. I'm really glad you're here to talk about them.'

If you were anticipating a tale about plucky Brits cobbling together clever but ultimately doomed racing cars in between mugs of sweet tea, you were… well, not exactly mistaken. The Nimrod story began in 1981 when Robin Hamilton, the man behind the home-brew Aston Martin 'Muncher' racecar, made the very brave decision to commission a new, purpose-built car to challenge for overall victory at Le Mans. His initial investment was matched by Aston Martin Lagonda chairman Victor Gauntlett, on the condition that the new car used an Aston Martin V8. Still, the Nimrod programme was always under-resourced, relative to factory efforts from the likes of Porsche.

AMR1, however, was, as Ray puts it, a serious car. 'We didn't want for budget and we had some very smart people working on it… It was a body blow when it all ended so abruptly. I really hope you can get across the passion that was poured into that car.' And the best way to do that is to let Ray do the talking.

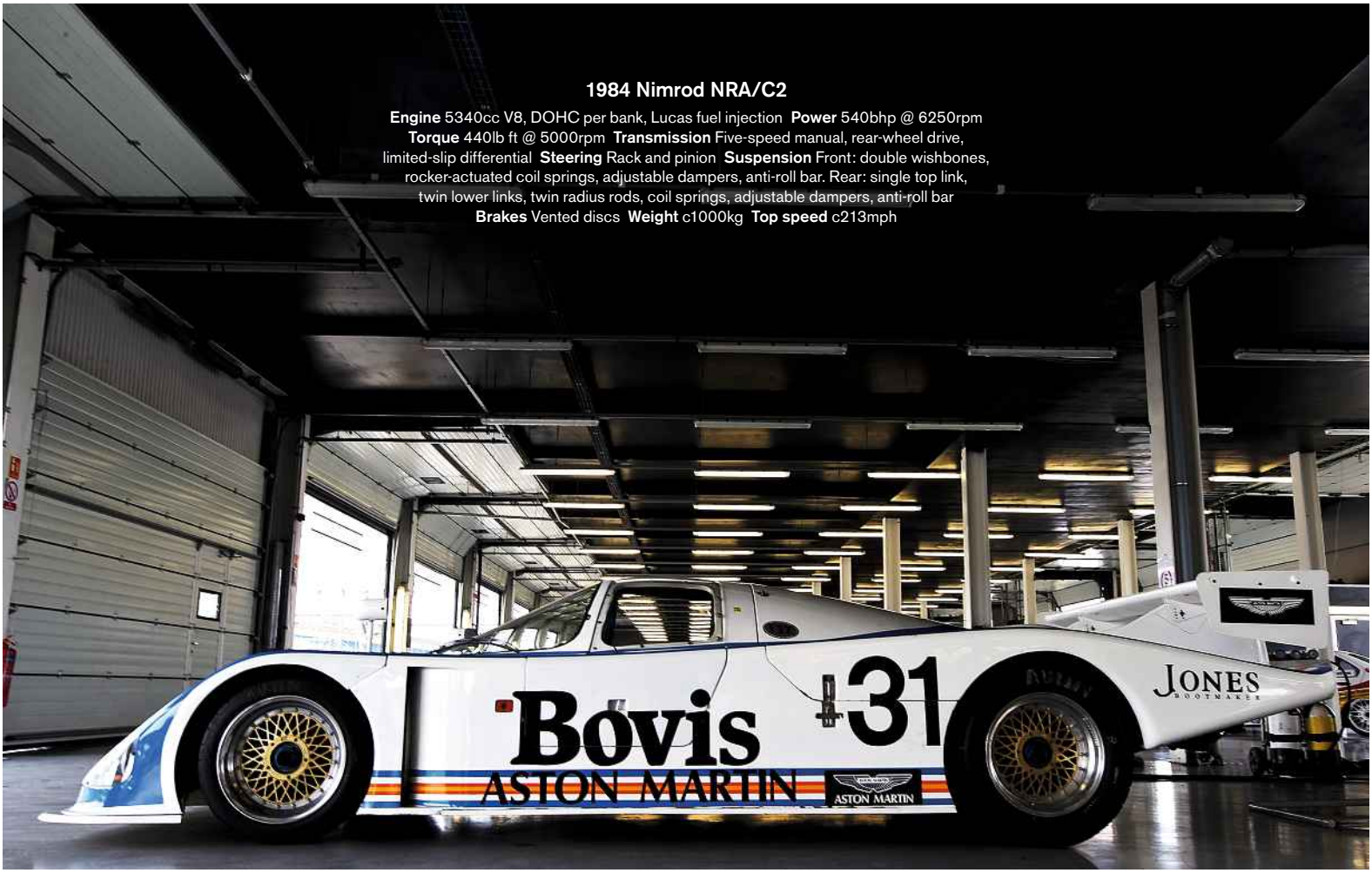
'When I left school I did an apprenticeship at Aston Martin, so I've got links back to, what, '68 or '69,' he begins. 'I worked on the line building DB6 Mark IIs. And when I moved to Distribution at 18 years old, I was the youngest person on the driving list. You were supposed to be 25, but because I raced they said "This bloke's alright to drive a bit." Anyway, I ended up doing the photo shoot for the DB6 Mark II brochure. Find a copy and you'll see a spotty Ray Mallock drifting this DB6 Mark II; you can't really see it's drifting, but I know it is!'

After his stint at Aston, Ray started to work with his brother and father at Mallock Racing. Then, in 1979, he started Ray Mallock Atlantic Racing to concentrate on his own driving and development career. That year he raced at Le Mans in the Fisons Lola, and his team manager was Richard Williams, who became a great friend. When the Nimrod project took off in 1982, Viscount Downe bought a customer car and asked Williams to run it. He in turn drafted in Ray to help develop the car and to drive it.

Ray's recollections of the Nimrod project are a mixture of excitement, frustration and sadness. Many think of the Group C era as the halcyon days of sports-car racing, but did it seem special at the time? 'It really did. Group C captured the imagination of so many manufacturers and the public, too. It was fantastic having a formula that allowed such a variety of powertrain options and a good deal of scope on the aero. You could enter with a full-blown race engine, a production-based engine, turbo, normally aspirated…'

Nimrod presented Ray with a unique opportunity. 'The rolling chassis was done by Lola and the bodywork was down to Robin Hamilton,' he explains. 'It was a fairly crude attempt at creating an aero platform. Robin had quite a bit of experience in racing production-based Astons, but none in prototypes as far as I'm aware, so there was quite a lot of scope for improvement. At the time I was working with my father, Arthur, on suspension geometry analysis. He was one of the first people to develop his own computer programme for 2D suspension analysis, and that really proved invaluable.

Clockwise from above
AMR1 with (from left) Ray Mallock, Michael Bowler and Richard Williams in 1989; the Nimrod NRA/C2 was partly developed by Mallock, and he shared this car with Drake Olson at the 1984 24 Hours, where a serious accident took both Nimrods out of the race and claimed the life of a French marshal.



1984 Nimrod NRA/C2

Engine 5340cc V8, DOHC per bank, Lucas fuel injection **Power** 540bhp @ 6250rpm **Torque** 440lb ft @ 5000rpm **Transmission** Five-speed manual, rear-wheel drive, limited-slip differential **Steering** Rack and pinion **Suspension** Front: double wishbones, rocker-actuated coil springs, adjustable dampers, anti-roll bar. Rear: single top link, twin lower links, twin radius rods, coil springs, adjustable dampers, anti-roll bar **Brakes** Vented discs **Weight** c1000kg **Top speed** c213mph

So between improvements in the aero and suspension, we managed to get that customer car going very well. Our little car without much budget generally managed to outperform and outlast the works car, in fact.'

The refinements to the aerodynamics came courtesy of Willem Toet, who went on to work in senior positions for F1 teams including Ferrari. And Viscount Downe's little group recruited some excellent driving talent, too: at Le Mans in 1982, Ray shared the car with Simon Phillips and Mike Salmon, and they ran as high as 3rd before burnt-out valves slowly dropped them down the order to finish 7th. 'It really gave us a taste for it,' Ray says.

Sponsor Pace Petroleum funded some more time in the wind tunnel at MIRA during the winter of '82, and by Le Mans the following year the car was 11 seconds a lap quicker. Sadly an engine failure ended its challenge, and worse was to come in 1984. John Sheldon, driving Nimrod chassis 004, lost control on the Mulsanne Straight when a slow puncture turned into a very abrupt tyre failure. The car slammed into the barriers and part of the flaming wreckage bounced back into the path of oncoming cars including chassis 005, driven

by Dave Olson – who was unable to take evasive action in time. Olson was hurt, but not as badly as Sheldon, who suffered serious burns and had to be airlifted to hospital. Marshal Jacky Loiseau was unluckier still, and lost his life in the accident.

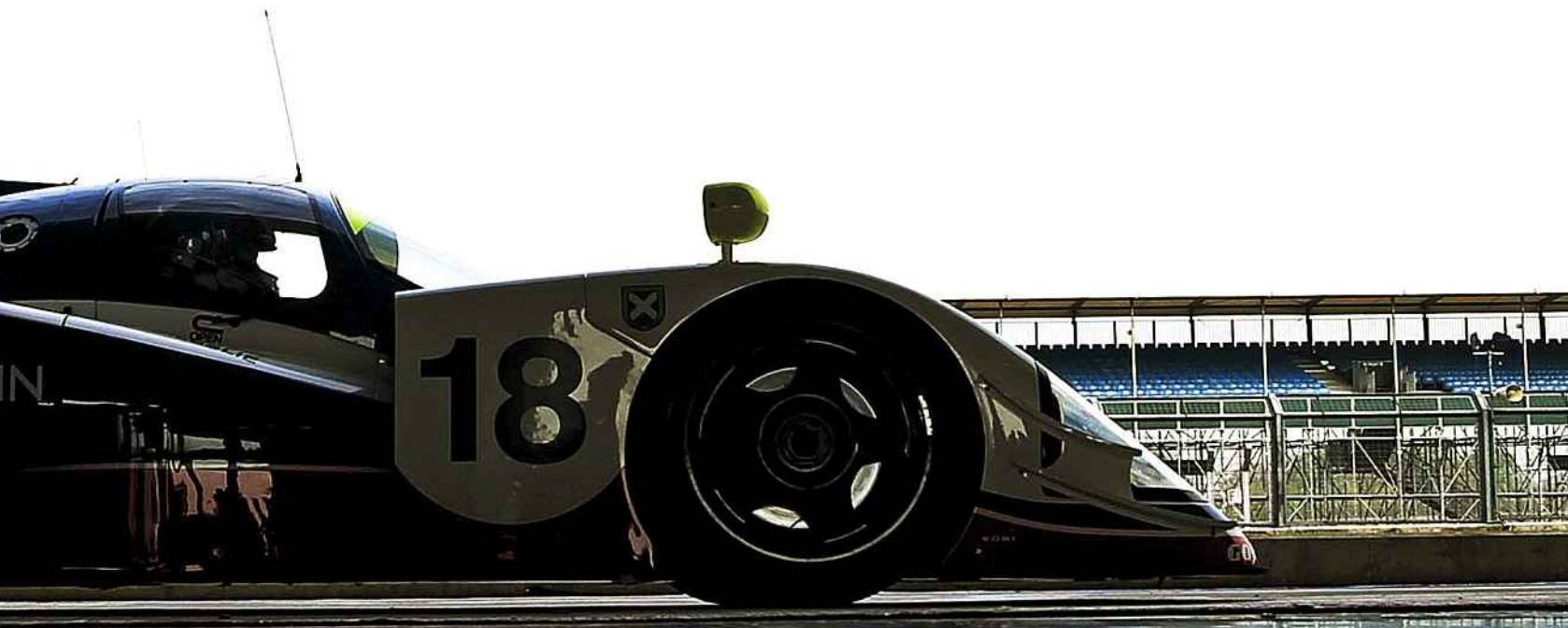
'It was one of those Le Mans where so much effort and passion goes in that you feel like you're laying your life on the line. And then somebody tragically does get killed. Devastating. That was a full stop on the Nimrod programme.'

It wasn't the end of Aston Martin's Group C adventure, though. RML went back to work building C2 prototypes (the equivalent of today's LMP2 cars) for Ecurie Ecosse, and during that period Ray met Max Boxstrom. 'An incredibly innovative designer. While we were busy with the C2 cars, we were also working on a ground-up C1 project. In fact, Max and his team had the project on the CAD for a couple of years… waiting until Victor Gauntlett and [Aston Martin majority shareholder] Peter Livanos were ready to go back to Le Mans…'

They were ready in late 1987. A new company, Proteus Technology Ltd, was formed with Richard Williams as MD and Ray as engineering director, the team working out of new premises in Milton Keynes. Says Ray: 'We had everything set up for a proper go at Le Mans in 1989' – including the basis for a highly competitive car.

'The AMR1 was state of the art – the first true all-carbon monocoque with the roof and rollover structure built into the main body of the tub, rather than being a vestigial cover over a steel rollcage. The steel was really there to keep the FIA happy rather than for strength and stiffness.'

Boxstrom's innovative approach was evident elsewhere, too. AMR1 had its drivetrain canted at 7° to clean the aero profile and allow a wide venturi underbody; the gear cluster was ahead of the rear axle centre-line to improve weight distribution; and in terms of aerodynamics the car was a quantum leap on from the Nimrod. 'The cut-outs behind the front wheels were crucial,' says Ray. 'We were among the first to grasp the effects of sucking air through that void, which gave us a powerful tool to tune the front downforce.' There was a new 6-litre version of the Aston V8, too, with a Reeves Callaway-developed four-valve head. It made around 670bhp. The AMR1 was looking like a serious contender.



'WE HAD EVERYTHING SET UP FOR A PROPER GO AT LE MANS IN 1989 – THE NEW AMR1 WAS STATE OF THE ART'

Clockwise from above AMR1/05, the ultimate development of the design, arrived at the end of the 1989 season – and was barely run-in before the plug was pulled on the whole AMR1 programme following Aston Martin's sale to Ford; AMR1/05 was originally fitted with a 740bhp 6.3-litre V8, but that's a replacement 6-litre you're looking at.

There were obstacles to success, though. 'The car had a long gestation period,' begins Ray. 'Max and his team, for all their incredible strengths, definitely took longer than was ideal in getting the design out. That meant we were late out on track and missed the first round of the 1989 [World Sportscar] Championship.' Even more of an issue was that AMR1's rear-mounted radiators gave too much drag – hardly ideal for Le Mans.

The 1989 24 Hours was the last edition to use the full Mulsanne Straight, uninterrupted by chicanes, and the turbocharged Sauber C9s were hitting 248mph. The AMR1's drag issues were stark: the car could manage only around 217mph. AMR1/03 retired with engine failure, anyway, while AMR1/01 finished 11th.

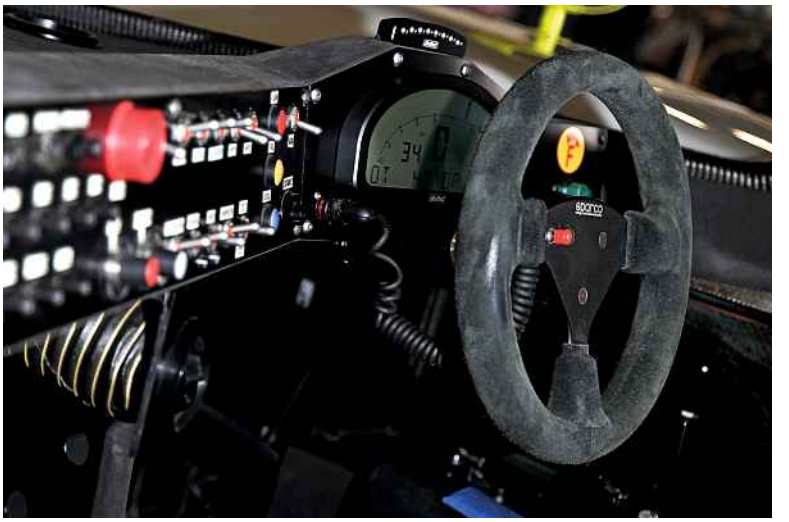
Away from the long straights at Le Mans, though, the car's potential started to reveal itself. 'Before the next round of the Championship we went away and got our thoughts together,' remembers Ray. The team arrived at Brands Hatch with a new, lighter chassis, AMR1/04, that proved very useful. 'We had a really competitive 4th, which was so satisfying. The car handled beautifully, and its downforce came into its own. Yeah, by Brands we had a good offering.'

Development continued, and by the season's final round a new iteration, AMR1/05, had arrived. Lighter still, it was fitted with a new 6.3-litre engine thumping out 740bhp. Furthermore, AMR2 was on the way with much reduced drag, helped by repositioning the radiators in a conventional location. Le Mans in 1990 was looking very exciting indeed. 'We felt ready to take on the likes of Porsche,' says Ray.

Then the rules changed. 'The success of Group C meant Bernie [Ecclestone] and Max [Mosley] saw it as a threat to Formula 1, and the rules were changed overnight. Now you had to use a 3.5-litre F1-type engine.' Ford had recently bought Aston Martin and Jaguar, and decided it would be Jaguar's Group C programme that would get Cosworth's 3.5-litre V8. For Ray's merry band to continue, Peter Livanos would therefore have to fund the development of a brand new engine. It was impossible.

'So all this effort – blood, sweat and tears – came to naught,' rues Ray. 'The programme was canned around Christmas-time of 1989. A bitter disappointment. People look back at it now as a short-lived thing that died because it wasn't very successful. That wasn't the case at all. It died because of the rule change. There was no lack of commitment or performance. We'd put everything into it, and we could have achieved fantastic things under different circumstances.' Just like that, Proteus Technology was wound up, and Aston's Group C adventure was over. Evo

THANKS TO Ray Mallock, and to Roger Bennington of Stratton Motor Company for supplying the Nimrod (strattonmotorcompany.com).



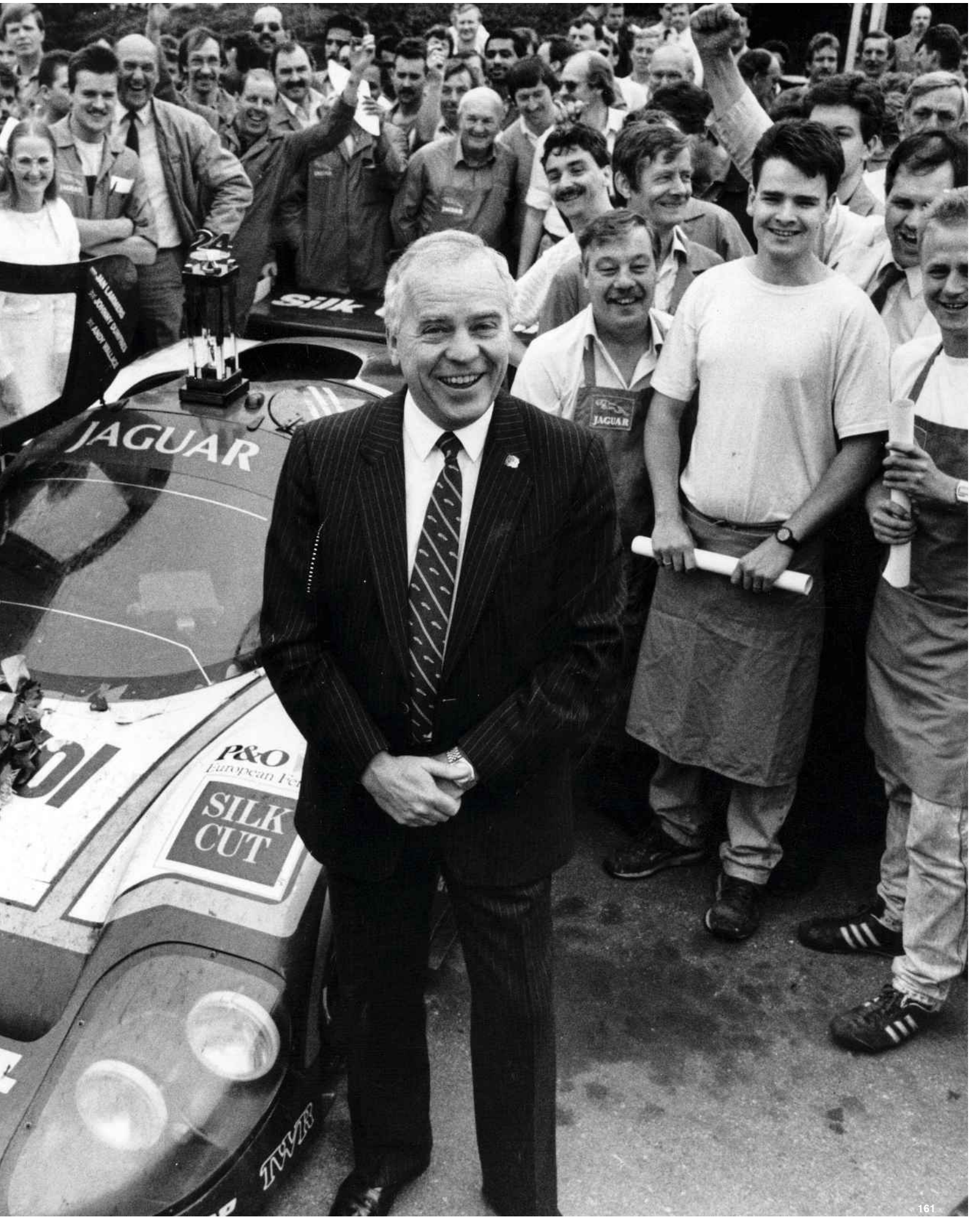
1989 Aston Martin AMR1/05 (original specification)

Engine 6300cc V8, DOHC per bank, Zytek fuel injection (5998cc unit fitted)
Power 740bhp @ 7200rpm
Torque 563lb ft @ c5000rpm
Transmission Five-speed manual, rear-wheel drive, limited-slip differential
Steering Rack and pinion
Suspension Front and rear: double wishbones, rocker-actuated coil springs over adjustable dampers, anti-roll bar
Brakes Vented discs **Weight** c920kg
Top speed c220mph

LE MANS FLASHBACK: 1988

THE BRITISH ARE COMING

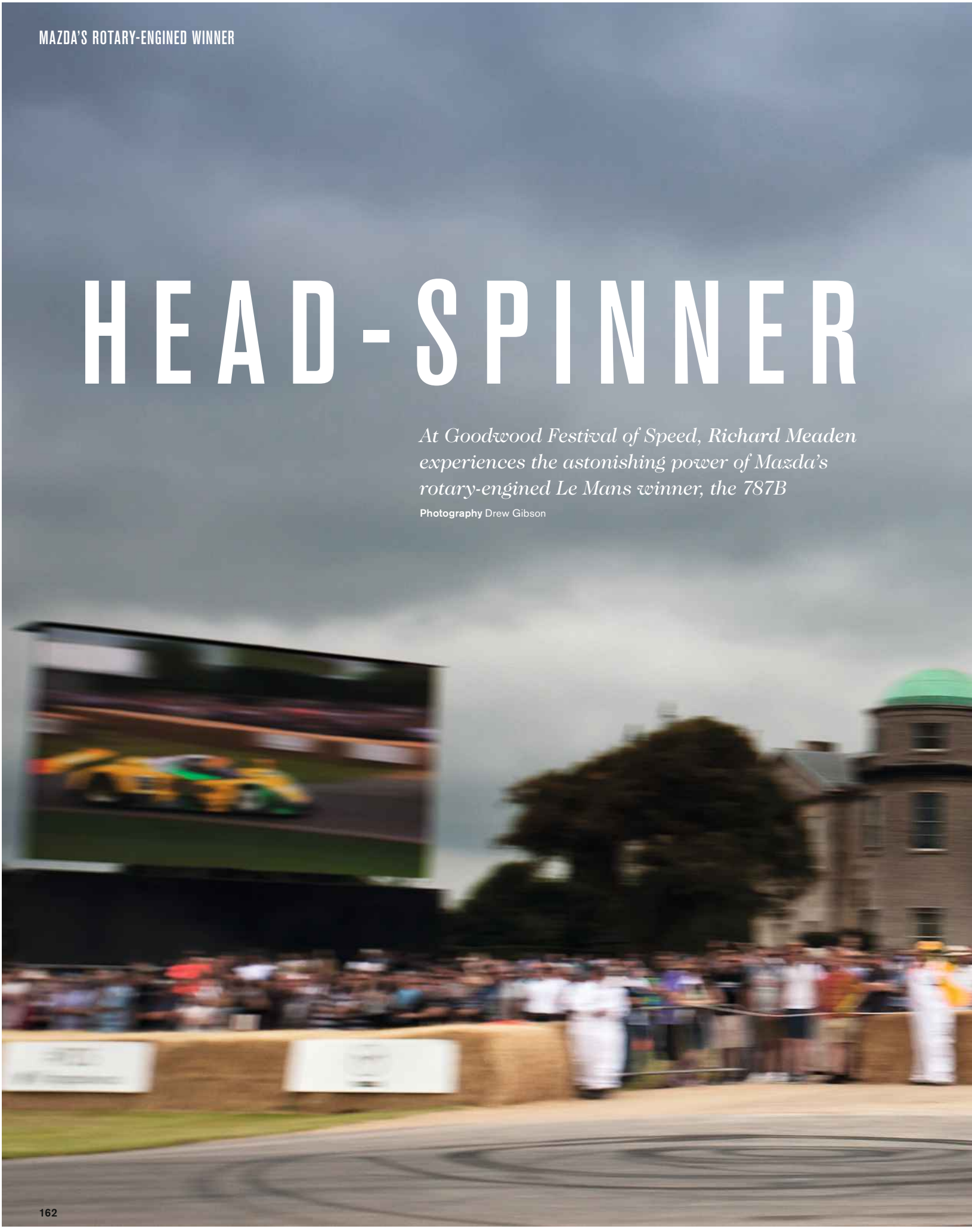
After its glory days at Le Mans in the 1950s, Jaguar had a long period in the wilderness, the marque not even appearing in the 24 Hours for two decades. It finally returned in 1984, but success proved elusive until 1988. That year more than 50,000 Brits travelled to Le Mans hoping to witness a Jaguar victory, and the trio of Jan Lammers, Johnny Dumfries and Andy Wallace obliged them, sparking wild celebrations. The fans, described on TV commentary as 'going absolutely raving spare', swarmed the Lammers/Dumfries/Wallace XJR-9LM as it came into the pit straight just ahead of the scheduled 3pm finish, forcing marshals to end the race fractionally early. Jaguar chairman John Egan (pictured with his staff and the winning car) was delighted, but TWR-Jaguar team boss Tom Walkinshaw might have been the most excited of all, and from the balcony of the Automobile Club de l'Ouest he led four rounds of the British national anthem.


JAGUAR
Silk
JAGUAR
P&O
SILK
CUT

HEAD-SPINNER

At Goodwood Festival of Speed, Richard Meaden experiences the astonishing power of Mazda's rotary-engined Le Mans winner, the 787B

Photography Drew Gibson




55
RENOWN
CHARGE
mazda
NGK
788
IDEMITSU
DUNLOP

It was no surprise to hear that the number 55 Mazda 787B was on its way from the Mazda Museum in Hiroshima to the UK; a while earlier, it had been announced that Mazda would be the featured marque at the 2015 Goodwood Festival of Speed. I was floored, though, when I found out who would be driving the fire-breathing Le Mans winner at Goodwood: me…

Number 55 and I go back a long way. All the way to 1991, in fact, when I watched it charge to victory in the 24 Hours. During the dead of night, when I retreated to my tent near the Dunlop Bridge for a bit of shut-eye, the car would wake me with monotonous regularity. The three-and-a-half minutes or so that it took to complete a lap was just long enough for me to get to sleep – but the moment I drifted off, I was slapped awake by the wail of the Mazda's quad-rotor engine.

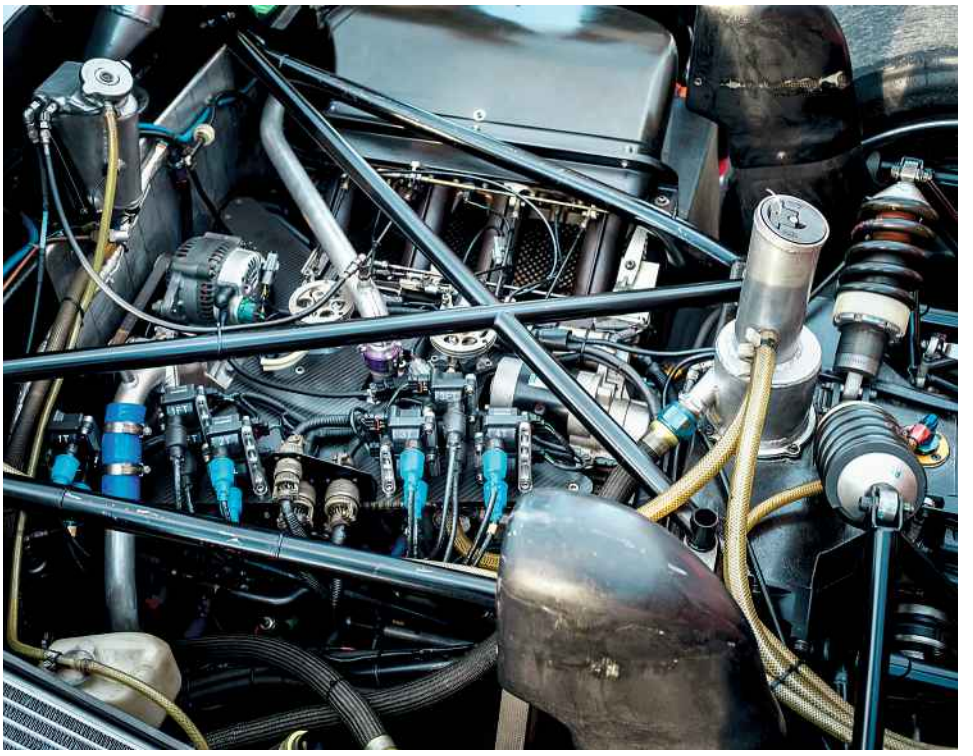
If I'm completely honest, I'd travelled to La Sarthe to support the Jaguars, as had half of the UK population, or at least that's how it seemed. But it was impossible not to root for the attention-grabbing, Day-Glo green-and-orange Mazda: the driver line-up included a Brit, Johnny Herbert; and the team seemed to have settled on a crowd-pleasing race strategy of absolutely driving the wheels off the thing from flag to flag.

The rest is history. The flying Peugeot 905s both faded early in the race, and when the three Sauber-Mercedes cars faltered, one by one, under pressure from the relentless Mazda, victory for the unfancied 787B was assured. Herbert drove his heart out in a marathon final stint that left him a desiccated husk, and so in need of emergency rehydration that he didn't make it to the podium with co-drivers Volker Weidler and Bertrand Gachot. It was an epic and hugely popular win.

Fast-forward to Goodwood in 2015 and the 787B looks as sensational as ever. Parked up with several other Mazda rotary-powered racers, it's the undisputed star of the show. Thanks to a number of breakdowns and offs on Goodwood's famous hillclimb course, this year's Festival of Speed is running to a rather fluid timetable – meaning that there's no time for a full briefing from the Mazda mechanics before I'm stuffed into the seat of the car and told to fire up the extraordinary engine.

Rotaries are often regarded as internal-combustion voodoo, and this one certainly functions, sounds and responds like no other engine I've experienced. Every bit of Mazda's hard-won knowledge went into the 787B's R26B motor, which features a constantly variable intake system and three spark plugs per rotor, compared with two in the previous iteration of the design. Mazda claims that the engine was good for a whopping 900bhp at 10,500rpm, though it ran at closer to 700bhp with a 9000rpm limit for Le Mans – still a remarkable figure.

'MAZDA CLAIMS THE ENGINE WAS GOOD FOR 900BHP, THOUGH IT RAN AT CLOSER TO 700BHP FOR LE MANS'



1991 Mazda 787B

Engine 2616cc quad-rotor
Power 700bhp @ 9000rpm
Torque 448lb ft @ 6500rpm
Transmission Five-speed manual, rear-wheel drive
Steering Rack and pinion
Suspension Front and rear: double wishbones, coil springs, adjustable dampers, anti-roll bar
Brakes Carbon-ceramic discs
Weight 830g
Top speed 210mph est

Clockwise from top left
Writer Meaden steels himself for a run up the hill at the Goodwood Festival of Speed; not much to look at in the cockpit, which is utilitarian in the extreme; Mazda lavished more time and care on the engine, a quad-rotor screamer theoretically capable of putting out 900bhp.

'WHEN I TAKE MY RIGHT HAND OFF THE WHEEL TO GO FOR THE NEXT UPSHIFT, THE NOSE MAKES A VIOLENT DIVE FOR THE GRASS'

Like all Group C racers of the era, the 787B has a straightforward cockpit, with a simple LCD dash pod supplemented by a bank of fuses. The view out is about as special as it gets, though, the goldfish-bowl windscreen offering glimpses of the orange-and-green bodywork and a panoramic view of the road. The seating position is spot-on, and although the steering wheel is surprisingly large in diameter, it feels just right. The starting procedure couldn't be easier: twist the big red ignition cut-off switch and press the black starter button.

From the moment it sparks into life, the R26B engine is all-consuming. It spits and crackles and pulses impatiently at idle, then yelps and whoops with every twitch of your right foot, emitting a gunshot-like report from the side-exit exhausts the instant the throttle snaps shut. Prior to the crazy days of 20,000rpm Formula 1 engines, there was surely nothing quite like this.

Nerves of crippling magnitude threaten to grip you as you sit on the start line of the hillclimb course. In a car loud enough to trip Bedford Autodrome's noise meters from the outskirts of Chichester, any hesitancy or ham-fistedness will be plain for all to hear…

Fortunately the 787B is easy to get off the line, and once it's rolling, that instantaneous rotary power lights up the rears with an exuberant whooop-whooop-whooop before I tentatively push the gearstick forwards and across to the right in search of second. Relief at finding it is soon overtaken by the need for third as we zip by Goodwood House and the main grandstands.

I've been warned that the 787B is lively over the bumps and cambers, but when I take my right hand off the wheel to go for the next upshift, the nose makes a violent dive for the grass. I'm sure it looked pretty tame from the outside, but from where I was sitting things felt a bit frantic, which is my excuse for finding fifth instead of third. And then fourth.

Having safely reached the holding area at the top of the hill, I'm feeling a bit crestfallen at what ranks as some of the scruffiest driving I've ever done. But when the 767B running a few cars behind me slams into the hay bales, having missed a couple of gears no longer seems like a big deal – and as adrenaline kicks-in and my heart thumps its approval, I break into a grin. I've just driven a racer that's been at the top of my bucket list for many years. And judging by the faces I see as I whooop-whooop-whooop my way back to the paddock, this car has made everyone else's day, too.

The crowd at Goodwood clearly recognises how special the 787B is. It remains, remember, the only non-piston-engined car to win the 24 Hours of Le Mans, which is remarkable considering the scale of the engineering challenges that had to be overcome. To Mazda's rivals, persisting with such oddball technology must have seemed like madness – right up until they got their asses kicked. End

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GOING ALL-IN

In late 1993, Bugatti was facing headwinds that would eventually sink the company, but it nevertheless gave the green light to an assault on the 24 Hours of Le Mans, and built this: the one-off EB110 LM

Words Dale Drinnon **Photography** Rémi Dargegen

Clockwise from right
The one and only EB110 LM returns to Le Mans 25 years on from its appearance in the 1994 24 Hours; the quad-turbo V12, based on that of the EB110 Super Sport; inside there's evidence that the car was built in a hurry, but the ergonomics are good.

Forget about the viral in-car videos. Throw the computer games in the bin. Nothing can prepare you for this. With 600bhp jammed against my back and the turbos whooshing, I zoom towards the Dunlop Bridge, though I don't really notice it. What's dominating my attention is the totally blind crest coming up… and now the lightness welling up as I swoop down the other side…

Exactly 25 years on from its appearance in the 1994 24 Hours, the last Bugatti to compete at Le Mans is back – sort of. We're here with the EB110 LM two days after the conclusion of the 2019 race, which means we're sharing the circuit with clean-up crews, and that there's no hope of being able to complete a lap. There's a certain poetry in that, though, for in 1994 the car didn't manage to finish, either. And its failure back then was in turn an entirely fitting chapter in a story that, unfairly, never seemed terribly likely to have a happy ending.

THE HIGHLIGHTS OF the Bugatti EB110 saga are well known at this point. Romano Artioli, prosperous Italian businessman and rabid Bugatti enthusiast, decides in the late 1980s to fulfil a lifelong ambition and revive the brand. In accordance with the principles laid down by Ettore Bugatti himself, the new Bugatti will of course be the world's finest car – built from the finest materials in the finest factory, and making use of the latest technology.

Over the years we've all heard plenty of grand promises from motor industry entrepreneurs, but Artioli actually came through on his. The factory in Italy was as far from a dark satanic mill as could be imagined. It was a welcoming, airy space flooded with natural light and boasting cutting-edge equipment. There was much expensive tiling, and a staff café where everyone dined together – from wash-bay guys to Artioli himself. And the car?

The car was damn near magical. Say what you will about its styling (and opinions have run the gamut since the car was launched in 1991), but no-one who has driven an EB110 can fault its performance. Never mind the car's various top speed records; in the real world those are meaningless. It's road manners, chassis dynamics and usable power that matter, and on every count the EB110 delivers. Full-time four-wheel drive and excellent balance ensure the car is always planted and poised, allowing the driver to make the most of the prodigious power made by a V12 engine fitted with not two, not three, but *four* turbochargers.

It was inevitable, then, that somebody would have the idea to take it racing. That somebody was Artioli's cousin, architect Giampaolo Benedini, who not only designed the aforementioned factory but also contributed to the final shape of the EB110, stepping in to help after a proposal from designer Marcello Gandini failed to impress Artioli. Benedini was a keen club-level racer, and he felt sure that success in motorsport could help the new Bugatti company. From 1993, he and Artioli were exploring ways of taking the marque back to the track.

A good deal of the groundwork for a competition-spec EB110 had been laid by the EB110 SS – the lighter, more powerful 'Supersport' version of the standard car, which had been in development before serious thought was given to a racing programme. Michael Schumacher famously owned a screaming-yellow SS that he bought (theoretically, at least) with his own money.

By late 1993, the green light had been given for an attempt at the 24 Hours of Le Mans. Technical development was to be handled by the factory R&D department; French track-prep specialists Synergie Automobile and Meca Système would lend their expertise to the project; and team organisation would be the responsibility of sponsor Michel Hommell, a French magazine publisher and ex-racing driver, under whose name the car would be entered.

With astounding optimism, the team set its sights on the 1994 race, and somehow made it despite the myriad difficulties encountered when stretching road parts (even advanced, well made ones) way beyond their intended use. Determined to milk as much publicity as possible from the Le Mans effort, the Bugatti higher-ups allowed the one and only racecar to be driven down to Le Mans from central Paris, on public roads.

'SAY WHAT YOU WILL ABOUT ITS STYLING, BUT THE EB110 WAS DAMN NEAR MAGICAL TO DRIVE'

WE, OF COURSE, are not doing that; there's no police escort for us as there was for the Bugatti team back in '94, and there are rather more speed bumps to negotiate along the route today. When we arrive in Le Mans, the racers and fans are gone, but it's bedlam still as workers go about decoupling the temporary Circuit de la Sarthe (made up largely of ordinary commuter roads) from the smaller, permanent Circuit Bugatti, which incorporates the hallowed pit straight and the most recognisable landmark in sports-car racing, the Dunlop Bridge.

It's near the Bridge that we de-trailer, intending to grab, discreetly, some static images and move on. But it gradually becomes clear that nowhere is less crowded and offers a better action-photo opportunity than the awesome sweep from pit-out to Dunlop Bridge. I take a recce in the EB110 LM with the car's minder, and then it's my turn to drive…

I do know this car, having attended the handover to the current owner, but I've never before had the chance to get behind the wheel. Adding to my inevitable apprehension is the fact that the layout is different from that of either a standard EB110 or the Le Mans test mule with which I once had a fabulous day. For me, the fixed driver's position is a touch long in the legs with the harness attached, and I decide better the pedals than the belts. The various switches on the dashboard are labelled, but since my French only just about suffices to read a menu in a restaurant, I need a little help to spin the starter.

The noise from the V12 doesn't seem significantly louder than in an EB110 SS road car, which is somewhat surprising given the absence of any sound-deadening creature comforts in this cabin. The six-speed shifter is just where it should be, and the pedals are perfectly spaced for some heel-and-toe action, even though I'm wearing my favourite old Derbies, not driving boots.

You'll no doubt have noticed the full-width windscreen crack: screen cracks are reportedly a chronic problem with the LM, but since the car doesn't race anymore the owner tends not to worry about them. Fortunately the crack isn't distracting, though outward visibility in here is by no means perfect. The roll cage restricts your view out of the side windows, so you rely on the side mirrors; and the rear-view mirror is basically useless because of that barn-door wing.

1994 Bugatti EB110 Le Mans

Engine 3499cc quad-turbo 60v V12, DOHC per bank
Power 600bhp @ 6200rpm **Torque** 513lb ft @ 5000rpm
Transmission Six-speed manual, four-wheel drive
Suspension Front and rear: double wishbones, coil springs, anti-roll bar, telescopic dampers
Brakes Vented carbon-ceramic discs, ABS
Steering Rack and pinion **Weight** c1220kg
Top speed 220mph **0-60mph** 3.1sec

Interior fit and finish are exactly as you'd expect of a car built in a rush of all-nighters against a crazy deadline.

The steering, clutch and gearchange feel identical to a regular EB110's. There's a slight tendency to fluff after extended low-revs running, or at tickover, necessitating an occasional throttle blip, and what a dreadful inconvenience it is to have to zap the lovely engine. On the slow trundle back down to the pit straight after our recce, I already feel at home with the car to a degree that I hadn't anticipated.

The car has a turning circle barely smaller than that of the truck that carried it here, so swinging around to attack the Bridge complex again is the hardest part of driving the thing. Otherwise, it's as friendly as any modern sports car – but more fun, thanks to the real gearbox and clutch. It's easy to see how an ordinary driver like me could get in over their head, though, so after one more run we leave the permanent track for the open highway sections of the Le Mans circuit.

Normal traffic routing has already been restored; the chicanes on the Mulsanne Straight, for instance, are now bypassed, and cars use the roundabout at the Straight's end instead of the race-days-only right-hander leading from Mulsanne toward Indianapolis. Rush hour is over, so while we can't quite let the car run free, with some prudence it's possible to slacken the leash.

The results are shockingly… unshocking. A launch off the line would have to be insanely hard to break the tyres loose, and in fact the four-wheel drive might make it impossible. There's no raucous, look-at-me exhaust thunder like you'd get from some current street exotics, either. It's as though the essential character Artioli thought a latter-day Bugatti should have was carried over into the racing version: this is a blindingly quick and competent car, for grown-ups.

A production EB110 SS, as you might recall, was good for about 220mph and got to 60mph in about three seconds – numbers that still impress today. The Le Mans racer has the same 600bhp as the SS (the maximum allowed under the 1994 regulations), but it weighs almost 200kg less. It seems to me every bit as fast as the aforementioned test mule, which claimed a power advantage over the SS of 100bhp. Blasting along the Mulsanne Straight during the 1994 24 Hours, the LM must have felt to its trio of French drivers like the Millennium Falcon.

'AN EARLY FUEL TANK LEAK WAS STEMMED WITH A MAJOR SLAP OF QUICK-SETTING EPOXY'

And the Mulsanne was where, sadly, the wheels came off for Bugatti. The 1994 race was supposed to be a return to the Le Mans tradition of production-based cars battling for victory, but Porsche, working through Dauer, converted the 962 prototype into the Dauer 962 production GT, then coverted that into the Dauer 962 production racer. The car complied with the letter of the regulations, if not the spirit … The Dalmas/Haywood/Baldi 962 ended up winning the race, though it was pushed hard by one of the Toyotas.

The Bugatti qualified 17th. In the early stages of the race, it suffered a fuel tank leak that was stemmed with a slap of quick-setting epoxy, and then there were multiple stops to replace turbos, but drivers Alain Cudini, Éric Hélary and Jules Boullion dragged the car back up the field. With just 45 minutes to go, a top-five finish was looking likely. Then, as Boullion was overtaking a Dodge Viper, the Bugatti jinked left in the braking zone at the fast end of Mulsanne, hammering the Armco. Whether it was tyre failure, brake failure, suspension collapse or driver error was unclear, but the result of the crash was indisputable: a big, fat DNF.

The disappointment at Le Mans was the least of Bugatti's troubles, though. Sales of the EB110 were lagging due to a combination of production delays and a recession. It had always been rumoured that the company's financials were shaky, but it's now certain that Artioli had bet his shirt. The company folded in September 1995, and Artioli sold the naming rights to Volkswagen Group three years later.

Artioli bounced back, as people of his calibre always do. When we last met he was in his mid-80s but he was actively engaged in a new sustainable energy project. And he was as generous and charming as ever, insisting on personally fetching the drinks for his guests at his villa above the Mediterranean. We talked for ages, and he made it feel like minutes. He also knew the best ice cream joint in town.

But what of the car? After Le Mans, it went immediately to Michel Hommell's museum, le Manoir de l'Automobile in Brittany, where it stood, until being acquired by the current owner, as a sort of public monument to Artioli's dream. It might not have had a happy ending, but the EB110 story is one that will never be forgotten. End

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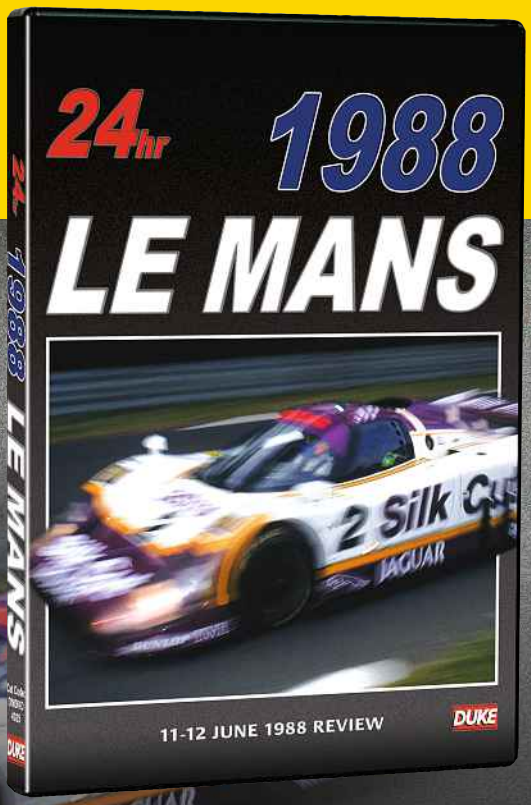

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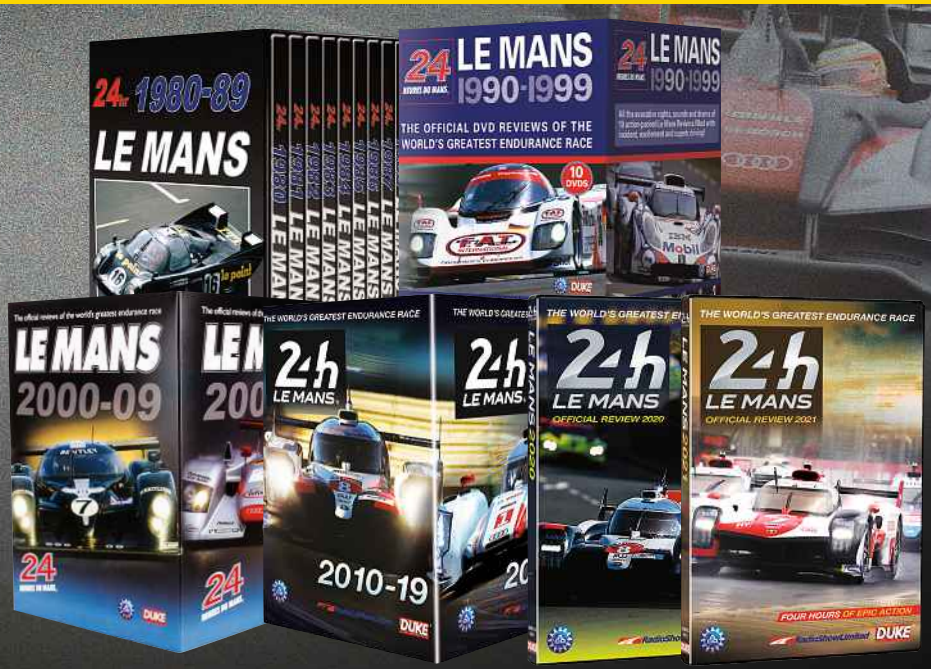

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THE ACCIDENTAL HERO

In 1995 a McLaren F1 defied the odds to win the 24 Hours. This is how the greatest road car ever built became a legend of Le Mans…

Words Paul Fearnley
Photography Patrick Gosling / McLaren


GTR
BMW
V12 Power
BMW
V12 Power

At every stage of its development, the cutting-edge McLaren F1 GT was judged by the least scientific measure imaginable: would you want to drive this car to the South of France? And at *no* stage did designer Gordon Murray envision the car making a 24-hour detour around Le Mans.

Murray regarded the creation of the F1 – at once the world's fastest road car and a comfortable tourer – as a welcome opportunity to get away from racing after spending two decades working in Formula 1, first for Brabham and then for McLaren.

'I had to forget about motorsport,' he says. 'But you can't unlearn what you know. That's not to say I designed a racing car. I didn't. If I had, I would have given it much longer overhangs, a wider track and a better option of venturi shape.' Well, of course.

'So I wasn't that interested when I was first approached about racing it,' he continues. 'And Ron Dennis definitely wasn't. It was the cars' owners who made the decision for us. They planned to race it with or without our help, and I was worried that they might make it unsafe, slow and unreliable.

'We had to fit a rollcage because the governing body wouldn't accept the carbonfibre structure. That pissed me off: it was plenty strong enough. We fitted fire extinguishers, spent *one* day in a wind tunnel and did a new nose, stuck a wing on the back, adjusted the springs and ride height – and went racing.' For context, the original road car spent 1100 hours being honed in the wind tunnel.

The new GTR iteration won the first six rounds of the 1995 BPR Global GT Championship, and its success inevitably gave excitable F1 owners ideas about racing on the grandest stage: at Le Mans. The car, however, was unproven beyond four-hour races and McLaren was again reluctant – but again it acquiesced. An 'endurance kit' that included carbon brake discs was swiftly put together on the understanding that all the owners would buy it, and also test it for 24 hours at Magny-Cours at the end of May.

'The car hardly missed a beat and I thought the owners would be happy,' says McLaren's customer support co-ordinator Jeff Hazell. 'But they were glum. They said, "We thought we were going to Le Mans to have a thrash and be back at our hotel in time for dinner. Now we're going to have to buy more spares, take more people and take it a lot more seriously."'

Crew chief Paul Lanzante, however, thought it all a joke – to begin with, at least. 'We had put on a good show in BPR's GT2 category with a Porsche 911 but, because we were a new team, we hadn't received an invitation to Le Mans. We'd done a lot of restoration work for McLaren and so I knew Ron Dennis on a one-to-one basis. He said there'd be a bonus in it if we won. Yeah, right. I thought he was just winding me up.'


McLaren
GTR
59
TOKYO
Ueno Clinic

MOTORSPORT IMAGES

GETTY

MOTORSPORT IMAGES

Left, from top
The Uneno Clinic F1 GTR on its way to a famous win, steered by (from left) Masanori Sekiya, Yannick Dalmas and the otherwordly JJ Lehto, who was over 20 seconds a lap faster than his quickest rival in the wet.

McLaren's established privateer teams were not amused that Lanzante had been co-opted to run an extra GTR under the banner of Kokusai Kaihatsu Racing – despite the fact that its main sponsor was Ueno Clinic, a circumcision specialist! There were murmurings about it being a works effort, which is something that Lanzante, who was then a Le Mans novice, has always refuted. He had just six weeks to prepare the refreshed test mule after his designated chassis was commandeered to replace the one crashed by GTC Gulf Racing at Jarama in April.

'For the official photo after scrutineering at Le Mans, we called in our catering staff and some mates to make the team look bigger,' he says. 'There were only half-a-dozen of us – but we were not understaffed. I had asked for, and got, the number one McLaren mechanic. Then there was Dermot Walsh, a friend of mine at McLaren; I wanted him because he knew the engineers and could act as go-between.

'I copped some flak. The truth, though, is that we had neither more nor less than the customer outfits. The mistake the others made was that they thought they could do better than the factory. They wanted the credit. Personally, not knowing the car as well as those teams, I took advice from the factory.'

Lanzante's drivers were Frenchman Yannick Dalmas (a prototype Tom Kristensen with two wins and a second place from four starts since 1991); the experienced Japanese Masanori Sekiya (so fond of Le Mans that he got married in the city in 1987); and Finn JJ Lehto (the potential loose cannon). Lehto was undeniably talented but had limited experience of endurance racing and low-downforce cars, and he was coming off a disappointing final season in F1 and a serious neck injury.

Lanzante's expectations for the race were already low before an engine was buzzed and the lower rear wishbones bent over kerbs during qualifying. An agricultural stiffening mod was rushed through and flown over for the race – and only Kokusai Kaihatsu Racing fitted it.

Hazell was worried, too: 'Yannick knew the race very well and is a very particular person. We needed that. I hadn't worked with him before, but had got feedback about him from other engineers: that he was demanding, but right. In contrast, I wasn't sure that JJ had the right credentials.

'As for the team, I was assured that it would have a full crew and we were simply to provide our normal level of service. But it arrived with fewer people than I had been led to believe. Our other customers weren't very happy because they could see more and more McLaren people in the Kokusai Kaihatsu garage as the weekend progressed.'

Those 'works' rumours were further fuelled by Lanzante's decision to fit a new engine for the race. 'I went to the support truck and there were two spares. One had done five hours; the other was brand new. I took the latter. Because of that another team thought we had a special engine. But they'd had the same option. Yes, we were coming in a lap earlier for refuelling during the race, though that was only because I was terrified about running out of petrol.'

THE HEART OF A WINNER

Gordon Murray designed a road car that could beat the best racers – with a little help from BMW, explains Glen Waddington

During the development of the F1, Gordon Murray was in contact with every supplier as he sought to pare away grammes in the pursuit of road-car perfection. (Kenwood's engineers no doubt remember with frustration being told to 'just try harder' with their CD player.) But Murray enjoyed a particularly close relationship with BMW – and specifically with the F1's engine designer Paul Rosche, then technical manager at BMW Motorsport.

What began as a prospective adaptation of the company's racing V12 escalated into a bespoke project for just 100 cars. Rosche asked what was really wanted and was given a list: a V12 of the biggest displacement in the smallest overall package possible, no more than 600mm in length or 250kg in weight, rigid enough to act as a load-bearing member, and with dry-sump lubrication. 'Never use a 10mm bolt where 9mm would do; consider weight as driving the design,' Murray commanded.

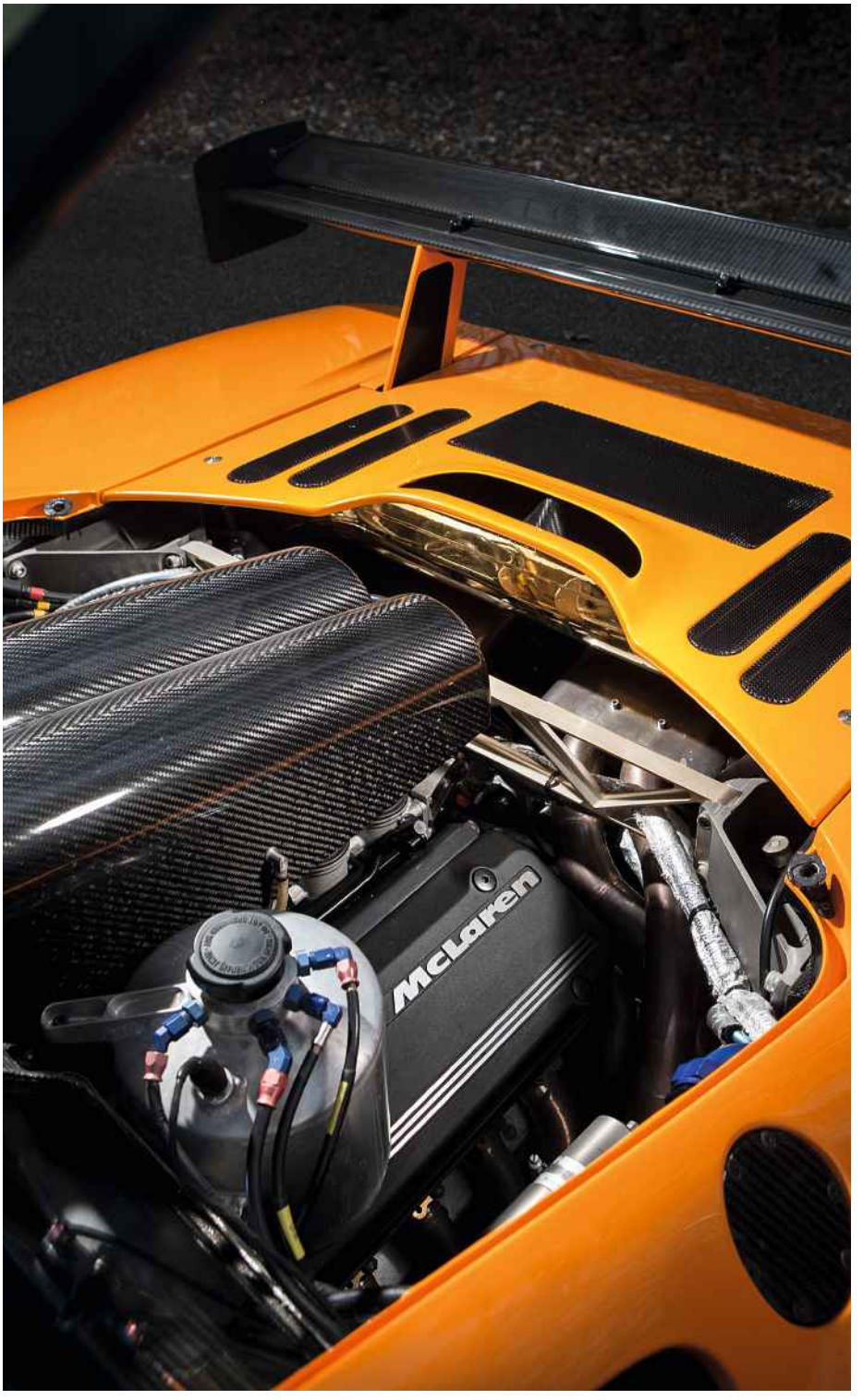
The target power output was 550bhp; Rosche found 627bhp in the prototype. With full emissions equipment, it weighed 266kg. A 6.4% weight penalty in return for 14% more power, then. And it truly is part of the car: with a bolted-on aluminium alloy subframe, the engine is the F1's main rear structural member. Even the exhaust silencer is suspended on cables so it can help absorb impacts.

It dictated the body shape too, as intake air is drawn through a slot on the F1's roof via a venturi that forces it into the carbonfibre airbox at higher than atmospheric pressure.

Peak power occurs at 7500rpm, specific output is 103bhp per litre, there's 398lb ft of torque at just 1500rpm, and at least 479lb ft spread from 4000rpm to 7000rpm. To ensure reliability, each of the 110 S70/2 V12s BMW built was subjected to 500 hours of bench testing. Perhaps that's what made the engine so good at endurance racing. But here's the irony: for Le Mans, the F1 GTR was *detuned* to 592bhp (600PS) by restricting those clever air intakes. Well, it was either that or run ballast…

The ultimate iteration of the S70/2 is found in the five F1 LMs built to celebrate the 1995 Le Mans win. Fitted with the GTR's remapped ignition but without restrictors, it makes 680bhp. The LM found its own place in history with a 0-100mph-0 World Record run in 11.5sec while travelling a distance of only 828.4ft.

PAUL HARMER



1995 McLaren F1 GTR

Engine 6064cc V12, DOHC per bank, 48-valve, electronic fuel injection and engine management
Power 592bhp @ 7500rpm **Torque** 480lb ft @ 5600rpm **Transmission** Six-speed manual, rear-wheel drive
Steering Rack and pinion, unassisted **Suspension** Front and rear: double unequal-length wishbones, coil springs, telescopic dampers. Front anti-roll bar **Brakes** Brembo carbon-ceramic discs
Weight 1012kg **Top speed** 240mph **0-60mph** 3.2sec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Dalmas took the opening stint even though Lehto had set the fastest McLaren time in qualifying – good enough for 9th on the grid behind the open-topped sports-prototypes. Outright victory was far from the team's mind. But it began to rain after an hour, and the GTRs, with their smooth and torquey BMW V12s with variable valve timing, came into their own. The car shared by John Nielsen, Jochen Mass and Thomas Bscher hit the front on lap 16, and McLarens would trade the lead thereafter.

'Our strategy was to push, but not like crazy,' says Dalmas. 'We were very careful with the gearbox; at every stop we added oil. We saved the car. I don't want to be critical, but some of the others started very fast.'

Both Gulf GTRs were damaged (one survived to finish 4th, the other was sidelined on the spot), and the race-favourite Courage-Porsche wrecked its rear wing and right-rear suspension when Mario Andretti, endeavouring to join Graham Hill as a winner of motor racing's Triple Crown, was wrong-footed by a slower car.

The conditions during the night were as bad as had ever been endured by five-time winner Derek Bell, who was co-driving the Harrods-sponsored GTR. Yet they didn't seem to bother Lehto in the slightest. More than 20 seconds a lap quicker than the next-fastest driver at times, he hauled the stealth-black Ueno Clinic car into contention.

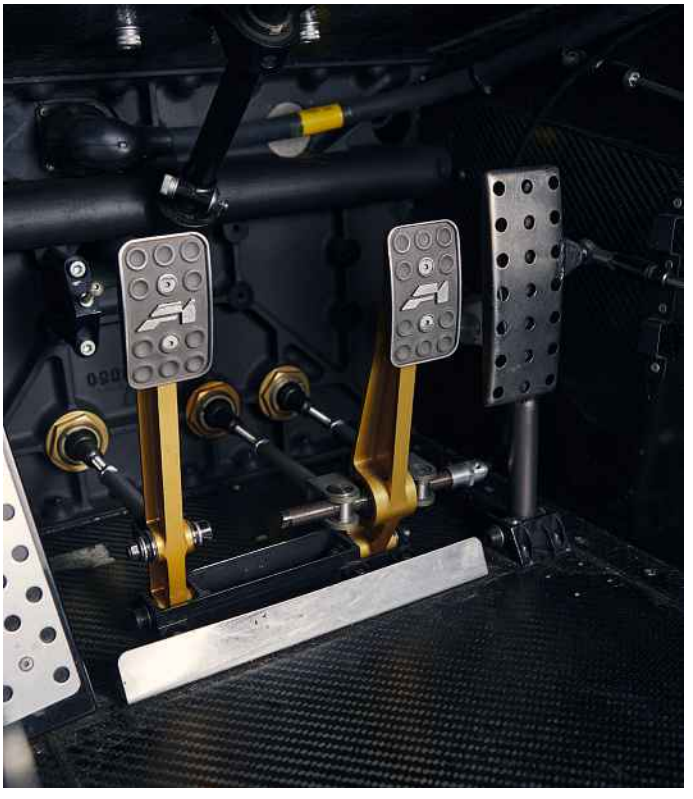
'JJ was a bit above the others,' says Lanzante. 'There was one moment that blew my mind. I could see on the TV monitor that he was hanging the rear end out. I radioed to tell him to take it easy. He was still drifting the car when he replied: "Paul, I said not to worry. It will be OK."'

Says Hazell: 'He was astonishing. We asked him to slow down and he said, "I have already. I'm having fun." He was spinning wheels on the straight when shifting gears and was sideways, rally-style, in the chicanes. I didn't think we needed to go that fast to win, but it was clear that this car would be a strong contender.'

Lanzante adds: 'Having him was definitely in our favour. There's a magnetism that draws engineers and mechanics to the quickest driver. Everybody wants to be a part of it. If a rival team saw that as us receiving beneficial treatment, I get it.'

Pressure was beginning to build now. The leading McLaren was delayed by clutch trouble ('We had provided full written information about the correct set-up, but one team chose to ignore it,' says Hazell.) and it promptly crashed a few corners after its return to the track, John Nielsen being caught out by cold tyres and brakes. The battle for victory then came down to the pair of McLarens dicing at the front, and the Courage-Porsche, which was closing relentlessly after losing half an hour to repairs.

Below and right
Three drivers took turns behind this centrally positioned steering wheel: Dalmas, Sekiya and Lehto; more switchgear than the road car, and less power, but more downforce.



‘IT WASN’T A RACE FOR US UNTIL FOUR HOURS BEFORE THE END’

– PAUL LANZANTE

‘I thought Paul’s team had less chance than our others because its crew did not know the car as well,’ says Hazell. ‘He had lots of info coming at him – from the drivers, engineers, tyre people, BMW’s technicians and McLaren. If you’re not familiar with how to prioritise that correctly, you can become overloaded and make a mistake. We could see it going off the rails at one point.’

Explanations for the dropping of the car onto its brake discs at a pit stop differ depending on whom you ask. There are also several accounts of what happened to precipitate the enforced departure of McLaren personnel from the Lanzante garage. ‘That’s when politics kicked in,’ says Lanzante. ‘Annoyed, I called Yannick and JJ in from our caravan – they were having a kip. I sat them down and told them: “There’s a new plan. We are going to do everything we can to win.” Yannick was to take the last stint, as planned, but I explained that if we needed some extra pace then I would put JJ in for the final hour. It wasn’t a race for us until four hours before the end.’

Says Dalmas: ‘The motivation was strong. It was important for the drivers to feel that atmosphere. When you drive for a team, even if it is small, you must feel positivity from the people. We pushed a little more – but again with a certain philosophy. All the time we protected the car. To win? That was difficult to say. But we worked hard and believed more and more that success will come.’

Michelin began to believe, too. ‘They started to really get behind the car,’ says Hazell. ‘We had terrific support from BMW, but Michelin were the people who sealed the win. The conditions were changing a lot, from full wets to intermediates to almost slicks, and they ensured that we always had the best tyres on the car.’

Meanwhile, the rival Goodyear-shod GTR – the car shared by Andy Wallace, Derek Bell and Justin Bell – began to suffer with an ailing clutch. The problem came to a head at the car’s final pit stop: no gear could be selected and three minutes were lost. So was the race.

‘We didn’t “win” Le Mans – but we could have lost it,’ says Lanzante. ‘It would have been easy to cock-up big-time. I’m not going to say that we did a better job than everybody else, or that we were quicker. No, it was just one of those things that clicked. It helped that we weren’t hungry to win from the outset. We were enthusiasts rather than bounty-hunters there for the money and the glory.

‘At the time, it was just another weekend’s racing. Absolutely. On the Monday morning we were back at work preparing our GT2 car. It was only much later that I realised what we’d done. Now I appreciate it more.

‘All the drivers did their bit but, if any single person deserved the credit for winning, it was JJ. Yannick was great, too. With his experience of Le Mans, he was our captain and was always telling JJ to be careful, waving his finger at him!’

'IT WASN'T JUST THAT WE WON, IT WAS THE *WAY* WE WON: ON DEBUT, AND WITH A PRODUCTION GT CAR AGAINST PROTOTYPES. THAT WAS PRETTY BLOODY SPECIAL' – *GORDON MURRAY*

Dalmas adds: 'A team at Le Mans needs a leader with experience, with a vision of the race. But for success a team also needs three drivers that are very strong and who have a relationship that it is straightforward and friendly. JJ did a really good job during the night. We modified the tyres a little – cut more treads for the rain – and he was really good on those. There comes a point in every race when one of the three needs to push hard when given the green light.

'I have had the opportunity to drive for Peugeot, Porsche, BMW and McLaren. Every Le Mans for me was different – different car, different people and different drivers. 1995 is a strong memory because of the conditions and because we had not been very optimistic about winning. That success was a very special feeling. McLaren is a big name and, while I don't want to get a big head, when you win with that name I think you go in the history books.'

The McLarens finished a remarkable 1-3-4-5 on debut.

'We did so well because our car was essentially a road car, says Hazell. 'It was waterproof, so it wasn't going to misfire in the rain. We also had the right conditions – I'm convinced that the synchromesh gearbox wouldn't have lasted in the dry – and the right drivers for those conditions.

'I vividly remember Gordon Murray walking towards me, hand outstretched: "You are a star!" I was in tears. We never expected to go there with a test car and win. It was a fairy tale. Ron simply said, "Well done."'

As for Gordon Murray, it's his belief that winning Le Mans is more difficult than winning an F1 championship. 'It's a whole season's worth of races without stopping. It wasn't just that we won, however, it was the *way* we won: on debut, and with a production GT car against prototypes. That was pretty bloody special. I had been dead against it, but now I'm glad that we raced and I'm proud of it.'

You know what's coming… 'My only regret is that we didn't drive the winning car there and back. That would have been the ultimate.'

Of course, that wouldn't have been possible. Or would it? Lanzante: 'You wouldn't have wanted to drive the car there because of the risk factor. But it certainly could have been driven back. No problem.' End

Lanzante

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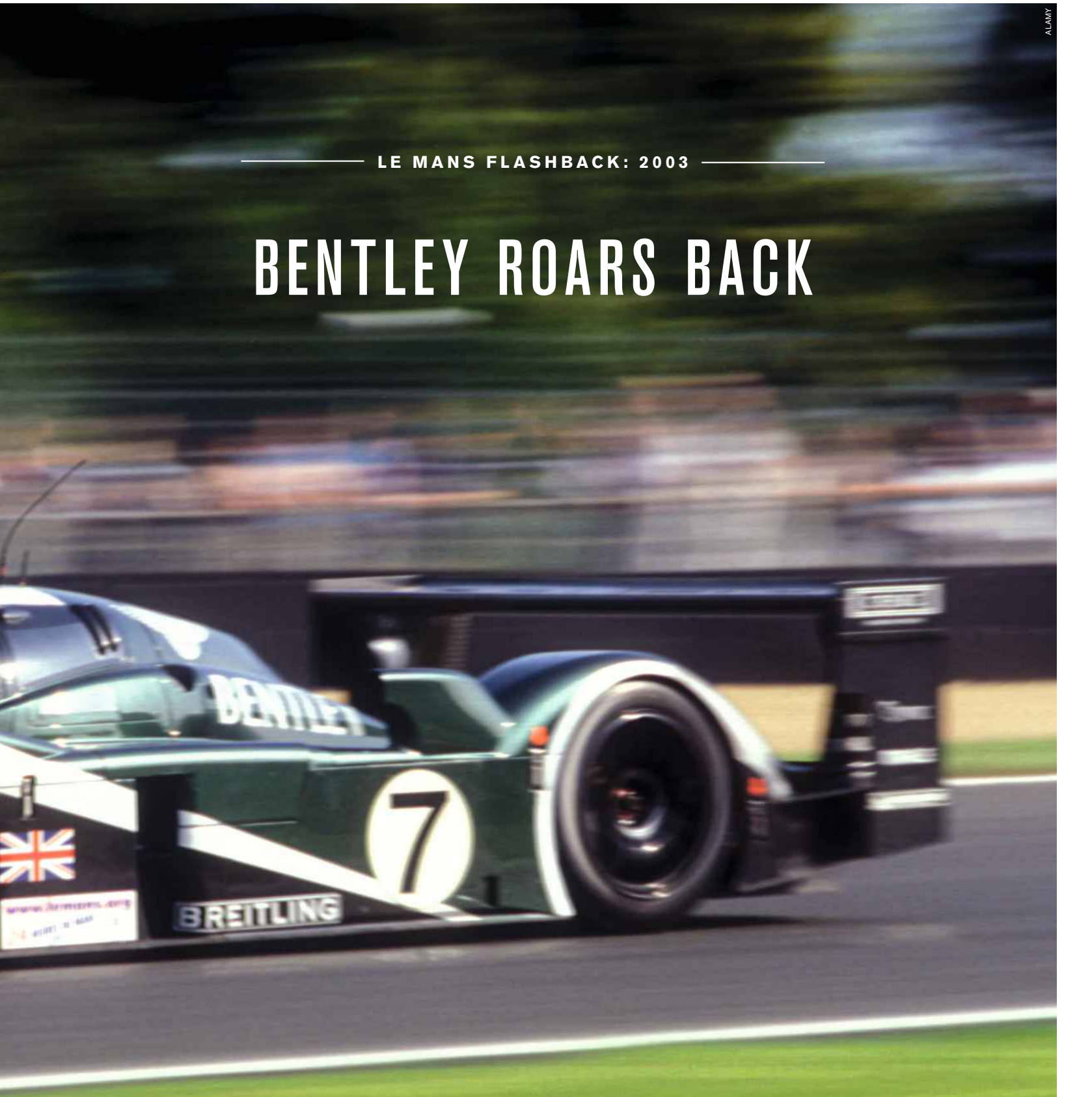
BENTLEY ROARS BACK



ALAMY

In the 1930 24 Hours a pair of works Speed Sixes cruised to a 1-2 finish, securing Bentley's fifth Le Mans win in eight years. At that point, few would have bet against the Bentley enjoying further success in the 1940s, but it wasn't until 2003 that the marque tasted victory again, with the Speed 8. The sceptics may still crow that the car was just an Audi R8 in drag, but as Bentley motorsport boss Brian Gush noted: 'There's more British content in the Bentley than German content in the Audi.' The driver line-up was plenty British, too: joining Tom Kristensen and Rinaldo Capello in the winning Number 7 car was Guy Smith, and the 2nd-placed Number 8 car was steered by Mark Blundell and Johnny Herbert along with Aussie David Brabham.

DIFFERENT GRAVY

The Porsche 919 Hybrid is one of the fastest, most complex Le Mans racers ever built. What on Earth is it like to drive? Richard Meaden was invited by Porsche to find out…

Photography Drew Gibson and Dan Bathie


#Fever
919 tribute
PORSCHE
CHOPARD

When Porsche returned to the LMP1 class for the 2014 World Endurance Championship season, it arguably had more to lose than to gain. It was rejoining top-flight long-distance racing during the most ferociously competitive era the sport has known, but it would not be good enough for its 919 Hybrid to be there or thereabouts; given Porsche's almost immaculate competition record, the new car *had* to be a winner.

And it was: after getting its eye in during 2014, the Porsche team won three consecutive World Endurance Championship titles with the 919 between 2015 and 2017, and bagged a hat-trick of Le Mans wins. By the end of the '17 season, the car had secured a spot in the pantheon of great Porsche racing cars, and a spot on the list of cars I most wanted to drive…

Media drives of contemporary Le Mans cars are not without precedent. I've been fortunate enough to sample two of Audi's race-winners (the 2011 R18 TDI and the 2014 R18 e-tron quattro), but only very briefly. You grab any such opportunity with both hands, of course, but it's impossible with very limited track time to get a real sense of what it's like to race one of these spaceships. So imagine my excitement when Porsche extended an invitation to test the final-generation 919, promising it would be a chance to drive it properly – with the full support of the LMP1 race team, and for enough laps to really explore the car's potential.

THE FIRST PHASE of this once-in-a-lifetime experience is a trip to Weissach, and more specifically to Porsche Motorsport's sprawling, purpose-built LMP1 facility. Having negotiated security, I'm ushered inside with Chris Harris, the other UK journalist to have been invited. The building has a slightly eerie atmosphere due to the LMP1 programme being mothballed at the end of the 2017 season. There are people at work, but it's just a skeleton crew tending to the 919 that we'll drive the following week, and also fettling the 919 Evo, which is skulking in a bay having just set a new lap record at the Spa-Francorchamps GP circuit. Little do we know that at the time of our visit the Evo is being readied to break the lap record at the Nürburgring a little later in the year.

One area still very much in use is the closely guarded Simulator Room, where we're going to familiarise ourselves with the 919 and learn the circuit we'll be driving – Motorland Aragón in Spain. Porsche Motorsport engineers will be on hand to offer some guidance on how to operate the quickest and most complex closed-cockpit racecar to date.

Having surrendered our phones and signed all kinds of disclaimers, we breeze into the Simulator Control Room (akin to the mixing desk in a recording studio) to find the unmistakable whine of a Formula E car coming from the Sim Room itself. The edgy glances between the Porsche Motorsport engineers suggest we maybe ought to have knocked first.

They needn't worry; I'm far too preoccupied by the prospect of 'driving' the 919 to worry about getting a scoop on Porsche's electric single-seater. Through the soundproofed glass in the Control Room I can see the simulator we'll be using – a dismembered cockpit perched on a raised platform, and basking in the blue glow of a vast wraparound monitor. It looks like something you'd find in Tony Stark's man cave.

Chris Harris and I have two hours each to try the sim and absorb the wisdom of the engineers. Harris goes first. I stand and watch for a while. We're both worried motion sickness will take hold of us and cut our sessions short, and, sure enough, after about 20 minutes Harris is requesting a break and a glass of cold water. I head off for a seat fitting while he swallows hard and tries not to be sick.

Clockwise from below
Writer Meaden (in helmet) picks the brains of the Porsche Motorsport engineers; and tries the tight cockpit of the 919 on for size; a peek into the Simulator Room at Porsche's LMP1 facility in Weissach.


CHOPARD
2-h LE MANS
1


CHOPARD
P1
919
vodafone
SCHAEFFLER
Mobil 1
VELTINS


MI-
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BOX
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DRINK
PIT
TC F
BOOST
RECUP
TC CON
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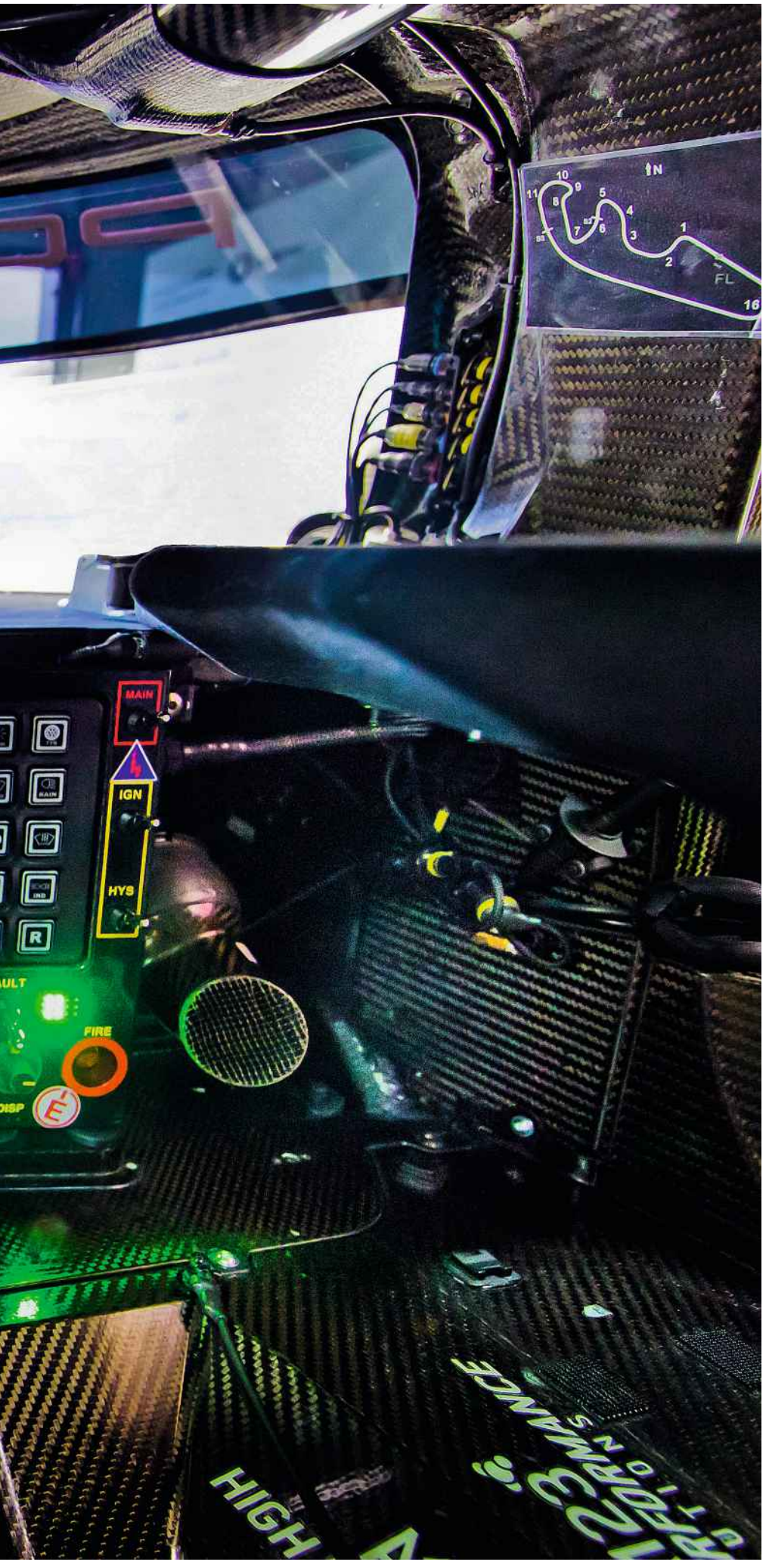


‘IF YOU’RE A LUMPY JOURNALIST, GETTING INTO THE 919 IS LIKE FIGHTING YOUR WAY INTO A WETSUIT’

The fitting is my first chance to get behind the wheel of a proper 919 – not the easiest process, I discover. Perched on the left-hand sidepod, you grip the dorsal air intake with your right hand while simultaneously drawing your knees up and threading your legs down into the cockpit, followed by your hips, torso and shoulders. If you’re an athletic professional racing driver, this is as simple as pulling on a pair of trousers. If you’re a lumpy and arthritic journalist, it’s like fighting your way into a wetsuit. Once in, you’re snug as a bug, with feet high, legs gently bent at the knee, elbows tucked in and shoulders clamped in place. It’s oddly natural, like sitting in a loose, upright foetal position.

The cockpit is confined but beautifully laid out, with big, clearly labelled switches that are scaled and positioned to be easily found and operated in a high *g*-force environment. The steering wheel is actually an oblong, with squidgy, super-tacky grips and peppered with push buttons and rotary knobs.

The fitting is perfect prep for my sim session, as the initial feeling of claustrophobia is out of my system by the time I enter the windowless Sim Room, which hums with electrical energy and smells like the TV and hi-fi section of a department store. It seems odd to be dressed in civvies, but race boots and gloves are all you need, plus a headset to communicate with the engineers in the Control Room. I’ve never been to Aragón, so I’m grateful for the chance to drive a pixelated version of the circuit.

First, though, I need to learn the protocols for starting the 919, which pulls away on e-power alone – meaning I’ll be spared the challenge of managing a grabby carbon clutch. The sim is the best I’ve driven. Maybe it’s because I’m so focused on learning as much as I can in my two-hour session, but there’s none of the usual struggle to submit to the driving sensations the simulator is trying to replicate; I’m soon completely immersed.

2017 Porsche 919 Hybrid

Engine 2000cc V4, DOHC, Garrett turbocharger; plus KERS and ERS **Power** 900bhp total **Transmission** Seven-speed semi-automatic, rear-wheel drive with temporary all-wheel drive, traction control **Steering** Rack and pinion, power-assisted **Suspension** Front and rear: independent multi-link pushrod configuration with adjustable dampers **Brakes** Vented carbonfibre discs **Weight** 875kg (dry) **Top speed** 208mph

Just a handful of days later, it's time for the real deal. We're in the wilds of Spain, surrounded by olive groves and mountains. Motorland Aragón is so remote that it feels like some kind of secret facility – Area 51 for racing teams wanting to pile miles on cars still in development. And indeed all the big teams come here. Porsche Motorsport used the circuit for early endurance testing of the first-gen 919, and for sadistic, 40-hour runs in the build-up to the 24 Hours of Le Mans each year. The 919 could probably drive round here on its own.

In the pit garage the team buzzes with race-honed efficiency around the car, tending to its every need. With its bodywork removed, the 919 seems insanely complex and unbelievably compact. The petrol engine – a turbocharged 2-litre V4 developing 500bhp – is the size of an overnight bag. It's buried beneath pipework associated with the exhaust energy recovery system, which contributes 40 per cent of the total energy recovered. The MGU (Motor Generator Unit) contributes the remaining 60 per cent, with the total 400bhp or more of hybrid energy transmitted via the front axle.

I sit strapped in the car with my helmet on, thinking how strange it is to be at the epicentre of all this activity – but the apprehension that's usual in these highly unusual circumstances is partially mitigated by having those sim laps under my belt. I'm still daunted by what's to come, but at least I know where the track goes and what the car can do.

The 919 and I are pushed out onto the pit apron on go-jacks. Then the car is dropped onto its Michelin slicks and a calm voice fills my ears, reminding me which buttons to push. I pull away, the e-motor whirring as the 919 accelerates to 40mph before the petrol motor kicks in with a rasp. I de-latch the pit-lane speed limiter and accelerate out onto the circuit.

The 919's light steering and firm pedal action feel oddly familiar, and the track is spooling through the windscreen just as it did in the sim. Porsche has allowed me three seven-lap runs to test the 919 and myself. That may not sound like much, but it equates to 15 flying laps, which is more than enough to probe the limits of both car and confidence. Or indeed exceed them, which doesn't bear thinking about…


PORSCHE
Mobil 1

‘I’VE TOLD MYSELF THAT BY THE END OF THE TEST I WILL HAVE KEPT MY RIGHT FOOT PINNED THROUGH THE FLAT-OUT CORNERS’

'GET THINGS RIGHT IN THE 919 HYBRID, AND IT'S LIKE RIDING A CHAMPAGE CORK AS IT LEAVES THE BOTTLE'

We'll have full access to data traces for each of our runs, including an overlay with the data of factory driver Neel Jani, who was at the controls for that record-breaking lap around Spa. I've told myself that by the end of the test I will have kept my right foot pinned through the flat-out corners. It's something I've never managed to do in a high-downforce car, and something I'm never going to be better prepared for than now. The first few laps leave me questioning whether it's a good idea, but such is my belief in the car and so powerful is my desire to experience the 919's full cornering capability that I pluck up the courage and do it.

If you've ever donned a pair of beer goggles you'll be familiar with their power to change the way you see things. Downforce has the same effect, transforming a sequence of tricky third- and fourth-gear corners into a headlong, sixth-gear rush. In the garage earlier there was talk of weedy neck muscles wilting before the end of seven laps, and I can see why now. On the seemingly endless run through Turn 10 and Turn 11 you sustain 4.1*g* lateral acceleration for over four seconds as you pin the throttle through second to seventh gears. The average cornering force experienced across a lap is 2.5*g*. Peak braking? 2.4*g*. Peak straight-line acceleration? 1.8*g*. Whether stopping, going or cornering, the 919 is a beast.

Once you trust the downforce, it immediately frees up your concentration to focus on the parts of the lap that really make a difference – meaning the braking areas and the exits of key corners. Once you're deploying the car's precious electrical energy, you don't want to interrupt propulsion with a lift of the throttle, so you have to be both precise and super-committed. Fall short in either respect and you squander speed – a minor annoyance in a test like this, but a critical error in a race situation.

One thing you learn quickly is the 919 doesn't like to be hustled, at least not in the conventional sense. With front and rear axles powered by different sources (V4 rear, lithium-ion batteries front) and with separate traction control systems managing each end, it prefers to do things in straight lines. Chase the throttle too soon in a slower corner before you've unwound the steering lock, and the torque will wrench those big Michelins loose. Not for long, but with a snap that requires immediate correction, and with an abruptness that warns you not to do it again.

It's also a challenge to get your head around the braking – not just because the stopping power is extraordinary, but because of the additional effect of the Motor Generator Unit, and because you have to bleed off the pedal as downforce reduces. Watching from the outside, it might seem like you can just smash the pedal, but it's easy to grab an inside front wheel in the final moments of braking, especially if you need to adjust your angle of approach.

If you get things right, if you can slow and turn the car perfectly before firing it down the next straight, it's like riding a champagne cork as it leaves the bottle – a truly magical feeling. In terms of pure performance, no other car I've driven comes even close to the 919 Hybrid, and I doubt that I'll drive anything quite like it ever again. Evo

Above
Nick Tandy prepares for the 2015 24 Hours of Le Mans.

ANATOMY OF A WIN

Nick Tandy recalls driving a 919 to victory at Le Mans in 2015

Interview Sam Hancock **Portrait** Porsche

On race day the alarm was set for 6:30am, and after dodging my way through the city traffic by scooter I arrived in the pits just after 7am. After the two late qualifying nights earlier in the week I had stayed in my little 'chalet' behind the pits, but following the arrival of my wife and daughter I'd switched back to the hotel for the night before the race.

People ask if having the family around is a distraction. To me, having that sense of normality is actually a relief. Kissing them goodbye before I get in the car isn't an issue, either. I do think about the dangers of my job, but only pre-season; once I'm at the track I don't give it a thought. That comes largely from understanding just how exceptional the safety features of the latest LMP1 coupés are. I'd certainly think twice about doing these sorts of speeds in an open-cockpit car.

After the 9am warm-up came engineering meetings and 'meet and greets' until lunch. You might think that the final pre-race meal contains precise amounts of complex carbs, proteins and fats, but actually I prefer to grab whatever I fancy. We are fit, but I've always believed drivers perform best when they're happy, so generally I eat what I like.

By the time the race started at 3pm, Nico [Hülkenberg, who shared the number 19 works 919 with Earl Bamber and Nick] had been in the car for 40 minutes, such was the length of the build-up. The pace in the opening laps was spectacular, and even though Nico was on a triple [one stint is around 45 minutes], I was glued to the screen and itching to get in.

One of the best moments of Le Mans is always the first lap of your first stint. Finally, after all the interviews, the photo calls and the signing sessions, you get to do what you do best and just be out there on your own with the car. It's comparatively calming! But this time, due to a safety car phase in my opening stint that clashed with our fuel strategy and forced an unplanned pit stop, we lost around 80 seconds and had to do an early driver change. This dropped us away from the lead pack.

With temperatures cooling into the evening, it became quadruple stints all the way. That's three-and-a-quarter hours between driver changes – each turn at the wheel more than double the length of a Grand Prix. At night our pace was particularly strong. There was some speculation that there were mechanical differences between Porsche's three cars, but it wasn't the case. We'd set our car up well and it gave us the confidence to push hard. My pace surprised some people because they think of me as a 'GT guy', but I'd always felt I could be quick in a prototype thanks to my background in Formula 3. In fact, I had asked to be tested for the LMP1 squad when they were evaluating drivers for the third car in November of 2014. It wasn't hard to adapt; 900bhp and buckets of grip is what all racing drivers dream of.

'YES, WE DID PARTY, BUT I ONLY LASTED UNTIL MIDNIGHT!'

By midnight we were back in the lead, and a trouble-free run allowed us to build a big gap. Around 4am I grabbed an hour of sleep. You'd think there would have been time for more, but Porsche requires drivers to be ready 30 minutes after the preceding guy has started. By the time you've exited the car, debriefed with the engineers, met with some VIPs and had a bite to eat, there's really not long.

Waiting for Nico to complete those last few hours was agonising. You know the car is great, and you have a stellar co-driver at the wheel, but there's nothing you can do to help at that point. Excuse my French, but I was shitting myself, especially when we had to pit for a precautionary rear bodywork and wing change.

There were no team orders and I knew we were quick, so I always believed we had a real shot, but when Nico took the car safely across the line to secure the win, it was too much to take in. My proudest moment was riding on the car as Nico guided it toward the victory circle. It was then that I could see just how much it meant to so many people – to Porsche, to my co-drivers, my family and the fans.

Later that evening at the party (Yes, we did party, although in my sleep-deprived state I only lasted until midnight!), I asked team boss Andreas Seidl if he'd have thought of me for the LMP1 squad had I not put myself forward, to which he replied: 'No, I probably wouldn't!'

LE MANS FLASHBACK: 2013

ONE LAST WIN FOR MR LE MANS

Tom Kristensen, pictured third from left here, amassed nine Le Mans wins in his remarkable career, setting a record that seems unassailable. The Dane's first triumph came in the 1997 24 Hours, which saw him driving a TWR Porsche WSC-95 for the Joest Racing team. But it was with Audi that he dominated endurance racing like no-one else, though Bentley briefly and very wisely borrowed him for its 2003 Le Mans effort. Between 2000 and 2005, he was on the top step of the podium every year – an astonishing feat. Victory number nine came in 2013, and was celebrated with (from left to right) co-driver Allan McNish, Audi Motorsport boss Wolfgang Ulrich, co-driver Loïc Duval and team director Ralf Jüttner. There were mixed emotions, though: Kristensen dedicated the win to his compatriot Allan Simonsen, who had died after crashing early in the race.


24
ROLEX
HEURES
90
MICHELIN
Audi Sport
Audi
Top Service
24
R. Jüttner

WINNERS OF THE 24 HOURS OF LE MANS

Here they are: all the heroes who have conquered the Circuit de la Sarthe since 1923

Photograph Alamy

YEAR	DRIVERS	TEAM	CAR	LAPS	KM
1923	**André Lagache (FRA), René Léonard (FRA)**	Chenard & Walcker SA	Chenard-Walcker Type U3 15CV Sport	128	2209.536
1924	**Frank Clement (GBR), John Duff (CAN)**	Duff & Aldington	Bentley 3 Litre Sport	120	2077.34
1925	**Gérard de Courcelles (FRA), André Rossignol (FRA)**	Société Lorraine De Dietrich et Cie	Lorraine-Dietrich B3-6 Sport	129	2233.982
1926	**Robert Bloch (FRA), André Rossignol (FRA)**	Société Lorraine De Dietrich et Cie	Lorraine-Dietrich B3-6 Le Mans	148	2552.414
1927	**Dudley Benjafield (GBR), Sammy Davis (GBR)**	Bentley Motors Limited	Bentley 3 Litre Speed	137	2369.807
1928	**Woolf Barnato (GBR), Bernard Rubin (AUS)**	Bentley Motors Limited	Bentley 4½ Litre	155	2669.272
1929	**Woolf Barnato (GBR), Henry Birkin (GBR)**	Bentley Motors Limited	Bentley Speed Six	174	2843.83
1930	**Woolf Barnato (GBR), Glen Kidston (GBR)**	Bentley Motors Limited	Bentley Speed Six	179	2930.663
1931	**Henry Birkin (GBR), Earl Howe (GBR)**	Earl Howe	Alfa Romeo 8C-2300 LM	184	3017.654
1932	**Luigi Chinetti (ITA), Raymond Sommer (FRA)**	Raymond Sommer	Alfa Romeo 8C-2300 LM	218	2954.038
1933	**Tazio Nuvolari (ITA), Raymond Sommer (FRA)**	Raymond Sommer	Alfa Romeo 8C-2300 MM	233	3144.038
1934	**Luigi Chinetti (ITA), Philippe Étancelin (FRA)**	Luigi Chinetti / Philippe Étancelin	Alfa Romeo 8C 2300	213	2886.938
1935	**Luis Fontés (GBR), Johnny Hindmarsh (GBR)**	Fox & Nichol	Lagonda M45R Rapide	222	3006.797
1936	**Not held as a result of worker strikes**				
1937	**Robert Benoist (FRA), Jean-Pierre Wimille (FRA)**	Roger Labric	Bugatti Type 57G Tank	244	3287.938
1938	**Eugène Chaboud (FRA), Jean Trémoulet (FRA)**	Eugène Chaboud / Jean Trémoulet	Delahaye 135CS	235	3180.94
1939	**Pierre Veyron (FRA), Jean-Pierre Wimille (FRA)**	Jean-Pierre Wimille	Bugatti Type 57S Tank	248	3354.76
1940 – '48	**Not held as a consequence of World War Two and the circuit being reconstructed**				
1949	**Luigi Chinetti (USA), Lord Selsdon (GBR)**	Lord Selsdon	Ferrari 166 MM	235	3178.299
1950	**Jean-Louis Rosier (FRA), Louis Rosier (FRA)**	Louis Rosier	Talbot-Lago Grand Sport T26	256	3465.12
1951	**Peter Walker (GBR), Peter Whitehead (GBR)**	Peter Walker	Jaguar C-type	267	3611.193
1952	**Hermann Lang (GER), Fritz Riess (GER)**	Daimler-Benz AG	Mercedes-Benz 300 SL W194	277	3733.800
1953	**Duncan Hamilton (GBR), Tony Rolt (GBR)**	Jaguar Cars Ltd	Jaguar C-type	304	4088.064
1954	**José Froilán González (ARG), Maurice Trintignant (FRA)**	Scuderia Ferrari	Ferrari 375 Plus	302	4061.15
1955	**Ivor Bueb (GBR), Mike Hawthorn (GBR)**	Jaguar Cars Ltd	Jaguar D-type	307	4135.38
1956	**Ron Flockhart (GBR), Ninian Sanderson (GBR)**	Ecurie Ecosse	Jaguar D-type	300	4034.929
1957	**Ivor Bueb (GBR), Ron Flockhart (GBR)**	Ecurie Ecosse	Jaguar D-type	327	4397.108
1958	**Olivier Gendebien (BEL), Phil Hill (USA)**	Scuderia Ferrari	Ferrari 250 TR58	305	4101.926
1959	**Roy Salvadori (GBR), Carroll Shelby (USA)**	David Brown Racing Dept	Aston Martin DBR1	323	4347.9
1960	**Paul Frère (BEL), Olivier Gendebien (BEL)**	Scuderia Ferrari	Ferrari 250 TR59/60	314	4217.527
1961	**Olivier Gendebien (BEL), Phil Hill (USA)**	Scuderia Ferrari	Ferrari 250 TRI/61	333	4476.58
1962	**Olivier Gendebien (BEL), Phil Hill (USA)**	Scuderia Ferrari	Ferrari 330 TRI/LM	331	4451.255
1963	**Lorenzo Bandini (ITA), Ludovico Scarfiotti (ITA)**	SpA Ferrari SEFAC	Ferrari 250 P	339	4561.71
1964	**Jean Guichet (FRA), Nino Vaccarella (ITA)**	SpA Ferrari SEFAC	Ferrari 275 P	349	4695.31
1965	**Masten Gregory (USA), Jochen Rindt (AUT) and possibly Ed Hugus (USA) – see feature beginning on page 70 for more information**	North American Racing Team	Ferrari 250 LM	348	4677.11
1966	**Chris Amon (NZL), Bruce McLaren (NZL)**	Shelby American Inc	Ford GT40 MkII	360	4843.09
1967	**AJ Foyt (USA), Dan Gurney (USA)**	Shelby American Inc	Ford GT40 MkIV	388	5232.9

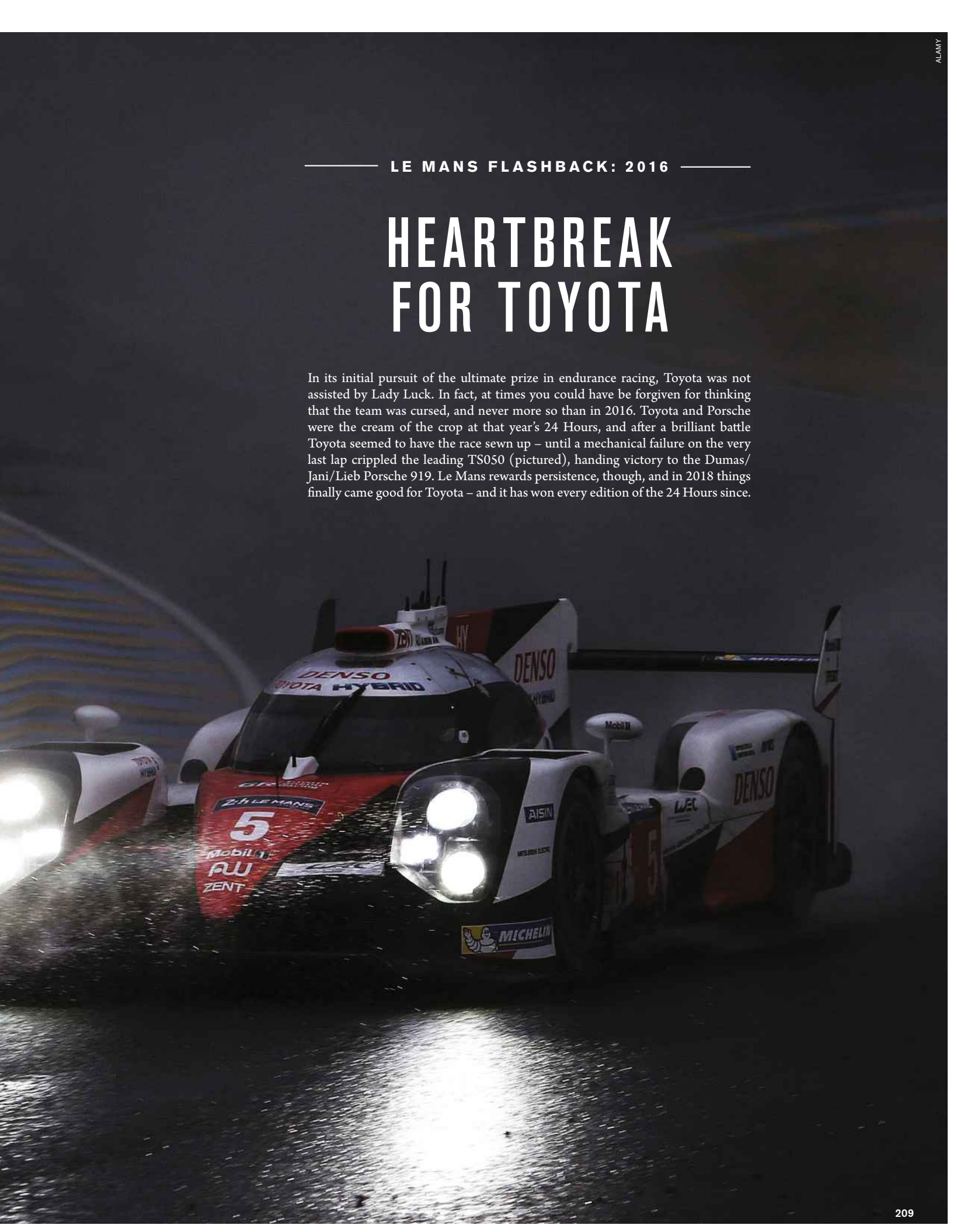
YEAR	DRIVERS	TEAM	CAR	LAPS	KM
1968	**Lucien Bianchi (BEL), Pedro Rodríguez (MEX)**	JW Automotive Engineering	Ford GT40 MkI	331	4452.88
1969	**Jacky Ickx (BEL), Jackie Oliver (GBR)**	JW Automotive Engineering	Ford GT40 MkI	372	4998
1970	**Richard Attwood (GBR), Hans Herrmann (GER)**	Porsche KG Salzburg	Porsche 917K	343	4607.81
1971	**Helmut Marko (AUT), Gijs van Lennep (NED)**	Martini Racing Team	Porsche 917K	397	5335.313
1972	**Graham Hill (GBR), Henri Pescarolo (FRA)**	Equipe Matra-Simca Shell	Matra-Simca MS670	344	4691.343
1973	**Gérard Larrousse (FRA), Henri Pescarolo (FRA)**	Equipe Matra-Simca Shell	Matra-Simca MS670B	355	4853.945
1974	**Gérard Larrousse (FRA), Henri Pescarolo (FRA)**	Equipe Gitanes	Matra-Simca MS670C	338	4606.571
1975	**Derek Bell (GBR), Jacky Ickx (BEL)**	Gulf Research Racing Co	Mirage GR8	336	4595.577
1976	**Jacky Ickx (BEL), Gijs van Lennep (NED)**	Martini Racing Porsche System	Porsche 936/76	349	4769.923
1977	**Jürgen Barth (GER), Hurley Haywood (USA), Jacky Ickx (BEL)**	Martini Racing Porsche System	Porsche 936/77	342	4671.63
1978	**Jean-Pierre Jaussaud (FRA), Didier Pironi (FRA)**	Alpine Renault	Renault Alpine A442B	369	5044.53
1979	**Klaus Ludwig (GER), Bill Whittington (USA), Don Whittington (USA)**	Porsche Kremer Racing	Porsche 935 K3	307	4173.93
1980	**Jean-Pierre Jaussaud (FRA), Jean Rondeau (FRA)**	Jean Rondeau	Rondeau M379B	338	4608.02
1981	**Derek Bell (GBR), Jacky Ickx (BEL)**	Porsche System	Porsche 936/81	354	4825.348
1982	**Derek Bell (GBR), Jacky Ickx (BEL)**	Rothmans Porsche System	Porsche 956	359	4899.086
1983	**Hurley Haywood (USA), Al Holbert (USA), Vern Schuppan (AUS)**	Rothmans Porsche	Porsche 956	371	5047.934
1984	**Klaus Ludwig (GER), Henri Pescarolo (FRA)**	Joest Racing	Porsche 956B	360	4900.276
1985	**Paolo Barilla (ITA), Klaus Ludwig (GER), 'John Winter' (GER)**	Joest Racing	Porsche 956B	374	5088.507
1986	**Derek Bell (GBR), Al Holbert (USA), Hans-Joachim Stuck (GER)**	Rothmans Porsche	Porsche 962C	368	4972.731
1987	**Derek Bell (GBR), Al Holbert (USA), Hans-Joachim Stuck (GER)**	Rothmans Porsche	Porsche 962C	355	4791.777
1988	**Johnny Dumfries (GBR), Jan Lammers (NED), Andy Wallace (GBR)**	Silk Cut Jaguar	Jaguar XJR-9LM	394	5332.97
1989	**Stanley Dickens (SWE), Jochen Mass (GER), Manuel Reuter (GER)**	Team Sauber Mercedes	Sauber C9	389	5265.115
1990	**Martin Brundle (GBR), Price Cobb (USA), John Nielsen (DEN)**	Silk Cut Jaguar	Jaguar XJR-12LM	359	4882.40
1991	**Bertrand Gachot (BEL), Johnny Herbert (GBR), Volker Weidler (GER)**	Mazdaspeed Co Ltd	Mazda 787B	362	4922.81
1992	**Mark Blundell (GBR), Yannick Dalmas (FRA), Derek Warwick (GBR)**	Peugeot Talbot Sport	Peugeot 905 Evo 1 Bis	352	4787.2
1993	**Christophe Bouchut (FRA), Geoff Brabham (AUS), Éric Hélary (FRA)**	Peugeot Talbot Sport	Peugeot 905 Evo 1 Bis	375	5100
1994	**Mauro Baldi (ITA), Yannick Dalmas (FRA), Hurley Haywood (USA)**	Le Mans Porsche Team	Dauer 962	344	4685.701
1995	**Yannick Dalmas (FRA), JJ Lehto (FIN), Masanori Sekiya (JPN)**	Kokusai Kaihatsu Racing	McLaren F1 GTR	298	4055.8
1996	**Davy Jones (USA), Manuel Reuter (GER), Alexander Wurz (AUT)**	Joest Racing	TWR Porsche WSC-95	354	4814.4
1997	**Michele Alboreto (ITA), Stefan Johansson (SWE), Tom Kristensen (DEN)**	Joest Racing	TWR Porsche WSC-95	361	4909.6

YEAR	DRIVERS	TEAM	CAR	LAPS	KM
1998	**Laurent Aïello (FRA), Allan McNish (GBR), Stéphane Ortelli (MON)**	Porsche AG	Porsche 911 GT1-98	365	4783.781
1999	**Yannick Dalmas (FRA), Pierluigi Martini (ITA), Joachim Winkelhock (GER)**	Team BMW Motorsport	BMW V12 LMR	366	4982.974
2000	**Frank Biela (GER), Tom Kristensen (DEN), Emanuele Pirro (ITA)**	Audi Sport Team Joest	Audi R8	368	5007.988
2001	**Frank Biela (GER), Tom Kristensen (DEN), Emanuele Pirro (ITA)**	Audi Sport Team Joest	Audi R8	321	4367.2
2002	**Frank Biela (GER), Tom Kristensen (DEN), Emanuele Pirro (ITA)**	Audi Sport Team Joest	Audi R8	375	5118.75
2003	**Rinaldo Capello (ITA), Tom Kristensen (DEN), Guy Smith (GBR)**	Team Bentley	Bentley Speed 8	377	5145.571
2004	**Seiji Ara (JPN), Rinaldo Capello (ITA), Tom Kristensen (DEN)**	Audi Sport Japan Team Goh	Audi R8	379	5169.97
2005	**JJ Lehto (FIN), Tom Kristensen (DEN), Marco Werner (GER)**	Champion Racing	Audi R8	370	5050.5
2006	**Frank Biela (GER), Emanuele Pirro (ITA), Marco Werner (GER)**	Audi Sport Team Joest	Audi R10 TDI	380	5187
2007	**Frank Biela (GER), Emanuele Pirro (ITA), Marco Werner (GER)**	Audi Sport North America	Audi R10 TDI	369	5029.101
2008	**Rinaldo Capello (ITA), Tom Kristensen (DEN), Allan McNish (GBR)**	Audi Sport North America	Audi R10 TDI	381	5192.649
2009	**David Brabham (AUS), Marc Gené (ESP), Alexander Wurz (AUT)**	Peugeot Sport Total	Peugeot 908 HDi FAP	382	5206.278
2010	**Timo Bernhard (GER), Romain Dumas (FRA), Mike Rockenfeller (GER)**	Audi Sport North America	Audi R15 TDI Plus	397	5410.713
2011	**Marcel Fässler (SUI), André Lotterer (GER), Benoît Tréluyer (FRA)**	Audi Sport Team Joest	Audi R18 TDI	355	4838.295
2012	**Marcel Fässler (SUI), André Lotterer (GER), Benoît Tréluyer (FRA)**	Audi Sport Team Joest	Audi R18 e-tron quattro	378	5151.762
2013	**Loïc Duval (FRA), Tom Kristensen (DEN), Allan McNish (GBR)**	Audi Sport Team Joest	Audi R18 e-tron quattro	348	4742.892
2014	**Marcel Fässler (SUI), André Lotterer (GER), Benoît Tréluyer (FRA)**	Audi Sport Team Joest	Audi R18 e-tron quattro	379	5165.391
2015	**Earl Bamber (NZL), Nico Hülkenberg (GER), Nick Tandy (GBR)**	Porsche Team	Porsche 919 Hybrid	395	5382.82
2016	**Romain Dumas (FRA), Neel Jani (SUI), Marc Lieb (GER)**	Porsche Team	Porsche 919 Hybrid	384	5233.536
2017	**Earl Bamber (NZL), Timo Bernhard (GER), Brendon Hartley (NZL)**	Porsche LMP Team	Porsche 919 Hybrid	367	5001.23
2018	**Fernando Alonso (ESP), Sébastien Buemi (SUI), Kazuki Nakajima (JPN)**	Toyota Gazoo Racing	Toyota TS050 Hybrid	388	5286.888
2019	**Fernando Alonso (ESP), Sébastien Buemi (SUI), Kazuki Nakajima (JPN)**	Toyota Gazoo Racing	Toyota TS050 Hybrid	385	5246.01
2020	**Sébastien Buemi (SUI), Brendon Hartley (NZL), Kazuki Nakajima (JPN)**	Toyota Gazoo Racing	Toyota TS050 Hybrid	387	5272.46
2021	**Mike Conway (GBR), Kamui Kobayashi (JPN), José María López (ARG)**	Toyota Gazoo Racing	Toyota GR010 Hybrid	371	5054.5
2022	**Sébastien Buemi (SUI), Brendon Hartley (NZL), Ryo Hirakawa (JPN)**	Toyota Gazoo Racing	Toyota GR010 Hybrid	380	5177.17

LE MANS FLASHBACK: 2016

HEARTBREAK FOR TOYOTA

In its initial pursuit of the ultimate prize in endurance racing, Toyota was not assisted by Lady Luck. In fact, at times you could have be forgiven for thinking that the team was cursed, and never more so than in 2016. Toyota and Porsche were the cream of the crop at that year's 24 Hours, and after a brilliant battle Toyota seemed to have the race sewn up – until a mechanical failure on the very last lap crippled the leading TS050 (pictured), handing victory to the Dumas/Jani/Lieb Porsche 919. Le Mans rewards persistence, though, and in 2018 things finally came good for Toyota – and it has won every edition of the 24 Hours since.



ALAMY

Left
David Piper in conversation with Steve McQueen during the making of *Le Mans*, 1970.

‘HE WOULD HAVE BEEN A BLOODY USEFUL DRIVER’

Racing driver David Piper recalls his time working with Steve McQueen on the set of the 1971 film, Le Mans

Words Peter Morgan **Photography** Nigel Snowdon & The Speed Merchants Collection

When Steve McQueen needed expert help for the making of his movie *Le Mans* during the summer of 1970, David Piper was one of the first to receive a call. David supplied a number of racing cars for the film and, as McQueen’s on-track double, drove a Gulf Porsche 917K in many of the racing sequences.

Being on the set of a major Hollywood movie was a new and generally entertaining experience for the professional racers involved, but for David there would be a high price to pay. He takes up the story.

‘I became involved, along with Nick Syrett and Alan Mann. Jo Siffert supplied the most cars, but I provided several Lola T70s that the film people made up to look like Ferraris and Porsches. Some were remote controlled, and they lost a few because the radio control wasn’t up to it. The special effects crew had to explode some of the cars as well – and that wrote them off. I had to keep coming back to England to find more Lolas! But that was easier back then as nobody wanted them anymore.

‘I also provided the Fiat Bartoletti transporter that I had at the time. It was the old Lance Reventlow truck that Alan Mann and then John Wyer had owned. For the film, we had to change it from my green colours to Ferrari red.

‘The garages were out at Tertre Rouge and we had to be there at about six o’clock in the morning, every morning. We would drive the cars to wherever we were filming – usually between Maison Blanche and Indianapolis. But we often had to stop because there was a railway crossing with gates. There would be this extraordinary queue of two or three Ferraris, a couple of Porsche 917s, some Matras, and the mechanics in trucks behind.

‘I drove a JWA 917 and a Lola T70; Mike Parkes drove another T70 and a [Ferrari] 512S. Between jobs we’d play gin rummy, or do silly things like walking down the guardrail until we fell off. At lunchtime we’d go back to the Solar [production company] village, where they’d set up a very good canteen, and then it was back to the track.

‘There wasn’t much to do in the evenings. When there’s no race at Le Mans, it’s a sleepy little place. We’d go into Paris occasionally, and sometimes Steve came with us. He was great fun – and the girls went for him big time.’

David shares the generally held view that McQueen was a naturally talented driver.

‘If he’d taken it up professionally, he would have been a bloody useful driver. He was certainly a great enthusiast. We would be sitting in the sun waiting for something to do and suddenly there would be a roar behind us, and Steve would come flying out of the woods, ten feet in the air, on his Husqvarna trail bike!

‘He was a character, but he took the film very seriously and insisted that much of it was done at racing speeds – he didn’t want to speed the cameras up or anything like that.’

That approach meant that there were very real risks during production. While filming one sequence, David suffered a tyre failure at one of the fastest parts of the old Le Mans course, the section through Maison Blanche.

‘In the morning I was driving 917K chassis 13 – painted to look like one of the Gulf cars – and for the first run they decided they wanted the Porsche to be leading and the Ferrari to be second. Mike Parkes was driving the 512S; we did the run and it was fine.

‘After lunch they wanted to do another, this time with the Ferrari leading and the Porsche second. We started off and everything was going well. I went into the right-hander just before Maison Blanche at, I suppose, 140mph, following Parkes.

‘I turned into the apex and I had a tyre burst – the left-hand rear. At least, I think that’s what happened. I hit the guardrail on the right, shot across the track and hit the guardrail on the left. But it collapsed because they’d mounted it in sand, and so I was launched into the air. The impact when I came back down broke the car in half just behind the driver’s seat.’

David was flown back to England in McQueen’s aircraft and he was taken to the Royal National Orthopaedic Hospital where, in due course, he had major surgery to remove the lower part of his right leg.

Mike Parkes later visited the recuperating David with Douglas Bader. ‘When he came into the room,’ David says of the legless Battle of Britain ace, ‘he dropped his trousers and said, “You’ve got nothing to worry about, boy!” And after that I wasn’t really bothered.’

THANKS TO Michael Keyser, author of the book *A French Kiss with Death – Steve McQueen and the Making of Le Mans*.

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