

WORLD EXCLUSIVE

Total 911

THE PORSCHE MAGAZINE



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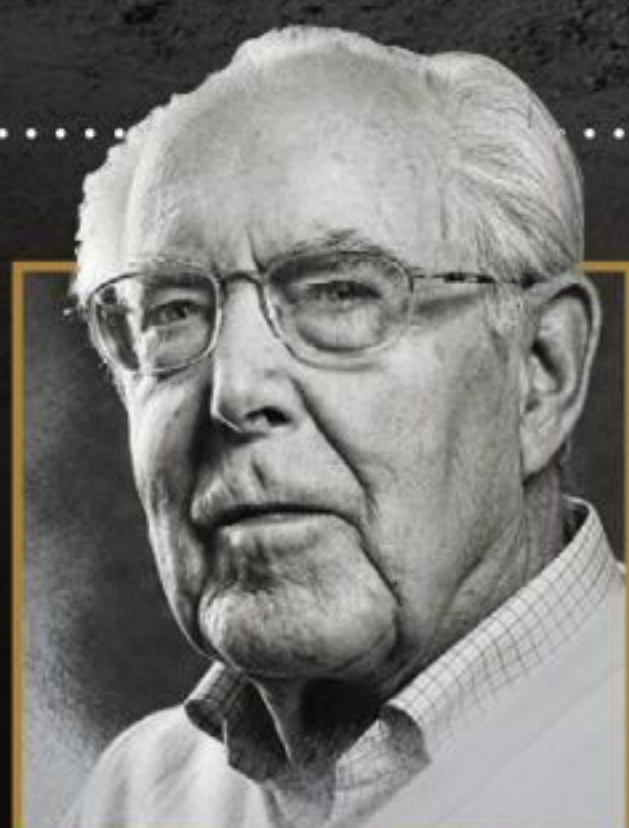


ALL TERRAIN
COMPETITION
STUDY

GUEST EDITOR
ROB DICKINSON
SINGER VEHICLE DESIGN

GOES OFF-ROAD

Your FIRST LOOK at
Singer Vehicle Design's
outrageous new
reimagining of the
Porsche 911



PORSCHE HERO: PETER FALK

The man who engineered 30 years
of legendary 911 development



MANUAL 992 C2S TESTED

Has Porsche finally perfected
its seven-speed stick shift?

FUTURE

ISSUE 200

Digital Edition

Complete Suspension Packages

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The image shows a tablet displaying the Elephant Racing website's 'Suspension Builder' tool. The website has a navigation bar with links: Home, About, Contact, Careers, News, Tech Topics, and Shopping Cart. It also features the Elephant Racing logo, a tagline 'Advanced Suspension Systems For Porsche Cars Design & Development', a globe icon for 'Fast Shipping Worldwide', and contact information 'Sales & Support +1.408.297.2789'. A dropdown menu lists Porsche models: 911, 964, 993, 996/997, 991, Boxster/Cayman, 914, 944, and 356. The 'Suspension Builder' section includes three steps: 1. Select Year & Model (Year: 2004, Model: 996/997/986/987), 2. Select Your Package (Street Performance 2), and 3. Review & Approve. It displays 'Front' and 'Rear' suspension components in a grid. A 'PACKAGE CHARACTERISTICS' table shows 'RIDE COMFORT' at 41 and 'PERFORMANCE' at 63. An 'Add To Cart' button is at the bottom. In the foreground, a red Porsche Carrera GT is shown, with two other red Porsches behind it.

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Suspension Builder

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Model: 911 ▾
996/997/986/987
991
993
914
964
944

2 Select Your Package

Street Performance 2 ▾

3 Review & Approve
Add, update, or remove parts
using the tables below

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Front

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RIDE COMFORT	41
PERFORMANCE	63

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Welcome

I'm incredibly proud to be taking the helm as guest editor of **Total 911** for this milestone 200th issue. As the magazine embarks on the road to the next hundred issues, Singer's second decade is underway. These significant moments often cause us to look back and here at Singer HQ in California I've been doing a little of that, as around me our phenomenal team completes the latest cars.

In 2003 I restored and modified a 1969 911E in Bahama yellow as an intensely personal mission, and then I drove the sh*t out of it every day around Los Angeles and the Hollywood hills. In 2012 I was humbled by the offer to have the car featured in this magazine.

I'm every bit as humbled in 2021 to have this opportunity to write a few words for this magazine that I've read for many years now. It gives me the chance to tell you about some of the Singer-related news you'll find in this issue.

First, I'm thrilled to be able to introduce you to the results of the All-terrain Competition Study. We've taken inspiration from a golden era of Porsche rallying in the 1980s and heroes like the 911 SC/RS and 959 Dakar to enable our client to restore his 911 as a turbocharged, WRC-inspired, all-terrain competition machine.

As always we've sought out partnerships with the best in the world and to that end have joined forces with Richard Tuthill, who has poured every bit of expertise from decades at the forefront of 911-based motorsport into this amazing machine. ACS is close to our hearts as it advances Singer's capabilities in forced-induction, all-wheel drive, off-road ability and dynamic response – all of which will support our ongoing mission.

Also in the magazine you'll find news from the Dynamics and Lightweighting Study. Despite the world's best efforts to turn itself upside down this year, work has continued apace at Singer's operations in the UK and the first cars are in final assembly as I write. One of our incredible clients has kindly allowed us to share images of his chosen specification which I hope you'll enjoy, along with all the brilliant writing that **Total 911** is known for.

Singer and **Total 911** have grown up together over the last ten years and two hundred issues. As a disciple of the grassroots UK Porsche community, where I cut my teeth as a 911 enthusiast, I'm honoured that we're able to mark this milestone issue together.

Happy reading and long live the 911!

ROB DICKINSON

Singer Vehicle Design

“Singer and
Total 911 have
grown up together
over the last ten
years and two
hundred issues”

4 | Banbury, Oxfordshire, United Kingdom

Shot

Total 911 Opening

Photograph by **Ali Cusick**

It's the Porsche 911, but as we've never seen it before: Singer Vehicle Design opens a stunning new chapter in its programme of reimaginings, swapping road for rally with its radical All-Terrain Competition Study. **Total 911** has the world exclusive first look on the 964 restored to take on the Dakar.





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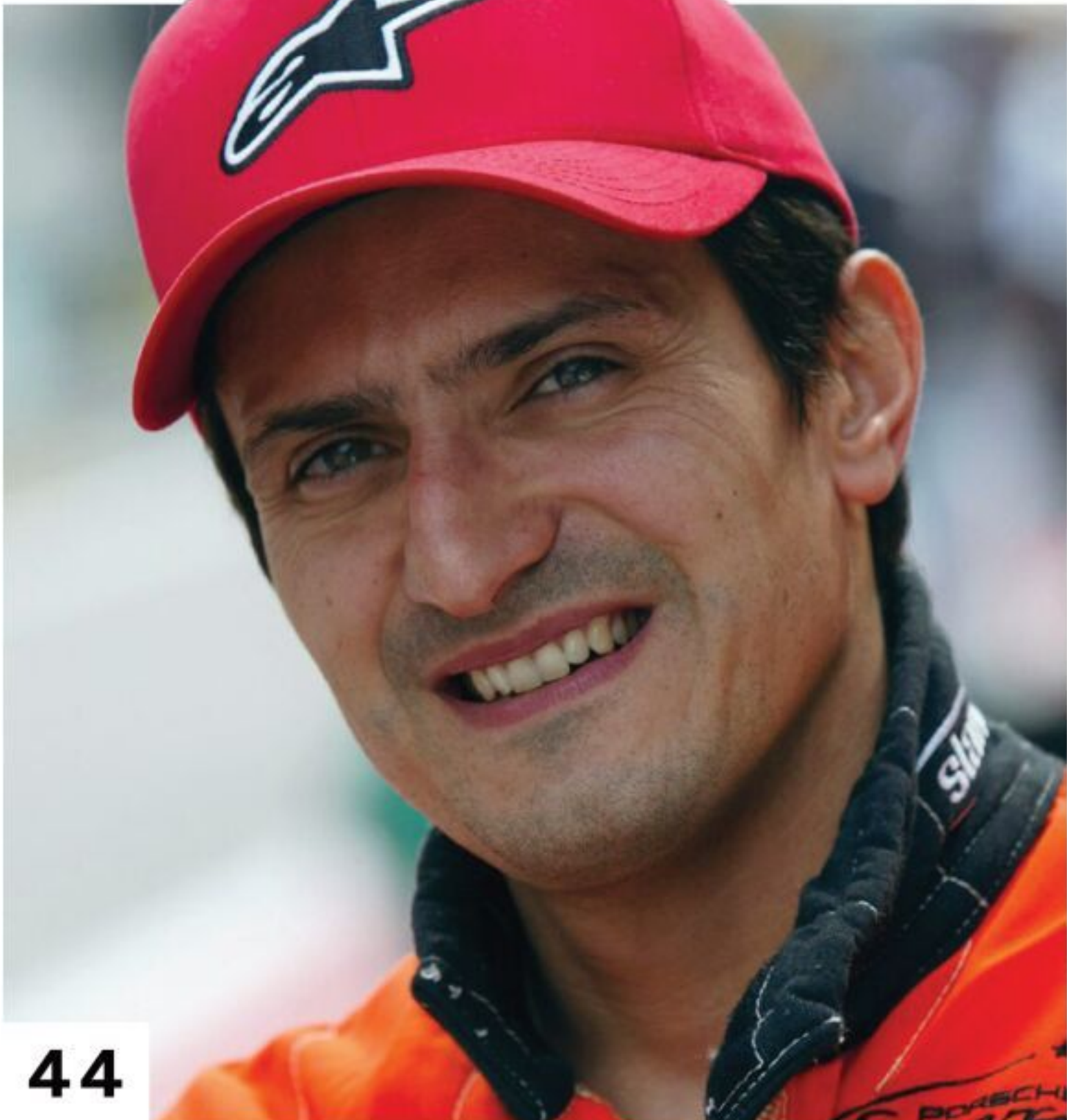
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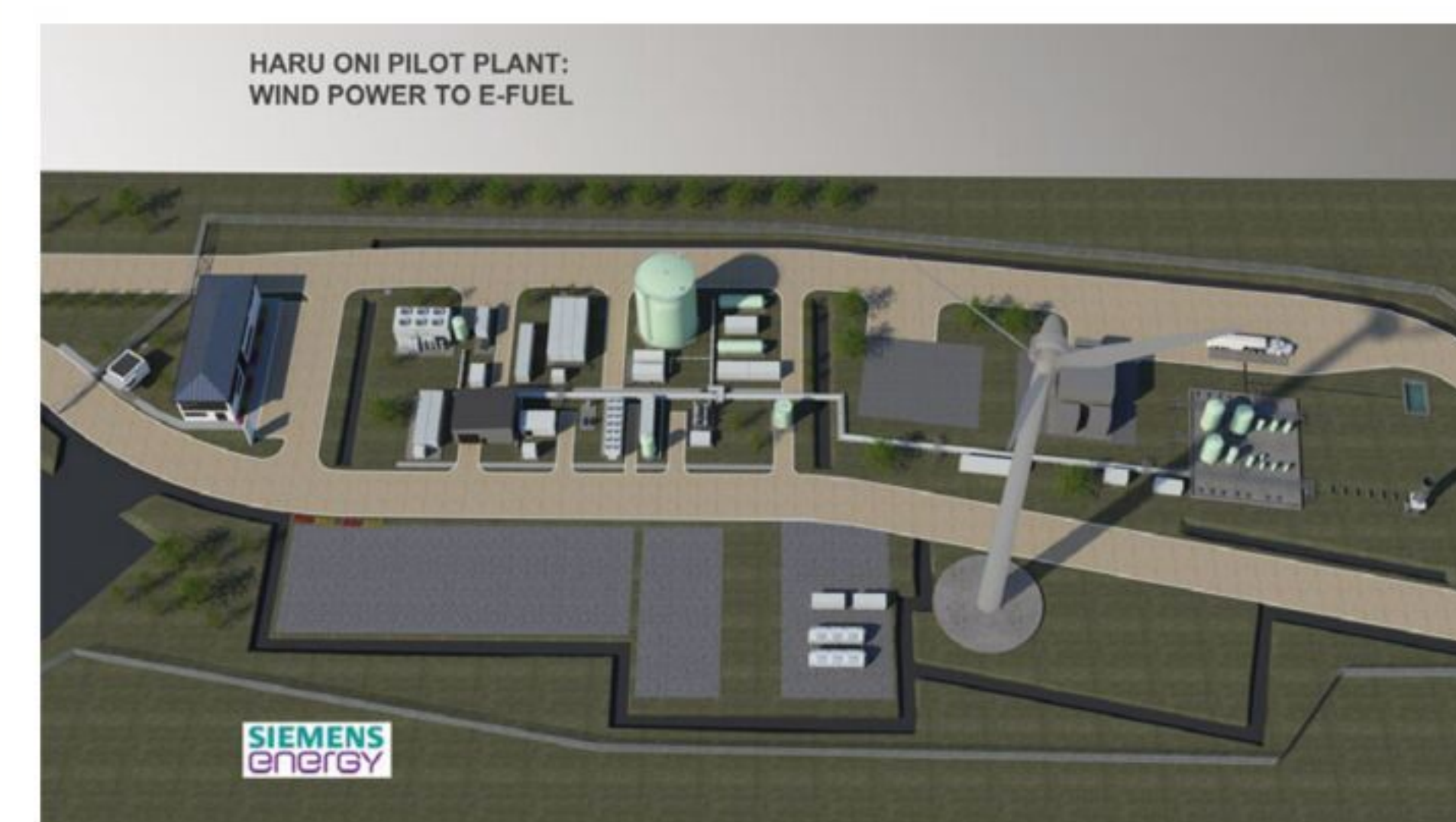


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992 Cup car breaks cover

Porsche reveals Supercup-spec 911 for forthcoming 2021 season

Weissach has revealed its new 911 GT3 Cup car for the forthcoming motorsport season. The 2021 model year racer is the first to be based on the 992 generation of Porsche 911, and will be sold to customer teams wishing to compete in Supercup and selected Carrera Cup championships later this year. The new race car is the seventh generation of GT3 Cup 911, with Weissach having

sold 4,251 units since 1990, when Porsche decided to build a competition-spec 911 specifically for one-make racing, which plays an integral role in the Motorsport pyramid.

Development of the new car began back in mid-2018 once the final production specifications of the 992-generation road car had been confirmed. "We listened carefully to the engineers

and mechanics as well as the drivers and team bosses to find out what they like about the current car and what is needed," explains product manager Christoph Werner. The 2021 Cup car, powered by a 510hp naturally aspirated flat six, features a Turbo-wide body for the first time, and can be run on synthetic fuels. Costs for the new Cup car start at 225,000 Euros plus taxes.

Book review: 111 More Porsche Stories That You Should Know

Brilliant second volume brings you more insider stories from the 'dream factory'

It's the sort of material that connoisseurs should be clamoring to consume: Wilfried Müller's popular book

111 Porsche Stories That You Should Know has given rise to a brand-new volume for 2021 that'll be sure to broaden the knowledge of even the most ardent of the Porsche cognoscenti.

Müller has delved deep into the archives and flexed his considerable contacts, including past and present employees at the manufacturer, to spoil you with an avalanche of little-known facts and anecdotes, incorporating Porsche-based ventures through London,

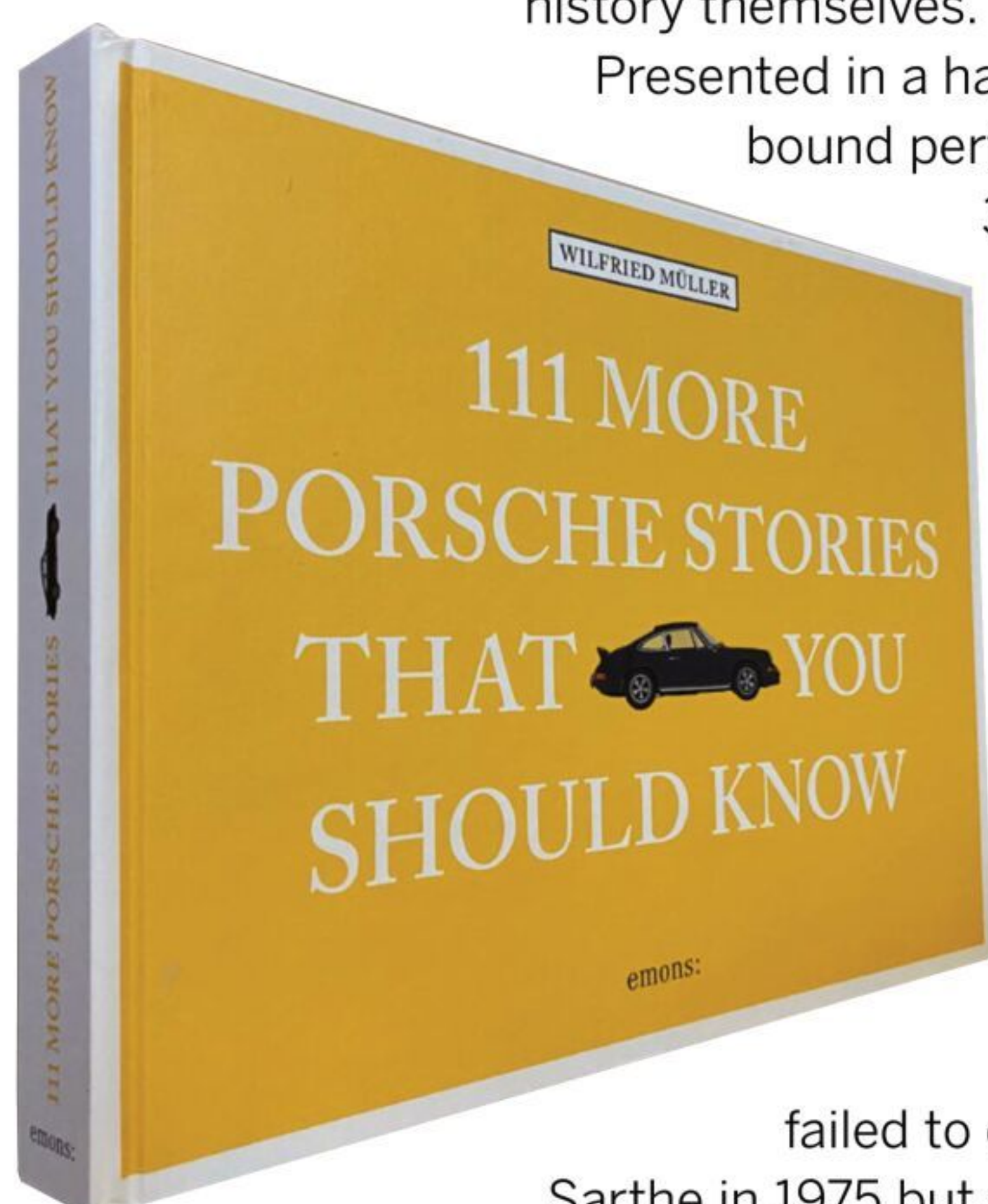
Sydney, Nairobi and Northern Sweden, often told by the people who wrote these pages in history themselves.

Presented in a hard cover and bound perfectly over

304 pages of elegantly presented stories and beautiful pictures, our personal favourite involves the story of a 'ghost' Le Mans RSR which

failed to qualify at La Sarthe in 1975 but nevertheless started the race, before a prompt disqualification only three laps later. We won't spoil the rest for you...

Priced at £20.00 in the UK or \$32.95 in the US, for more information on the book (ISBN 978-3-7408-0904-1) visit [111places.com](https://www.111places.com).



Improve the sound of your 992

New muffler from FVD increases soundtrack of latest flat six

Thanks largely to its gasoline particulate filters, the 992 is arguably the quietest Porsche 911 of the water-cooled era. However, Capristo's Valved Muffler – available from the German tuners FVD Brombacher – gives a welcome boost in resonance to Porsche's latest flat six soundtrack.

The muffler offers what FVD says is sound and performance without compromise, its vacuum-actuated exhaust valves being controlled by exhaust back pressure, or a manual override

from the driver. FVD says with the valves closed, the muffler emits a low, subtle exhaust note. With the valves open, this evolves into a loud, aggressive exhaust note, with the valves boasting an ability to be manually controlled via an included CES-3 remote control.

Lighter than factory-spec and made from high-quality stainless steel, the Capristo Valved Muffler bolts onto existing factory mounting points and reuses factory cats, exhaust tips and clamps. For more information visit [fvd.net](https://www.fvd.net).





New timepiece brings magic of RUF to your wrist

Nezumi x RUF Voiture Chronograph fuses an enthusiasts' favourite with Pfaffenhausen flair

It might only be January, but already **Total 911** is happy to present what it tips to be watch of the year for Porsche enthusiasts. While we await the imminent arrival of the SCR from RUF Automobile, the long-time and decorated engineers of bespoke sports and supercars, a tie-up with Stockholm-based Nezumi Studios has seen the release of a timepiece which brings its philosophy of engineering precision from road to wrist.

Nezumi's timepieces are a firm **Total 911** favourite having featured consistently in the mag over the years, its decorated Voiture Chronograph in particular finding favour for its dedication to detail and vintage, motorsport-style appearance.

Nezumi's latest and greatest addition to the Voiture collection comes from its Specials line, created in Sweden by Nezumi founder and designer, David Campo, in partnership with RUF director, Estonia Ruf. Made in Germany, the ref. VQ2S.901 features a steel case, flanked at either end by a fine, perforated leather band. Its solid, moulded case back also comes engraved with the RUF logo. Inside the double-domed sapphire crystal glass with anti-reflective coating, a RUF green watch face is elegantly contrasted by a black tachymeter, which can for example be used

to determine the speed of a vehicle travelling between two set points. A stopwatch function enables the wearer to measure lap times via the timepiece, which measures 40mm in diameter (excluding the crown).

For Nezumi's David Campo, the partnership with RUF for this signature timepiece is not just a reflection of a shared philosophy for the efficient interaction of parts and the emotions they drive. It's also about a passion for cars: the horologist is a devout Porsche enthusiast and enjoys evolving the 911's timeless design on his various classic projects, having also set up Roughneck Brigade, a members-only classic Porsche club. "I admire the RUF design strategy and have a particular affinity with the company's later cars, which it has been able to design from the ground up," he tells us. "RUF have been early modifiers within the Porsche scene, and that's something that's always appealed to me."

The ref. VQ2S.901 timepiece is limited to 200 units, each individually numbered, and comes with a two-year warranty. For more information, visit nezumistudios.com/product/voiture-nezumi-x-ruf. You can also follow Nezumi across your preferred social media channels @nezumistudios.

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1969 Porsche 911S Targa Stock# 12748

This 1969 Porsche 911S Targa is available in its factory color code #6809 tangerine with a black interior. It comes equipped with a 5-speed manual transmission, 1971 Porsche 911S 2.2-liter engine, Weber carburetors, 4-wheel disc brakes, and Fuchs wheels. An original California car which had the same owner for many years. The Porsche 911S Targa is also mechanically sound.

For \$69,500



2007 Porsche Carrera Cabriolet 6-Speed Stock# 12615

This 2007 Porsche Carrera Cabriolet featured here with 2 tops (power soft top) is available in its factory color combination of Guards Red with a stone-grey interior and the Certificate of Authenticity included. It comes equipped with a 6-speed manual transmission, a 3.6-liter engine, air conditioning, cruise control, heated seats, power mirrors, power locks, power windows, power steering, power seats, Bose sound system, drilled rotors, and Porsche Lobster Claw wheels. Also included with this vehicle is the original window sticker as well as receipts totaling over \$7,000. A gorgeous sports car which is mechanically sound.

For \$29,950



1997 Porsche 993 Turbo Stock# 12661

The 1997 Porsche 993 Turbo featured here with 36,066 miles on the odometer is available in its factory color code #970 Arctic Silver Metallic with a black interior. It comes with a clean Carfax and is equipped with a 6-speed manual transmission, air conditioning, cruise control, dual airbags, power mirrors, power windows, power steering, power seats, sunroof, drilled rotors, 5-spoke wheels, tool kit, air compressor, and jack. Also included with this vehicle is the original owner's manual as well as the warranty and maintenance booklets. A very desirable Porsche Turbo which is mechanically sound.

For \$139,950



1991 Porsche 964 Carrera 2 Targa Stock# 12716

This 1991 Porsche 964 Carrera 2 Targa is available in its factory color code #700 black with a gray interior. It comes with a clean Carfax and is equipped with a 5-speed manual transmission, cruise control, dual airbags, air conditioning, power windows, power steering, power seats, 4-wheel disc brakes, solid wheels, and jack. A desirable German sports car which is mechanically sound.

For \$49,950



1991 Porsche 964 Carrera Targa Stock# 12761

This original paint 1991 Porsche 964 Carrera Targa featured here with 74,212 miles on the odometer is available in its factory color code #700 black with a sand beige interior. It comes with a clean Carfax and is equipped with a G50 5-speed manual transmission, air conditioning, cruise control, dual airbags, power windows, power steering, 4-wheel disc brakes, solid wheels, tool kit, air compressor, and jack. All stickers in place which includes the color code sticker under the hood. Also, included with this vehicle are service receipts from 2003 to 2020 which includes a major service done on October 5, 2020, at a cost of \$4,800. An excellent original California car which is mechanically sound.

For \$59,950



1991 Porsche 964 Carrera 2 Targa Stock# 12871

The 1991 Porsche 964 Carrera 2 Targa featured here with 44,380 miles on the odometer is available in its factory color code #80K Guards Red with a black interior. It comes equipped with a Tiptronic transmission, air conditioning, cruise control, power windows, power steering, 4-wheel disc brakes, and solid wheels. Also included with this vehicle are receipts totaling over \$26,000. A gorgeous color combination air-cooled Porsche that is mechanically sound.

For \$49,950



1987 Porsche Carrera Coupe Stock# 12799

The 1987 Porsche Carrera Coupe featured here with matching numbers is available in its factory color code #36P Venetian Blue Metallic with a parchment interior. It comes equipped with a 5-speed manual transmission, air conditioning, cruise control, power windows, sunroof, 4-wheel disc brakes, Fuchs wheels, jack, and tool kit. A beautiful color combination Porsche which is mechanically sound.

For \$49,950



1985 Porsche Carrera Coupe Stock# 12573

The 1985 Porsche Carrera Coupe featured here with matching numbers is available in its factory color code #027 India Red with a black interior. It comes with a clean Carfax and is equipped with a 5-speed manual transmission, cruise control, power windows, 4-wheel disc brakes, sunroof, tool kit, and Fuchs wheels. A formidable well-priced Carrera Coupe which is mechanically sound.

For \$46,500



1984 Porsche Carrera Coupe Stock# 12642

The 1984 Porsche Carrera Coupe featured here with matching numbers is available in Copper Brown Metallic with a black interior. It comes equipped with a 5-speed manual transmission, air conditioning, cruise control, power windows, sunroof, 4-wheel disc brakes, Fuchs wheels, tool kit, and a jack. Also included with this vehicle is the original owner's manual. A beautiful color combination sports car which is mechanically sound.

For \$46,500



1981 Porsche 911SC Coupe Stock# 12878

The 1981 Porsche 911SC Coupe featured here with matching numbers is available in Light Ivory with a brown interior. It comes with a clean Carfax and is equipped with a 5-speed manual transmission, 3.0-liter engine, cruise control, air conditioning, power windows, sunroof, 4-wheel disc brakes, and Fuchs wheels. A gorgeous color combination Porsche which is mechanically sound.

For \$34,750



1980 Porsche 911SC Coupe Stock# 12527

The 1980 Porsche 911SC Coupe featured here with matching numbers is available in its factory color code #451 Mocha Brown with a sand beige interior. It comes equipped with a 5-speed manual transmission, 3.0-liter engine, air conditioning, cruise control, power windows, sunroof, 4-wheel disc brakes, and Fuchs wheels. Also included with this vehicle are receipts totaling over \$16,000. A well-priced 911SC Coupe which is mechanically sound.

For \$39,950



1973.5 Porsche 911T CIS Targa Stock# 12728

This extremely sought after 1973.5 Porsche 911T CIS Targa featured here with matching numbers is available in its factory color code #622 Beige Gray with desirable sport seats with Houndstooth inserts. It comes equipped with a 5-speed manual transmission, 2.4-liter engine, 4-wheel disc brakes, Fuchs wheels, tool kit, and jack. Do not miss your chance to jump into the ownership of this beautiful 911T CIS Targa that was featured in a Porsche book. An impressive original California car which had the same owner since 1985 and who was consequently a Porsche Club of America (PCA) member. The Targa is mechanically sound.

For \$96,500



1970 Porsche 911T Coupe Stock# 12633

This factory color 1970 Porsche 911T Coupe featured here with matching numbers is available in its original color code #2626 Conda Green with a black interior. It comes equipped with a 5-speed manual transmission, 4-wheel disc brakes, and Fuchs wheels. Also included with this vehicle is the original owner's manual, Porsche Red Book as well as service records and receipts totaling over \$15,000. An excellent original California car which had the same owner for many years and is mechanically sound.

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GUEST COLUMN

Brian Redman

PART OF A
SPECIAL
MINI-SERIES

Great Britain's Brian Redman is unquestionably one of the greatest drivers of his generation. The former Porsche factory driver continues his sit down with Total 911's Tony McGuinness for part eleven in a series looking back at Brian's remarkable life and career



Last month in **Total 911** issue No.199, I discussed my experiences racing at the 1968 and 1969 24 Hours of Daytona. In 1969, I was officially a Works Porsche Driver. That year at Daytona, I partnered with Vic Elford in piloting a 908 LH (long-tail). Vic had put us on pole, but it was not to be, and we were out by the halfway point. We weren't alone in our ill-fated attempt at securing victory for Porsche, as all five factory 908s were forced out with mechanical issues.

This month, I will take you back almost 51 years in time to the legendary battle of the 1970 24 Hours of Daytona. The January 1970 race marked the debut of the JW Automotive team's remarkable Gulf Porsche 917Ks (above). As I mentioned earlier this year, JWA Gulf was considered the exclusive Porsche factory team. John Wyer's team was the official Porsche entry at Daytona with full factory backing.

Therefore, when our team arrived at Daytona in late January, we were surprised to learn Ferdinand Piëch, head of Porsche Motorsport, brought another factory 917K to compete. We discovered the car was entered by Porsche Konstruktionen, basically the Porsche factory development department. Painted in the white and red Porsche Salzburg livery, this 917K would be piloted by none other than Vic Elford and Kurt Ahrens.

John Wyer was rightly bothered by the unexpected competition from within Porsche itself. Our team recognised we would be battling against three new Ferrari 512s, manned by talented Ferrari factory team drivers including Mario Andretti and Jacky Ickx. We also understood the presence of the Salzburg 917K meant we would be racing against ourselves too.

For the race, Pedro Rodriguez was teamed with Leo Kinnunen in a 917K painted in the iconic Gulf livery colours of Cerulean blue and orange. A black number 2 was emblazoned on the bonnet and doors. I was paired with Seppi Siffert in the equally magnificent Gulf 917K number 1 car. Due to the 31-degree banking corners at Daytona, the roof of both cars were fitted with an oval-shaped window to provide the drivers a view of the banking ahead of us.

Mario Andretti in the new Ferrari 512S took pole position. Jo Siffert in our Porsche was on the outside of the front row. Shortly after the start, Siffert jumped Mario for the lead. Everything was going pretty good as both our Gulf 917s were running 1st and 2nd.

Our 917K stayed in the lead for three hours until we had problems. Fairly early on in the afternoon, I was heading down the back straight before turn 4. There were a bunch of Trans-Am cars ahead of me (Camaros and Mustangs). Even though they were pretty much taking up most of the track, there was room for me to shoot in between them. Just as I got through them, my left rear tyre burst.

It did a lot of damage to the oil tank and the body work, so we lost about 20 minutes. Of course, we then started in traffic, having to drive ourselves out of it. We also had other issues including a fuel leak, which cost us another 20 minutes.

In the early morning at 2:00am, I had come off the banking over what used to be a bump where the tunnel was. As I went over the notorious NASCAR 4 hump, there was a bit of a lurch and a bang. Suddenly, I was spinning down the front straight. Normally, drivers of racing cars experience almost no sense of speed even at 200mph, except when out of control. That night I saw Daytona's infield lights and outside wall swap places over half a dozen times – I found the velocity terrifying. Hitting the hump caused the right rear shock absorber to break off its mounting. We lost 20 laps fixing all the problems, dropping us to 3rd.

In the meantime, the Pedro Rodriguez/Leo Kinnunen Porsche was now leading and running flawlessly. After repairs, we rejoined the race and followed our teammates through the night until 7:00am when the clutch failed. The Porsche engineers were standing looking at it and said it would be possible to change the clutch in just over an hour.

The JWA mechanics had never changed the clutch. I thought we were out, but they pushed it

behind the wall and changed the clutch. It was a huge job and it dropped us from 20 laps behind to over 50. Incredibly, however, we were still retaining 3rd place.

While the mechanics were working on the clutch, John Wyer came up to me and said, "Brian, would you mind doing a session in the Rodriguez car? We can't make Kinnunen understand what we would like him to do." It was difficult to know if Leo didn't understand team orders to slow down and conserve the car or if he refused to obey them. It was difficult to know which, as he spoke no English and back then our cars didn't have radios.

I took Leo's place with strict instructions to run calibrated times, fast enough to win but slow enough to protect the car. Out I went in the number 2 Gulf 917K. Towards the end of that session on the banking, Siffert came hurtling past me in our own 917K and gave me a wave of course. Not only was the Porsche factory team racing its competition director, I found that I was now racing myself!

I had an incident during the race where I slid on the left-hand turn going onto the banking out of the infield. I got a little bit wide and got onto the dirt and slid into the wall. I didn't hit too hard, but it damaged the nose and had to be taped up. In those days, the nose on the 917 wasn't detachable. It was all part of the car's structure.

I drove flat out in my car to the end of the race, as did Seppi. And near the finish, he managed to pass the Andretti/Merzario factory Ferrari to capture 2nd place. With the number 2 Gulf 917K of Rodriguez/Kinnunen taking victory, it gave Porsche, Gulf and JW Automotive an incredible 1-2 finish on their shared debut.

Officially, I finished 1st and 2nd at the 1970 24 Hours of Daytona. Since I contributed to the win by driving a session in the number 2 Gulf 917K, I was expected to join Rodriguez and Kinnunen on the top of the podium. However, I chose not to do so and was content to stick with Seppi one level lower. **911**



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The very best of your Porsche opinions



A different kind of virus

Dear Sir,

You might recall my dad, Adrian Gammon, had a letter published in your magazine earlier this year regarding wrapping cars versus painting them. Well, since that letter was published he bought a very early Speed yellow Boxster 3.2 S and a very early ('98) Guards red 996.1 Carrera with cable throttle. This spate of buying has led me to believe we might be dealing with another case of car-owner virus here – what do you think? It was his birthday recently so I decided to go ahead with a diagnosis as the theme of his birthday card – I'm sure the card design will resonate with your readers. The card was just intended to give him a bit of a laugh, really... something we could all use! His Porsche-purchasing habits have been the subject of much debate recently (both of the cars pictured belong to him... you can imagine, I'm sure).

India Gammon



Absolutely brilliant, India! We were very pleased to see your efforts for your dad's birthday card. Perhaps you might be able to design the magazine for us one day?

Judging by Adrian's recent purchases, I concur he does appear to have a spout of car-owner virus, not a condition that can be easily cured I'm afraid. Many suffer from it for years, I can tell you. We'll put a copy of the card in our next issue of the magazine, hopefully it'll make readers smile like it did us here at T911.



997 Turbo S: the forgotten gem

Dear Sir,
I wanted to thank you for your perspicacious review of the 997 Turbo S. There seems to be a mindset amongst most Porsche owners that newest is always best. I sold my concours-winning 996.2 GT3 of several years to purchase a 2012 997.2 Turbo S with 9K miles. I had no desire to even look at 991s or 992s. In my opinion they are much too big and no longer represent a true sports car experience. 992s are massive sedans compared to older 911s. Sure, more power is always nice, but being overwhelmed by technology and continued 'removal' of the driver control in lieu of computer control is far too

distracting. I have owned and raced Porsches for almost 50 years, going from a 356 Super 90, '74 Carrera, several 3.2 Carreras and 3.2 Clubsport, and the previously mentioned GT3. The Turbo S is so much more enjoyable than the GT3 and in Sport Plus mode just as visceral, and exceedingly suits all my driving needs. The 997 Turbo S is perfection in the context of Turbo lineage, indeed.

Stephen Gies

We're very pleased the article resonated with you, Stephen. We've long held the 997 Turbo S in high regard for its rich specification and 'special'

feel – unlike the later Turbo S 911s, the 997 was a genuine run-out special rather than a mere upgrade in spec over a Turbo. Its PDK gearbox isn't as sharp as the 992 generation today but the car still feels mighty quick by modern standards. It's a brilliant 911 and we hope you continue to enjoy yours.



911: the everyday sports car

Dear Sir,
I thought you and your readers would appreciate this beauty found on the quiet streets of London. Feel free to use it in the magazine.
Adrian Leek

The lesser-spotted long bonnet 911, in the wild! Your picture actually gave us an idea for a feature, Adrian, which readers can look forward to for issue 201. Watch this space!



Ask the expert

Got a question for our Porsche technician? Email us editorial@total911.com



Scott Gardner
Job title
Workshop manager
Place of work
Porsche Centre Bournemouth, UK
Time at Porsche
14 years

Jerry from Down Under here with a 2005 997.1 C2 Coupe. I'd like to say I've been enjoying **Total 911** for many years. There are copies of your lovely magazine scattered all over our home! Keep up the good work.

I have a question for you: my 997 has done 130,000 kilometres with a perfect Porsche service history. Upon startup I am getting smoke, this is both on a hot and cold startup. It seems to be intermittent but lately it's more frequent. Oil consumption is okay, there is no build up in the exhaust pipe of oil, and after replacing coils and plugs over a recent weekend, the plugs were nice and clean. Now I know many people will say it is 'normal' but I thought I should explore further. I might test the air/oil separator as a starting point. What are your thoughts and experiences on this? Any advice would be greatly appreciated.
Jerry Maroulis

There can be lots of reasons for smoking from the exhaust, and the colour of the smoke can help identify the issue quicker. If it's a blue/black shade of smoke, this could be an indication of scored bores. If it's smoking out of one side more than the other then this will add to evidence of scored bores being the case.
If the smoke is more of a blue/white shade, it could be a sign of the oil/air separator starting to play up. In this case, it would be a good starting point to replace the unit as they are not overly expensive, and monitor the smoking following replacement. Do bear in mind some light smoking and the odd puff now and again can be a normal trait of the flat six engines, and owners can easily and mistakenly believe a fault is present. As always, consult your local OPC if the problem persists.



— WORLD EXCLUSIVE —

ALL-TERRAIN COMPETITION STUDY

Introducing Singer's first race restoration of the Porsche 964,
emphatically reimagined for the dunes of the Dakar

Written by **Lee Sibley** Photography by **Ali Cusick** and **Singer Vehicle Design**



“What’s quite remarkable about 911s is they suit off-road use. It’s part of their genius,” so says 911 rally and motorsport specialist Richard Tuthill, while giving the Parallax white Porsche in front of us a final checkover pre-photography.

As is well known, for as long as the 911 has been driven for the purpose of recreation, it has also done so for racing – be it road or rally. We’ve documented the 911’s rich history in rallying many times in this magazine, which was borne out of Peter Falk (more on him on page 50) and Herbert Linge’s thrilling assault on the 1965 Monte Carlo rally in a near-stock 911S, winning their class and finishing 5th overall. Porsche’s decorated legacy over rough terrain in the 45 years since includes notable dominance at the Dakar and, latterly, thanks to Mr Tuthill, safari success in East Africa, simply one of the world’s toughest endurance races. By default you might think that the 911 was built to go racing – on tarmac – but rallying over rough terrain has also been at the core of its DNA, which brings us to the latest work from Singer.

Regular readers (and indeed anyone who hasn’t been living under a rock these last ten years) will

know of Singer’s brilliant work in restoring Porsche 911s, unleashing in them a new lease of life that enhances Ben Dimson’s original design. Its work has captured the imaginations of enthusiasts around the world, and Singer’s operations have also gone global, the home of its forthcoming DLS restorations making the jump over the Atlantic to the United Kingdom.

But you knew all that. What you won’t know, though, is that Singer is, for the first time, presenting a restoration which demonstrates extensive all-terrain exploration capabilities, including for the purposes of motorsport. It’s the result of what Singer calls the All-terrain Competition Study, and was developed in partnership with Richard Tuthill.

The project covers entirely new ground for Singer, quite literally, and began back in 2018. “Around two years ago we had a client approach us and say, ‘Can you build me two rally cars?’ I said, ‘We don’t know how to do that... but we’ve heard of a guy,’” says Mazen ‘Maz’ Fawaz, CEO at Singer. “Richard and I had never met at that point but our mutual friend Chris Harris put us in touch, so I went out to England and met him. I arrived at Tuthill’s and within eight minutes I was in a racing car with dog ‘box, blasting down what is the wrong side of the road for me!

I’d never driven a dog ‘box and I didn’t know this guy, and yet there we were, running around the countryside. We then got to the WRC 997 R-GT and by that point, I was pretty sure Richard was the guy we needed to work with. We became fast friends.”

Tuthill, who would go on to assist with testing and development of the DLS restorations, is well known for his historic motorsport preparation of classic Porsche 911s. His company’s reputation in this field extends right around the world, mainly because a Tuthill car has excelled in competition in every corner of it. His expertise and experience would be fundamental in Singer diversifying into restorations tailored for off-road motorsport. Maz explains: “One of the reactions that Rob and I shared was this trend of lifted 911s. It’s been going on for a few years so there’s a lot of tall 911s, rather than actual racing cars developed over decades, with legitimate rallying adventures – the way Richard has built his reputation. Singer is not trendy, so it didn’t sit with us to do something trendy like a ‘lifted’ car. We were never comfortable with the whole thing and weren’t in love with doing anything to begin with. When Richard started to introduce what happened mechanically, everything changed.” ➡



Like all of Singer's restorations, the base car is a 964-generation 911, though this wasn't a prerequisite, per se, for what became the All-terrain Competition Study. "It started that way because the client brought a couple of 964s to us and asked if Singer would make rally cars," Maz says. "It wasn't a case of us being determined from the outset for this to be based on a 964, it just happened. However, this probably is so off-piste anyway in its construction that, at the end of the day, I'm not sure how much of a difference using a 964 or a G-body would have made, because the approach with the chassis and suspension was outside of either of them."

The body, which has front and rear clamshells, is made of carbon fibre, aspects of its unique design clearly referencing other Porsche greats from the company's golden era in rallying, such as the 959 and 953. Each panel has been specially designed to allow for quick replacement and instant access to the vehicle, which is vital for off-road competition. Its ride height has been dramatically increased, with a full aluminium underbody guard protecting the ACS from front to rear, while the monocoque has undergone core strengthening designed to tolerate the rigours of the Baja 1000 or Dakar Rally.

Rear clusters are housed behind a wraparound protective grille fashioned in beautiful herringbone design, while up front, 2020-spec GT3 R headlights will lead the charge for the ACS during nighttime competition, having proved themselves at this year's Le Mans 24 Hours. Into your details? The bonnet crest is taken from the long hood 911 era, complete with early 'PORSCHE' lettering and orange rather than red stripes.

If the body is considered functional art, the chassis of the ACS is a pure engineering masterpiece.

It features specialized long-travel suspension with five-way adjustable double dampers per corner, and all four corners have also been converted to double wishbone setup. "The sole purpose for that is to get brilliant geometry over such a wide suspension sweep. It's the only system you can do that with: it maintains the same camber and toe, pretty much, throughout the whole suspension stroke," Tuthill says. The car's wheelbase has also been extended by 98mm to 2,370mm, Tuthill providing further clarification: "The rear wheel is fundamentally in the same position as standard, it's the front where we've done the extension." Front track width on the ACS has also been widened to 1,600mm, up from 1,380mm as standard, with forged alloy wheels – eight by 16-inch all round – wrapped in class-leading BF Goodrich 'Baja' All-Terrain tyres.

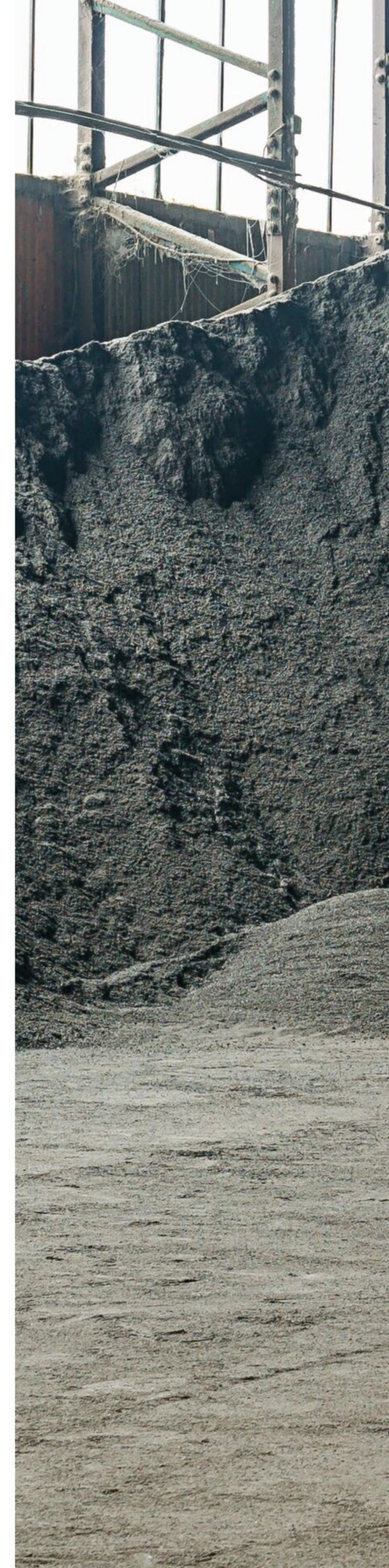
The result, in person, is every bit as remarkable as the spec on paper suggests. Simply, if you were to concoct in your head what your dream Porsche 911 for the purpose of competition rallying would look like, Singer's interpretation may well be it – or quite possibly wildly beyond. But Tuthill is keen to stress the ACS has been designed for function and not fantasy: "It's not something that's been dreamt up, this was engineered and then proven at MIRA's facility (the Motor Industry Research Association). All the modifications have been structurally supported with a roll cage that meets current FIA cross country regulations, for example. There is no requirement for us to do that, either from the client or to go competing in the US, say for a Baja-type event. We have gone beyond what is required.

"The extensive chassis modifications allow two spare wheels, and can accommodate – in one area – in excess of 150 litres of fuel, and we've safeguarded ➔

ABOVE The second ACS car, in red, has been tweaked for high-speed, high-grip tarmac competition events

RIGHT Charge coolers are housed within the flat six's intake plenum

FAR RIGHT Interior tech is purposeful for motorsport, including state-of-the-art GPS and hydration systems







“It isn’t something that looks
extraordinary and that’s it.
It’s built to do a job”



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more than 200 litres of fuel carrying capacity should we want it. It isn't something that looks extraordinary and that's it. It's built to do a job."

The nature of the ACS's heavily revised body means the flat six's outer edges are visible beyond the knobbly contours of those All-Terrain tyres and, despite the increased ride height, is notable for being in what looks like a fairly stock position. Tuthill again offers some context: "The 911's engine as standard is almost completely above the floor line in all applications. You can't therefore just lift the engine up because if you lift that up, you've got to lift the gearbox up, then the propshaft, then the front diff. Likewise you could drop it down significantly, but then it's exposed to everything below the floor, so you wouldn't do that either. The result is we've moved the engine down by 40mm, no more, and slightly further forward by 8mm over stock."

The block itself is the original 3.6-litre air-cooled flat six that came with the car, aided by fly-by-wire throttle bodies and what Tuthill describes as 'two whacking great turbos' which are competition-derived in rally specification with ceramic bearings, allowing them to spool up incredibly quickly. "They are specifically selected and tuned to this engine, and for this application. If you're wanting as little lag as possible, then you're pretty close to the mark here," Tuthill says. Ingenuity has seen individual-bank charge coolers for the turbos housed within that intake plenum on top of the engine, which themselves are cooled by an oil-water radiator mounted to the front clamshell.

The presence of those turbochargers is a first for Singer, which has otherwise garnered a reputation for tuning highly emotive yet naturally aspirated engines. So why the step change? "Turbos are under

consideration in our future," Maz reveals to us. The All-terrain Competition Study has a quoted horsepower of around 450hp (and 570Nm torque), but more is possible thanks to the turbos' tuneability.

Regardless of those turbochargers, the engine for the ACS is distinct from those in Singer's DLS and Classic restorations. Surprisingly though, given his track record, it has not derived from Tuthill's. "It was a carefully considered effort from here in California that we boxed up and sent to Richard, which then received a multitude of changes for application in the car as it, too, was developed," Maz says.

The 964's flat six is mated to a bespoke, five-speed sequential dog 'box controlled via a mechanical sequential gearstick, or paddles, which are attached to the steering column and allow for flat up-or-down shifts. "It is awesome," Tuthill enthuses. "Gearboxes change the feel of the car like no other part of a car can do, and you can't put this project together and not do something with the gearbox." The transmission is also package protected for six speeds if required (and subject to engine specification) but, as Tuthill points out, there's so much torque thanks to those twin turbochargers it isn't always necessary.

Power is permanently fed to all four wheels via mechanical front, centre and rear limited slip differentials similar in spec to a current World Rally Car, and they are all tunable: "Again we have package protected for a hydraulic centre diff so you can start playing with diff pressures and how the car behaves in different scenarios," Tuthill adds.

Inside the ACS is another fine demonstration of Singer's philosophy of modern engineering and material science combined with uncompromising execution. There are two full-sized, spare race wheels and tyres (one under the front clamshell, the other ↻



TOP Headlights on the ACS are from FIA WEC-spec GT3 R

ABOVE LEFT Look closely and you'll see all 'ACS' text is half raised and half carved into the bodywork

LEFT Colourway underneath the front clamshell pays homage to 1980s Rothmans Porsche liveries





ABOVE Removable rear screen allows quick access to sixth wheel and all-terrain tyre

ABOVE RIGHT Wheel-mounted paddles allow for flat shifting up and down the gearbox, while hydraulic handbrake sits next to sequential manual shifter

**Singer Group:
the evolution
of excellence**

Company founded, first Porsche 911 restoration presented at Monterey Car Week	2009
First AWD and Targa restorations completed	2014
Singer Reimagined watch company launched in Geneva, Switzerland	2017
Dynamics & Lightweighting Study presented at Goodwood Festival of Speed and Monterey Car Week	2018
TÜV certification completed for European markets	2019
Expansion of Global Partner Network	2020
The first Dynamics & Lightweighting Study restorations will be delivered to owners	2021

behind a pair of bespoke competition seats which come with FIA certification). There's a rehydration system for the driver and navigator, state-of-the-art GPS race navigation, and a towering hydraulic handbrake lever in front of a DLS-spec transmission tunnel with exposed shift cables. The bespoke wheel from MOMO also looks to be taken from the DLS project, albeit with those paddle shifts.

Ever a critical factor in cars built for the purpose of motorsport, weight – or lack of it – has been keenly considered for Singer's ACS. 1,350kg is its target mass, Tuthill admitting the car in front of us is a tickle over that due to a small number of prototype parts being used, but that the target is entirely plausible. That figure is, coincidentally, the same as a standard 964 Carrera 2, and therefore an outstanding achievement considering the ACS is carrying six heavy tyres with wheels, an extensive roll cage, plus the associated turbo componentry and underbody guards.

The process for such a groundbreaking and ultimately peerless project has been extensive, even by Singer's very high standards, with three versions of ACS attempted to get to this point. "It's similar to what we experienced with DLS: in the beginning we didn't really know what could be done. The project iterated over time, as ours do, into what you see now," Maz says.

As you can see from our pictures, the All-terrain Competition Study has been kicked off with not one but two cars, the vehicle marked '01 Competition' representing the All-terrain Competition Study in its most extreme iteration. '02' is configured for high-speed, high-grip tarmac events and disciplines, but both cars highlight the broad repertoire of the ACS, including possibilities for recreational use, as Tuthill explains: "The suspension, brakes, engine

and transmission capability have all been built with competition in mind. The current form of the car is geared that way, but we haven't forgotten that there will be other uses for it.

"For example, I've started a gearbox project already that isn't a competition gearbox, because as much as everybody we talk to would love to have one, and they are the most extraordinary thing to drive, practically they're quite noisy and very mechanical. That's an obvious variant."

So does Singer expect the majority of its ACS commissions to be purebred competition or road cars? Maz is quick to answer: "To be honest, we don't ever build anything because we think we can sell it. It sounds obnoxious, but it's not really about 'we think we can sell this many units of that spec'. With ACS, we just appreciate that, practically speaking, if somebody wants to just have a blast around their property, they may not want to clamber over difficult roll cages, or they might want more storage, and so the project is malleable."

A price for all this is something Singer is a little more coy about, Maz admitting the topic is still mid-discussion, though it'll largely be dependent on the specification chosen by the owner. Support packages for racing and maintenance will also be available, should you wish.

All Porsche 911s will be modified to ACS specification here in the UK at Tuthill's premises in Oxfordshire, and the book is now open for orders. We expect Tuthill to be busy: not only is this Singer Vehicle Design's first race-oriented restoration of a Porsche 964, the All-terrain Competition Study is a positively outrageous commission which completely redefines the genre for all-terrain 911s. We can't wait to find out what it's like to drive, and soon. **911**

A man is driving a Porsche at night. The interior is illuminated by the dashboard and the infotainment screen. The man is wearing a blue shirt and jeans. The infotainment screen displays various app icons including Phone, Music, Maps, Messages, Podcasts, Audiobooks, and Calendar. The background shows city lights and a red traffic light.

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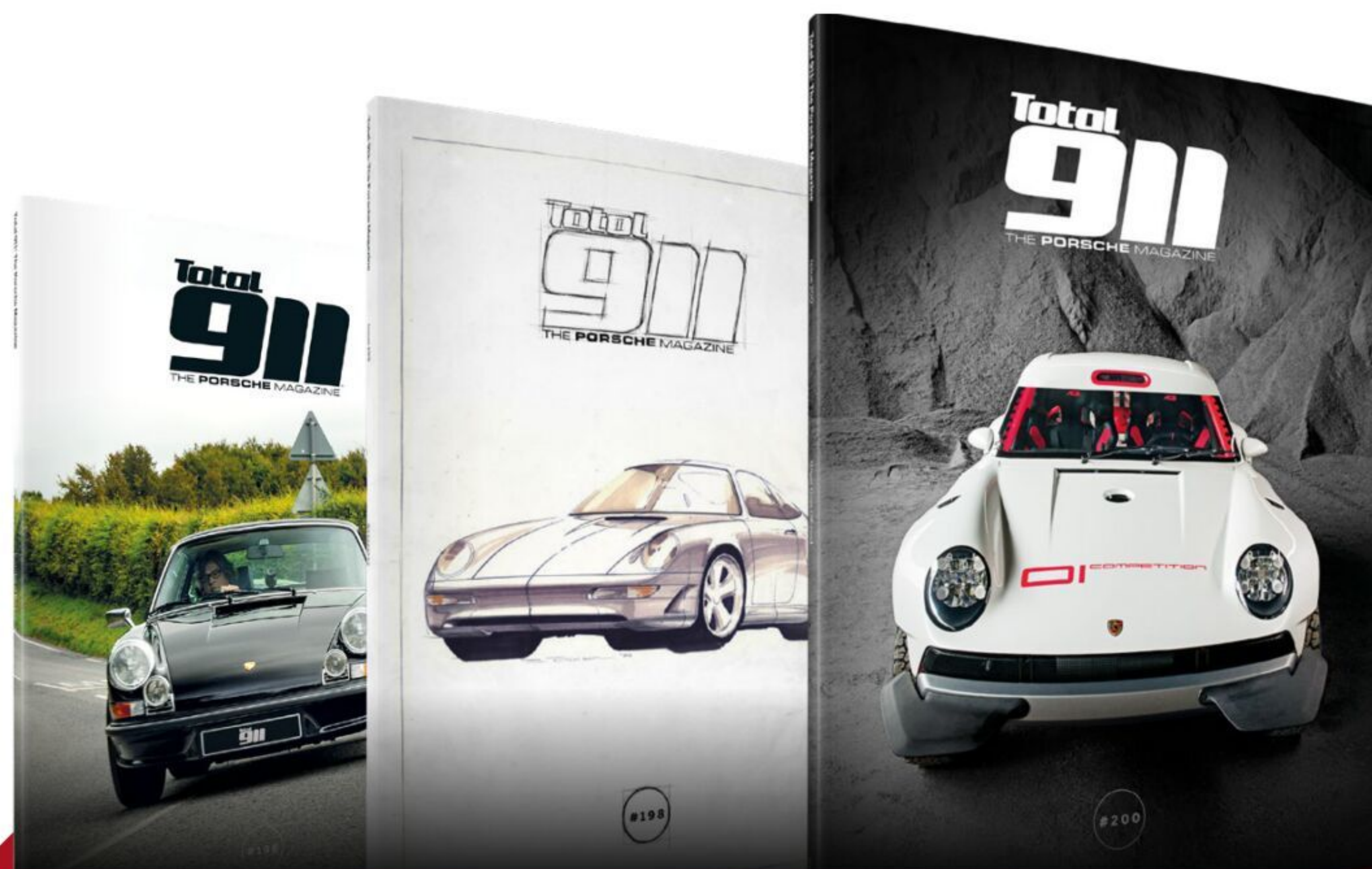




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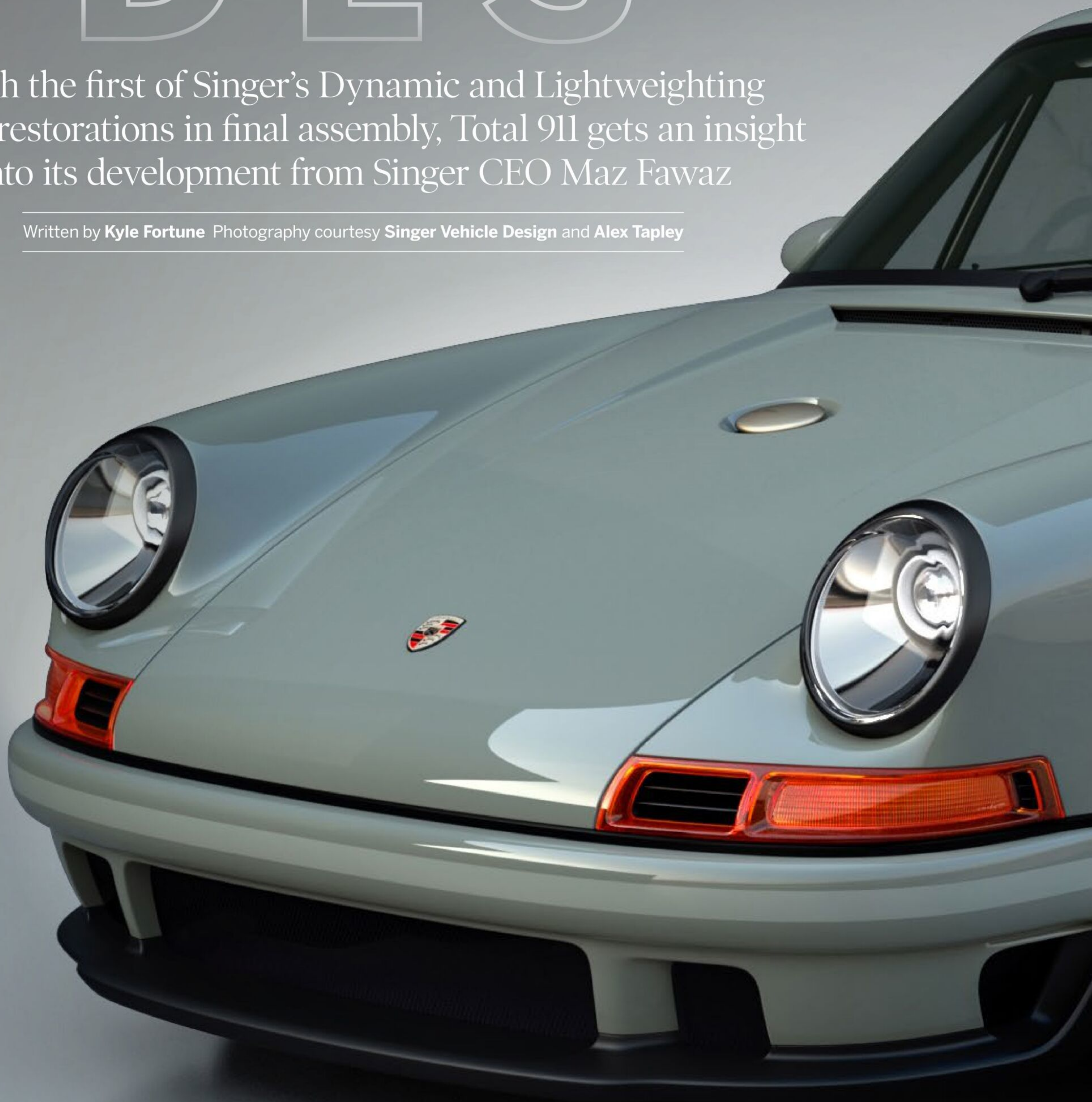
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T H E M A K I N G O F

DLS

With the first of Singer's Dynamic and Lightweighting Study restorations in final assembly, Total 911 gets an insight into its development from Singer CEO Maz Fawaz

Written by **Kyle Fortune** Photography courtesy **Singer Vehicle Design** and **Alex Tapley**





“The whole of Singer is a surprise for Rob and I, as we didn’t really expect for it to ever be a business,” says Mazen ‘Maz’ Fawaz, CEO, Singer Vehicle Design. It’s more than a business, though – Singer really is something of a phenomenon.

Maz and Singer founder, Rob Dickinson, have been friends from the early days, when Dickinson assembled his first cars. “Rob and I were sort of born Porsche lunatics. It’s from birth or something,” says Maz.

The pair clearly work incredibly well together, Maz admitting: “Rob and I share a similar kind of OCD. Maybe in different areas of the car. But it’s a sort of lack of compromise. Rob’s not a guy to say, ‘Yeah, it’s good enough. Let’s send it out.’ He just doesn’t. And I’m very similar on the mechanical side of the car, how the car drives and how it sounds, who’s working on it. It’s very, very difficult to take shortcuts.” It was Maz who steered Dickinson down the 964 route for the classic cars and who was instrumental in their development, as a friend. He eventually joined the company in 2017, becoming CEO in January 2020.

That OCD manifests in Maz’s obsession with weight, it being apparent on Singer’s ‘classic’ reimagined vehicles already, but curiosity got the better of him. “I looked at, at the time, a kit of 25-year-old parts on the ground. And I went, ‘well if you look at all the primary components, some of them trailing arms, uprights, this is maybe where there’s some bulk. I just started to look at all the heavy components and started thinking if they could be approached with a different budget, and a different era,’” that being the gestation of the Dynamics and Lightweighting Study undertaken by Singer for their clients. Maz, wielding a clipboard and a shipping scale, weighed every component.

He was surprised: certainly some elements were heavy, but not overly so. “Nothing was heavy – almost nothing. Even the gearbox was surprisingly light. But then when you put it all on the list, and you said, all right, we can take 10% out of a lot of these, or 15%, that’s a lot of weight. It all of a sudden becomes a huge win,” he says. The end result came at 2018’s Goodwood Festival of Speed and a prestigious spot on the lawn outside Goodwood House. The DLS, in the best tradition of show cars, had been finished merely hours before it was prominently positioned on its plinth, with a second development prototype running up the hill. While the running car looked complete, Maz admits that it was the first kit of test components: “What you saw was kind of the first running body, that was obviously quite compromised. From then it was going to head into testing.”

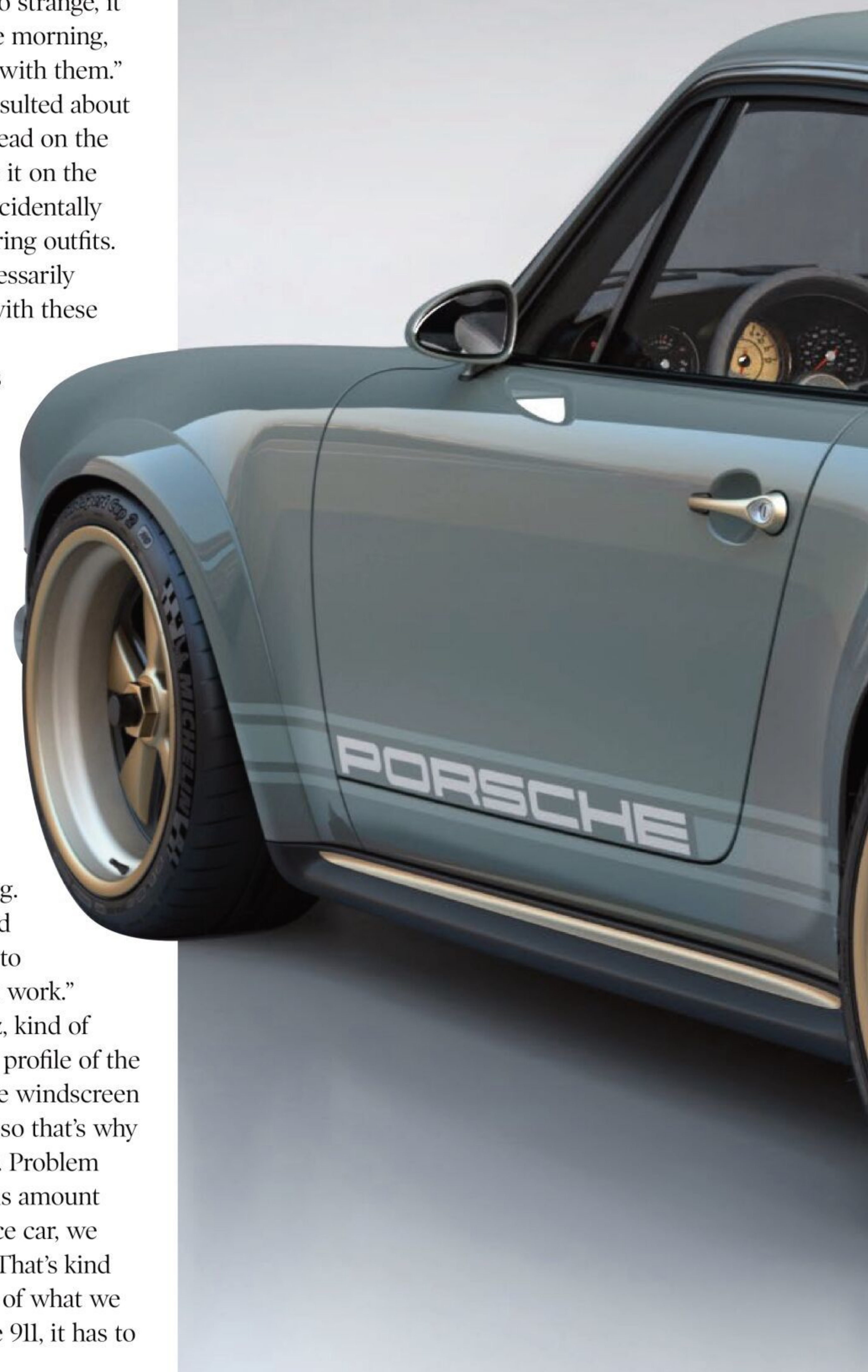
To get the DLS to that point is no insignificant feat, Singer tapping into some serious expertise to achieve that. Friendships, inevitably, played their role: Maz’s friendship with journalist and racer Chris Harris saw him and Harris jump in a car and drive from a race meeting at the Nürburgring to Stuttgart. Maz comments: “We went there for a meeting, but before the meeting we had breakfast. And we’re just sitting in a standard German service hotel, just a

couple of dudes that are having breakfast with Hans Mezger and Norbert Singer. It was just so strange, it was so surreal and odd to wake up in the morning, jet-lagged, and be there eating breakfast with them.”

Mezger and Norbert Singer were consulted about Singer’s desire to use both a four-valve head on the flat six as well as a ducktail sitting above it on the DLS. “We’ve had this fortune of being accidentally exposed to some pretty serious engineering outfits. I say accidentally, because we didn’t necessarily seek them out, we just became friends with these people. And it was kind of theoretical,” admits Maz. That’s true of how Williams Advanced Engineering got involved, with the British F1 team’s engineering department – and Jonathan Williams – introduced to Maz via another good friend, racer, and Singer’s test and development driver, Marino Franchitti. The Williams team were also involved in that German meeting.

“We told him [Norbert Singer] that we wanted to use the ducktail and he told us basically, ‘it doesn’t do anything,’” says Maz. That was borne out in the F1 wind tunnel. “Sure enough, we saw in the F1 tunnel that it’s ineffective. It actually doesn’t do anything. So we redesigned the back of the car, and the roof of the car has a depression in it to bring air down to the ducktail to make it work.”

That element of the DLS, admits Maz, kind of defines the entire car: “If you look at the profile of the 911, you can imagine the air goes over the windscreen and just goes straight back and through, so that’s why wings are always very high on a race car. Problem solved. Do that and you get a tremendous amount of downforce, but we’re not making a race car, we had to bend the car to suit the ducktail. That’s kind of the point. That’s kind of the synthesis of what we did with the whole thing: it has to be the 911, it has to operate like a proper 911 road car.” ➔



BELOW DLS test cars were put through their paces by Chris Harris, Richard Tuthill, Marino Franchitti and Maz Fawaz



“It’s not change to make it a different thing, so it’s no longer a 911, it’s just looking for ways to optimize”



BELOW LEFT A prototype DLS takes on the Goodwood hillclimb in summer 2018



Model Porsche 964
**Reimagined by
Singer Vehicle
Design – DLS**

Year 1990

Engine

Capacity 4,000cc flat six featuring titanium valves (4 per cylinder), dual overhead cams, extensive use of magnesium and lightweight materials to reduce mass, lightweight throttle bodies with F1-inspired upper and lower injectors to enhance performance and drivability, unique and optimised oiling system to improve lubrication and cooling, Inconel and titanium exhaust system. Engine developed in partnership with Williams Advanced Engineering with special consultancy from Hans Mezger

Maximum power 500hp @ 9,000rpm

Maximum torque 435Nm

Transmission 6-speed manual developed with Hewland, magnesium casings with hollow shafts for maximum reduction of rotating mass; Reduced length to reposition engine forward for optimised weight distribution

Suspension

Front Lightweight multi-link, double wishbone; bespoke mass-optimised dampers with remote adjustment

Rear Lightweight aluminium rear trailing arms with integral brake cooling; bespoke mass-optimised dampers with remote adjustment

Wheels & tyres

Lightweight 18-inch forged magnesium, monobloc, centre-lock wheels developed by BBS Motorsport; high strength aluminium and titanium centre-lock mechanism developed by Williams Advanced Engineering; bespoke-sized Michelin Pilot Sport Cup 2s, 245/35/18 front and 295/30/18 rear

Mass

Weight c.1,000kg (dependent on specification)

Performance

0-62mph Not tested

Top speed Not tested





ABOVE Interior of the QUARTZ commission, one of the first DLS cars to enter final assembly

The goal, then, isn't about a lap time. Singer is completely unconcerned about stopwatches – Maz describes them as meaningless, because someone will always be able to be faster, either with a better driver or a better car. Singer's goal was more to finesse, to improve things, like how it might feel on that lap, about getting the balance right front to rear, how it feels at 40mph or less. "It's not change to make it a different thing, so it's no longer a 911, it's just looking for ways to optimize."

Given Maz is talking about analogue sensations, it's perhaps surprising that so much input has come from F1, where everything is about ultimate performance. "The magic of F1 is their ability to forecast what happens to components under stress, in a very, very advanced way. Other motorsports can do that now of course. But Formula One really, really pushes. It allows you to understand, before you ever make a component, what's going to happen to it. Before you even make the first cylinder, they understood where and when and how it's going to fail, at what temp, under what stress, and of course they were right. Because at the end of the day it worked, and it worked great," he says.

Maz is talking specifically about the four-valve head, an idea Porsche has used on racing engines, but never on an air-cooled road engine. Williams, with consultation from Hans Mezger, would make that engine work for a road car, the DLS featuring a 500hp, 9,000rpm 4.0-litre flat six that has four titanium

valves per cylinder with dual overhead cams. Lightweight materials are used throughout, a unique oiling system aiding both lubrication and of course cooling, the flat six featuring lightweight throttle bodies with F1-inspired upper and lower injectors.

"I can tell you categorically, we could get more outright power out of this motor if we just tweaked a few things on it and just presented it as a race car that didn't have to have a heavier clutch. And the alternator is super heavy, it's massive, because we have electrically powered heat, and electrical power steering," Maz concedes, before adding: "It is actually making more than 500 horsepower at speed, because the air intakes are pressurized and ram air through the motor. That's not at idle, obviously, but about 80 miles per hour."

It wasn't just the engine where Singer tapped into the best engineering resources available to them. When calling suppliers, Maz admits: "We were shocked. We continue to be shocked, by the way – that hasn't faded at all. To even have a meeting with some of these folks, and then get taken seriously about a project. We want to do 75 of these. Not 75,000. You know, Michelin made us a special tyre. They tooled us a special tyre in a size and compound they don't make. We participated in the design of the side wall. For 75 cars!" It was the same when Singer called Brembo: "The CCM-R carbon ceramic disc at the time was only going to come out on the (Bugatti) Chiron. That was the only place in the world, it's a very rare compound. And that's what they offered us for the car, it's what we're using. They designed an all-new caliper for the car too, because we have an 18-inch wheel."

The wheels covering those brakes come from BBS Motorsport: "It's a magnesium monobloc wheel. They used their most advanced technology from the 918 program they're making for the road, and made a wheel in the shape of a centre lock Fuchs. It was like we kinda made up the most extreme version of what we wanted, and they said, 'Sure, no problem,'" admits Maz. He's still blown away at the thought of it, saying: "I think at the end of the day what happened was really we just picked up the phone and called them, as if 'we'll just give it a try and see what they say'. What we got on the other end of the phone was a bunch of car geeks, which we didn't really expect – you expect a bunch of suits and company guys. We were so honoured, you have no idea. We were losing our minds geeking out amongst these guys."

Getting it all to work together has been a joint effort then, and one that Maz admits Marino Franchitti has been instrumental in. "Marino really was a surprise. We met in 2013 I think, give or take. He's a racing driver and we became very good friends, very close friends, almost immediately. It was like meeting someone you've known your whole life."

More than just a friendship, Franchitti's skillset would be invaluable to the DLS development. During the many meetings with Williams, making decisions about development, components, assemblies, trailing arms and everything else, Maz admits, "I asked him to show up and just kind of hang out. But what Marino was offering was really, really clever. And ➔



BELOW Marino Franchitti “has his fingerprints” on the DLS, seen here at the 2018 Goodwood FoS with Singer’s Rob and Maz

also, really importantly, we really see eye to eye on a lot of things.” That’s unusual among racers, Maz admitting he knows many, but says: “Marino has an eye for these things. He’s been exposed to historic cars, he’s very, very sensitive to what a road car does.”

Maz, Harris, Franchitti and Richard Tuthill have done the development work, but it’s Franchitti who’s had the most seat time. We’re talking countless hours, and tens of thousands of miles in it, finessing the driving modes and making sure the Bosch ESP and Traction Control systems react as Singer wants them to, calibrating the suspension, the engine, steering, brakes and gearshift.

One of the biggest shifts, literally, was the move of the engine forward thanks to a shorter gearbox, Maz explains: “There’s a knock-on effect with all of that, understanding what’s going to happen in the rear suspension as a result. There’s a huge impact on the front of the car when you turn it. Governing all of this with Williams and the product designer, and then through testing, Marino was absolutely a part of all of that. When he says it’s done, I’ll get in it, Chris will get in it, Richard will get in it, and everyone loves it. There’s no debate amongst the four of us, but definitely Marino’s fingerprints are on this thing for sure,” agrees Maz.

Despite Maz’s assertions that the DLS remains entirely a 911 at its core, he concedes one major revision around the suspension. Maz admits it’s the only area that they had to change, saying: “That’s the only area where we really said, ‘All right, this just fundamentally doesn’t work, so we have to change it’. That’s the only creative licence we took,” their solution being a multi-link upper wishbone-type front suspension, which isn’t too dissimilar in specification to the 992 GT3’s system. It’s gotten them the result they were looking for, and still remains true to the ideal that’s long been a signature among those modifying or improving 911s, to offer it up in a different combination, or using ideas from a different



era. It is merely a happy coincidence that the 992 GT3’s front suspension legitimises Singer’s approach with the DLS.

The dampers, all round, can be adjusted manually with a small tool, Maz insistent on it. “That effort, I drove them crazy. I wanted to be able to adjust dampers without taking off wheels, because just taking off a normal wheel is a pain, but taking off a centre lock mechanism that needs so much torque is even more so.” It’s not just about adjustment for the sake of it either, Singer suggesting pre-determined settings to make it as easy as possible. “Changing the sway bar setting obviously takes more effort if you want to get into that. But from a suspension setup, obviously ride height and stiffness and so on, there’s massive range in the car. It actually has three times the suspension travel of our classic car. We designed the DLS to have a tremendous amount of travel, so it becomes a comfortable car to drive, it performs better at very low ride height.”

With such a high bar set, it’s difficult to see where Singer will go next, but Maz is unperturbed, saying: “For us, we can just keep going with other 911s, looking at different eras, and then different drive trains, and then different activities, things you do with them. There’s even more stuff on the horizon. I don’t want to speak for Rob, he can tell you himself. But there are a lot of things between Rob and I that don’t need much discussion. They’re just in our

heads, and we’re trying to get them out. They’re very natural for us, we think very much the same way in terms of what finished products should be. So the idea of doing the next thing is in a sense, from a product ingredient definition perspective, very, very, very easy for us. I know exactly what this thing is going to be, but we haven’t even drawn it yet. And so does Rob.”

That’s the future, but for now, Singer is in the process of assembling those 75 customer cars in Brackley, England. The QUARTZ commission here demonstrates Singer’s incredible attention to detail. The carbon fibre body is paint to sample Tweed grey with ghosted light side stripes and contrast lettering, with a bead-blasted Champagne bright trim and contrasting black bead blasted on the window surrounds and headlamp rings. Those BBS Motorsport wheels look sensational in matte white gold with gold tint, with the interior echoing the exterior style and colour choices beautifully.

Maz sums up the DLS perfectly: “As a finished product, what the thing needs to be when it’s done is non-negotiable for us. We don’t do anything because we think we can sell it. Nothing you see on any of our products is there because we think we can sell this many units. It’s only because we want it for ourselves, very, very badly. It’s very self-indulgent: I want that for me. And it’s just this sort of fantastic coincidence that other people seem to also want it, too.” **911**



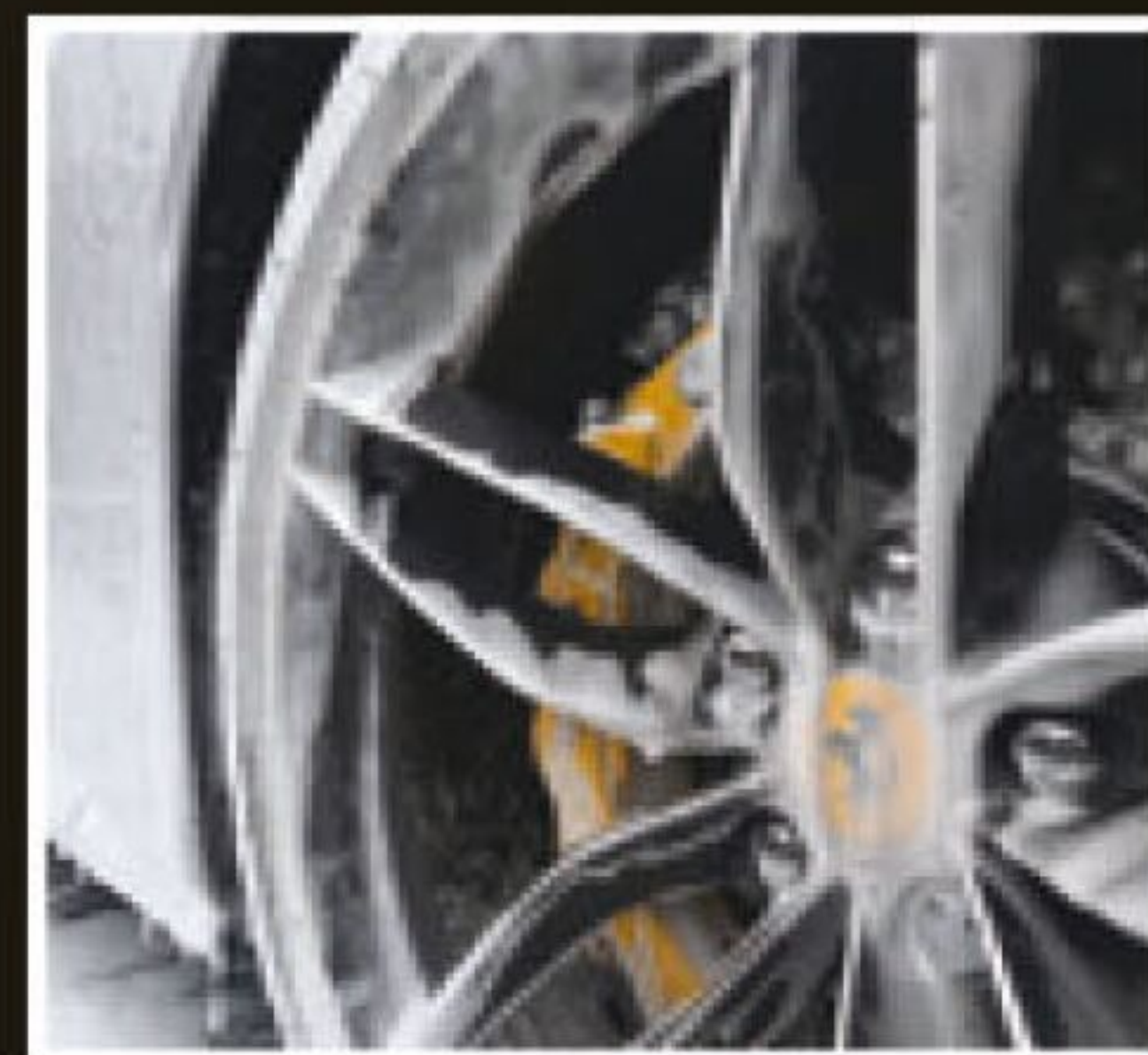
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PANA MERI CANA

THE **CONTROVERSIAL** CONCEPT

Total 911 is given rare access to Ferry Porsche's 80th birthday present, a concept that would signpost his company's design and engineering strategy from 1989 into the new Millennium – and beyond...

Photography by **Damian Blades**



The notion of the concept car really does represent a fascinating yet often downright crazy corner of car culture. Wheeled out for motor shows (if indeed wheels are present), any new styles or technologies are usually expressed through utterly radical designs where manufacturers can gauge public opinion under the premise of it being a one-off. It's not uncommon, however, for a popular concept to make production, albeit with often significant changes in order for it to comply with legislation. Porsche has a rich track record in this regard, with recent, notable examples including the 918, Taycan and 986 Boxster.

However, there is another concept, hidden within the vaults of the Porsche Museum, which can lay a claim to being as successful as the aforementioned trio to realise production, for its impact on the company at large is just as profound. Based on a Porsche 911, its aesthetics offered a wild departure from the Neunelfer's altogether more reserved profile and styling: the Porsche Panamericana drew on past success in competition on rough terrain. And, though it never made production (nor was it ever intended to do so), elements of its design and engineering would continue to permeate throughout Porsche in the 911 lineup – and beyond – in the years prior to and after the new Millennium.

Unveiled in 1989 at the Frankfurt Motor Show, the idea was to design a Carrera Panamericana-compatible vehicle, commissioned 35 years after the famous Mexican race was cancelled for good. With most of this notorious race taking place on rough terrain, the function of this one-of-one vehicle necessitated all-wheel-drive, a technology which Porsche had adopted just one year earlier with its first 911 Carrera 4. It will therefore come as no surprise that it is the 964 Carrera 4's all-wheel-drive system installed on the Panamericana, but what many will not know is the 964's influence on the



Panamericana goes further still. The base car itself is a 964 Carrera 4 Cabriolet, powered by the requisite factory M64 flat six engine, producing the usual 250hp, with power fed to all four wheels via a G64 five-speed gearbox.

Yet, as you can see, the finished article detracts wildly from what we know as typical styling of the 964 generation – or any 911 generation, for that matter. The heavily revised body is made from tough but durable carbon fibre, reducing body weight. This is the first time Porsche used carbon fibre on the body of any of its road-oriented sports cars, the feat not repeated until the Carrera GT of 2004, and the 996 GT3 RS of the same year. ➔



RIGHT Ferry and his sons with the Panamericana concept car





LEFT Headlight design with more raked-back appearance would signpost Porsche's forthcoming 993 philosophy

LEFT Ferry's birthday present featured all-wheel drive and the 964's G64 gearbox

“The design of this unique 911 was purposeful as Porsche's first SUV”





ABOVE Panamericana's body was made from carbon fibre. Cut-away arches allowed for long travel suspension and all terrain tyres

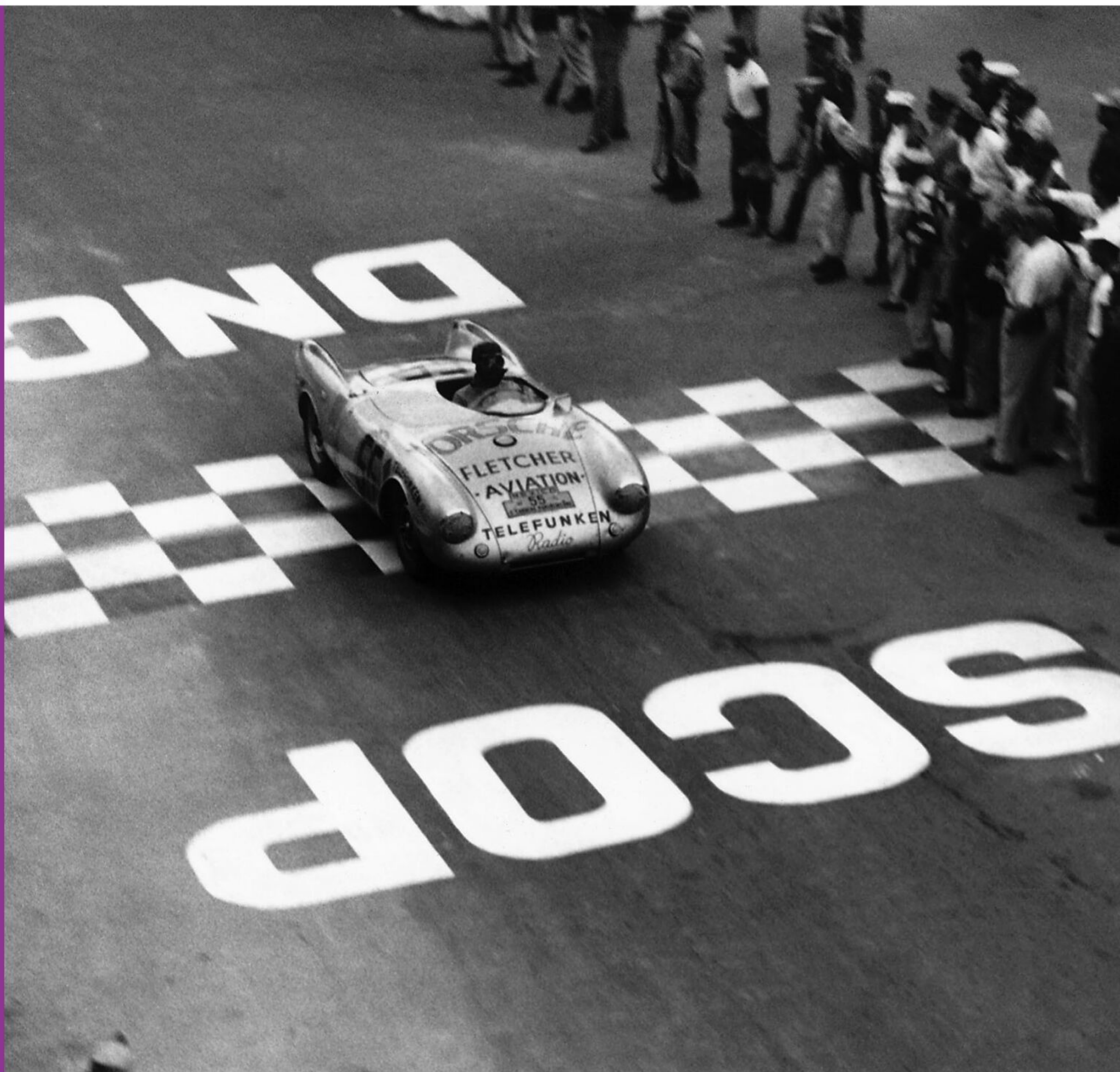
The Carrera Panamericana

The name of Porsche's Tourmaline green metallic concept here is the product of inspiration from a famous race in the 1950s, which delivered considerable success for the company. The Carrera Panamericana was a race through Mexico, administered by the Mexican government to celebrate completion of the Mexican leg of the Pan American highway. Running from Alaska right down to Ushuaia, the planet's southernmost city, this was a network of roads spanning more than 19,000 miles, and was built to connect the Americas and improve intercontinental travel and trade.

The Mexicans celebrated their slice of the achievement with this gruelling race from the top of the country down to the bottom, via 3,000 miles of roads. The race was fraught with danger, largely because it took place on public roads, and rules were few and far between. The first vehicle across the line was deemed the winner, and that was that!

First staged in 1950, the field was comprised of four-seat sedans, before sports cars were allowed to enter from 1951. This is where Porsche got involved, claiming a series of stage wins with its 550 Spyder, before dominating what would be the last race in 1954. Hans Herrmann, who would later taste success with Richard Attwood at Le Mans in 1970, won the small sports car category (Porsche claiming six of the top seven positions) and finished 3rd overall – a huge achievement on the other side of the planet for Stuttgart's then fledgling sports car company.

The race was abandoned after 1954 on safety grounds, but the Carrera Panamericana was considered Porsche's greatest international success in the days prior to the Targa Florio, the feat immortalised in the radical SUV concept car on our pages here.



BELOW Rear side window profile would find its way onto the production 993



The restyled body had had its arches cut away, the reason for this being the Panamericana concept should feasibly be able to accommodate long travel suspension and off-road tyres. This didn't materialise for its Motor Show debut yet regardless, the design of this unique 911 was purposeful as Porsche's first SUV.

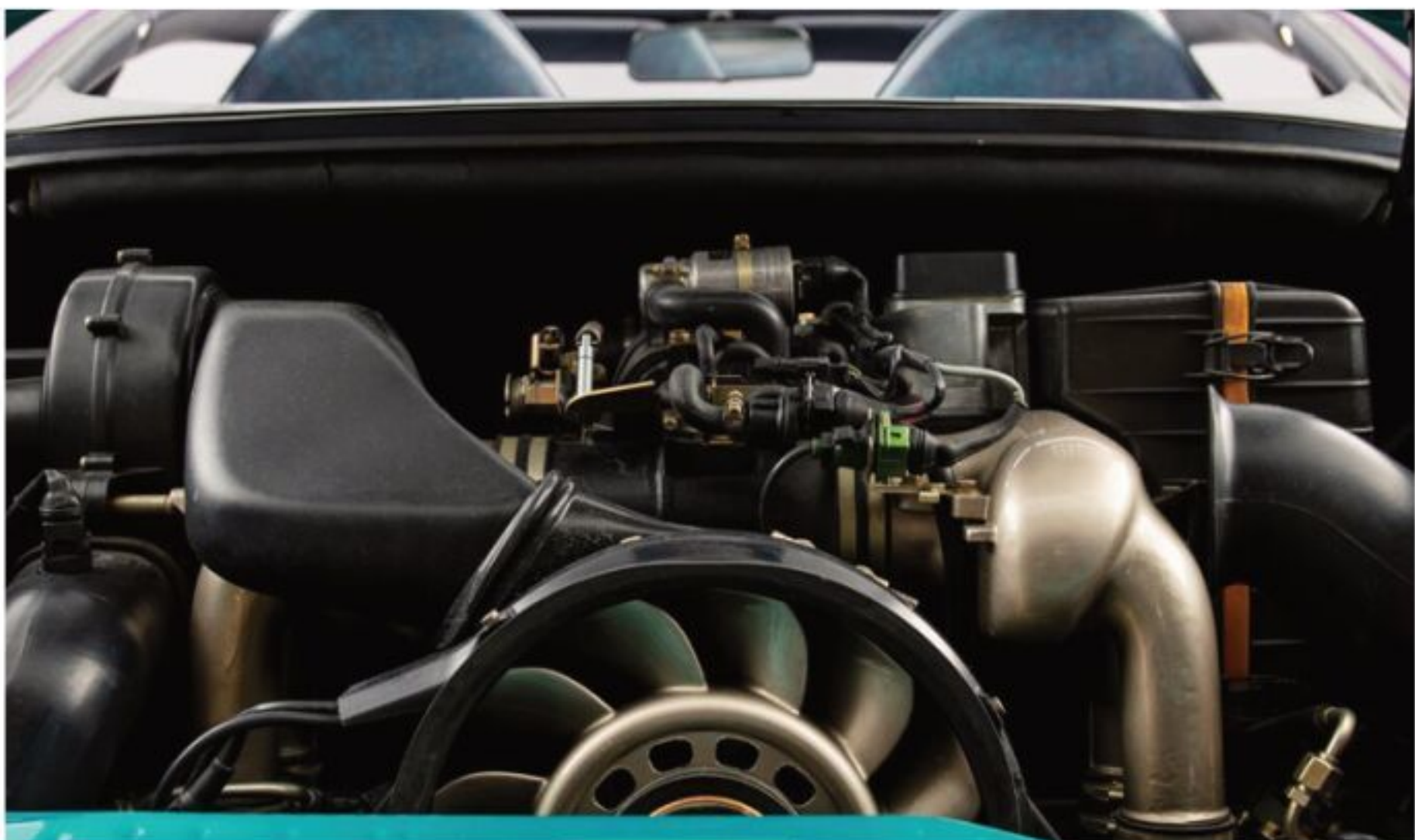
The idea for an SUV roadster study came from Dr Ulrich Bez, head of development at Porsche between October 1988 and September 1991, and who would shortly be credited as the father of the 993. Bez wanted to explore a Roadster SUV concept, which was duly commissioned by Harm Lagaay at Style Porsche, who charged designers in his department to draft their proposals based on Bez's technical concept. The final design was realised by the Briton, Stephen Murkett.

Central to Murkett's SUV Roadster design was its fabric roof, zip-tied on all four sides above the front and rear screens and side windows. The Panamericana's fabric roof covers the area fore of the front two seats, similar to roll-hooped Targas, and removing it reveals a raised, body-coloured panel above each seat. These offer additional headroom for both front seat occupants, their profile forming a 'double bubble' appearance through the fabric roof which would then later find its way onto the 997 Sport Classic.

These panels both lift out, which just leaves the one-piece, plastic rear screen to fold back and lift out entirely for that fully open-air motoring experience. As bizarre to look at as it is to operate, the study provided the inspiration for designing a production roadster in the future Porsche Boxster.

Other design influences from the Panamericana are more obvious. Cup-style wing mirrors would debut on the 964 RS two years later, while the softer front end with raked-back headlights and sloping profile of those rear lights and reflector bar offer clear resonance with the future 993. That sloping profile of the concept's roofline from front to back would also influence the subsequent development of the 993 Targa some six years later, which adopted a sliding glass roof for the first time. ➡

Model	Panamericana concept
Year	1989
Engine	
Capacity	3,600cc
Compression ratio	11.3:1
Maximum power	250bhp @ 6,100rpm
Maximum torque	310Nm @ 4,800rpm
Transmission	5-speed G64 manual
Suspension	
Front	Independent; MacPherson struts; anti-roll bar
Rear	Independent; Trailing arm; anti-roll bar
Wheels & tyres	
Front	8x17-inch custom six-spoke; 225/55/VR17
Rear	10x17-inch custom six-spoke; 295/45/VR17
Performance	
0-62mph	5.8 secs
Top speed	130mph
Weight	1,474kg



Back to those tyres: while they are not of the knobbly variety originally intended to roll beneath those carbon arches on a competitive stage out in Mexico, they are specially developed by Goodyear and feature a unique tread pattern incorporating the Porsche crest outline. While undoubtedly not the most resolute design for effective water dissipation in wet conditions, they serve as an example of creative design when the shackles of legislation are removed.

Inside, the Panamericana is just as striking as outside. A marbled-effect finish covers an interior largely recognisable from the 964 era, though the seats are unique to this concept. Accommodating and comfortable, they offer plenty of space around the shoulders, the contrasting purple harnesses, fixed behind the front seats, offering a further clue as to the intention behind this one-off Porsche wonder.

Designed and built within a matter of months, the Panamericana was actually given to Ferry Porsche on the occasion of his 80th birthday, and still remains in possession of the Porsche family today. Rumour has it Ferry was less than impressed with the concept's final appearance, though the company itself is keen to distance itself from such speculation. "We have heard rumours but we do not comment," a spokesperson on Porscheplatz tells us.

As an off-road concept, perhaps the Panamericana illustrated serious ambitions within Porsche to look

at competition rallying again, in the wake of the demise of Group B? This is again rebuffed by our Porsche spokesperson: "We never considered this, the Panamericana served as an off-road concept and nothing more. In the beginning it was also higher to emphasise the idea of a Carrera Panamericana-compatible vehicle, hence the name. The sales department was against it, because a four-wheel drive for the road was under development and there was concern that this might interfere with the project. The study was then set lower as a roadworthy four-wheel-drive study, but a professional rally entry was not intended."

As we know, there were never any serious plans to put the car into production but regardless, the Panamericana is a concept of huge historical significance. It offered a snapshot of company trajectory in terms of future 911 styling, but also revealed intrigue from those at the top at Porsche to diversify into other markets with its model lineup – exemplified by designer Muckett's eventual promotion to head both the Cayenne and Panamera projects. A project which, really, shaped the future of sports car engineering at Porscheplatz, the Panamericana is as important to company history as those aforementioned 918, Taycan and Boxster studies – a remarkable feat given it never turned a wheel on the public road. **911**



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STÉPHANE ORTELLI

A product of the Porsche Motorsport pyramid, Stéphane Ortelli shares his career highlights with Total 911, culminating in his outright Le Mans victory in 1998

Interview by **Ben Barry**

After more than two decades of LMP prototypes racing at Le Mans, 2021 sees the introduction of the Le Mans hypercar class, reinstating a link from race cars back to highly exotic road cars that's been absent since the GT1 era. And it just so happens the last GT1-specification car to win at Le Mans was the Porsche 911 GT1-98, driven by Allan McNish, Laurent Aïello and Stéphane Ortelli in 1998. **Total 911** recently chatted over that landmark win with Ortelli.

Now 50 years old and still super-competitive, Ortelli was a young hotshot in 1998 who'd won in touring cars for BMW, raced Porsche 911 GT2s at Le Mans in 1995 and '96, and had one previous attempt at outright Le Mans victory, the year before in '97. That year he'd raced the Porsche 911 GT1-Evo for Roock Racing, in large part because of his performance in a one-off entry in Supercup at Imola, the fiercely competitive one-make 911 series that supports the Formula 1 calendar. "I was the only driver other than Mika Häkkinen to win my first ever Supercup race," says Ortelli, "but I did it with a team that had never been in the Supercup or Carrera Cup before. I had only one day testing, and I did it from pole and got the best lap. I think Porsche was shocked in a good way, and on Sunday night [race-team boss] Herbert Ampferer asked me to join the official test day for the GT1."

First raced in 1996, there were three main versions of the 911 GT1. The first two were based on a 993-era 911 steel chassis in left-hand drive, built to exploit rules that race cars must be based on a minimum of 25 production cars in an era that saw the McLaren F1 take overall victory. Porsche flipped the rules on their head, designing

the race car first, much like Ford with the GT more recently, before it offered the 'Strassenversion' of the GT1 for sale.

While the GT1 shared its front end with a 911 and was powered by a turbocharged flat six engine, that engine was mid- rather than rear-mounted in a rear end lifted from the Group C 962 racer. It was a logical development of the 1994 Le Mans-winning Dauer 962 – a race car based on a road-legal version of the 962.

Ortelli felt his French nationality might play against him during his GT1 test, because Porsche already had two French drivers in the works team: Bob Wollek and Yannick Dalmas. Wollek offered some advice ahead of the drive. "He told me there are three keys to racing for the Porsche works team: be fast in terms of lap time, don't take many laps to get to the limit, and don't crash!" laughs Ortelli. "I loved the GT1 from the first time I drove it. It was difficult to drive and wouldn't tolerate mistakes, but I'd never had so much downforce, and I loved the story of Norbert Singer – that this was the last time a car was designed by a man drawing like the 917, 962 and 936, not by a computer giving the direction of the car. In the end I was faster than three German drivers, so I got the drive."

Ortelli finished P2 at the Helsinki 3 Hours ahead of Le Mans, up to that point the car's best result, and for Le Mans he was teamed with Karl Wendlinger and Allan McNish, the team rookie. It didn't go well. "We could've battled for the win, but after only 35 minutes Allan lost the car at Maison Blanche," recalls Ortelli. "He hit the barrier close to the pit entry, and although he could have brought the car back to the pitlane, he jumped out of the car, he was shocked." At least Porsche took the win, if with the WSC-95 run by Joest Racing, a Porsche-powered open-cockpit racer evolved from Jaguar's XJR-14. 🏁





ABOVE Ortelli racing around Monaco, where he lives, during the 2005 Supercup

BELOW Porsche Race Drivers at Training Camp 2004: l-r (standing): Marc Lieb, Lucas Luhr, Sascha Maassen, Jörg Bergmeister, Mike Rockenfeller; (sitting l-r:) Stéphane Ortelli, Patrick Long, Timo Bernhard, Romain Dumas, Emmanuel Collard



Rather than destroying their relationship, Ortelli attributes McNish's shunt to a close friendship that endures to this day – and their win the following year. “Shortly after Le Mans Herbert Ampferer asked me, are you okay to go back in the car with Allan?” recounts Ortelli. “I said he deserves a second chance, we want to win together. I think this is why for me Allan is the best teammate ever – we had four years together, two at Porsche, two at Audi, and in more than 20 races we were always 1st or 2nd, except that first ever race at Le Mans.”

Not only would Ortelli and McNish be reunited for Le Mans 1998 – and this time initially paired with Yannick Dalmas – they'd also be driving for the factory Porsche works team. “It was a dream team, wow!” beams Ortelli. “Roland Kussmaul, the Paris Dakar driver, co-driver to Jürgen Barth at the Monte Carlo rally, was my race engineer

for 1998. Norbert Singer was there and he had been my engineer in the 996 GT2, a really human guy who can cry when you win Le Mans, even though he's done it 16 times!”

With the conceit that GT1 cars were road cars essentially dropped, Porsche evolved its 911 GT1 into the 911 GT1-98 for 1998, with a purpose-built carbon chassis that foretold the LMP1 prototype era, all in right-hand drive, but with the gear lever by the driver's door, as per the 917. Just one road car was produced. “The chassis approach felt similar, but in medium or fast corners it was a different world,” recalls Ortelli. “It was very special in terms of technical choice, but it was still more conservative than competitors – it was a car we could push at 120 per cent and it was going to last.”

The team would certainly need to push, with the Toyota GT-One, Nissan R390, BMW V12 LM and Mercedes CLK-LM also fighting for outright victory. So competitive was the class of '98 that two 911 GT1s fielded by Zakspeed actually failed to pre-qualify the month before. Porsche hedged its bets, with two works GT1-98s (Ortelli, McNish and initially Dalmas in number 26, Jörg Müller, Uwe Alzen and Bob Wollek in number 25), and a pair of open-cockpit LMP1-98s (a development of the WSC-95 that won the previous year).

All the works cars pre-qualified, but plans were thrown in the air when Dalmas was injured at Spa not long before Le Mans. Laurent Aiello was drafted in at short notice, another Frenchman whom McNish and Ortelli had known since their teens. To make sure his teammates were entirely comfortable, Ortelli gave them the daylight running time before the race and didn't get to see the circuit in daylight until Saturday morning because “you are all part of a family,” as he puts it.

Just as things were starting to gel, there was yet another setback: Porsche changed the dog 'box for a synchro unit for the warm-up on Saturday morning. “We used the same subcontractor for the gearbox as Toyota and there was still a little bit of doubt about it, and Porsche

wanted no doubt – the synchro gearbox easily did 40 hours attached to a flat six on the dyno,” remembers Ortelli. “But we were super-slow and shocked after the installation lap. We couldn’t flat shift and the travel of the gear lever was like four times longer. Porsche said you are going to hurt your hand and feel frustrated, but you will have a car you can push.”

The Porsches’ handicap was evident after qualifying, when the Mercedes CLK-LM of Bernd Schneider, Mark Webber and Klaus Ludwig took pole with 3min 35.544sec, with a Toyota GT-One and another CLK-LM in 2nd and 3rd, split by just four tenths in the 3min 36secs brackets. Ortelli’s car was the second of the two GT1-98s in 4th and 5th, with both recording times in the 3min 38secs. Despite such a large margin, the trio remained upbeat. “You have to accept you are racing for Porsche, it’s still a works car; we knew we could win,” explains Ortelli.

The race was fierce from the off, with Toyota’s Martin Brundle locking his brakes as he dived with reigning FIA GT champion Bernd Schneider in the Mercedes before settling into the lead, and the BMW V12 LM leapfrogging the Porsches to quickly claim 3rd.

The frenetic pace came at a cost though, with both mechanical issues and unforced errors. Schneider’s Benz rolled to a stop in less than two hours of racing with oil pump failure, and while the two Toyotas held a one-two after three hours’ racing (the second just a split-second ahead of the sister Porsche GT1-98, itself just seconds ahead of Ortelli’s crew) both would spend time in the pits with gearbox issues, and one would even crash entering the pitlane, if without terminal damage.

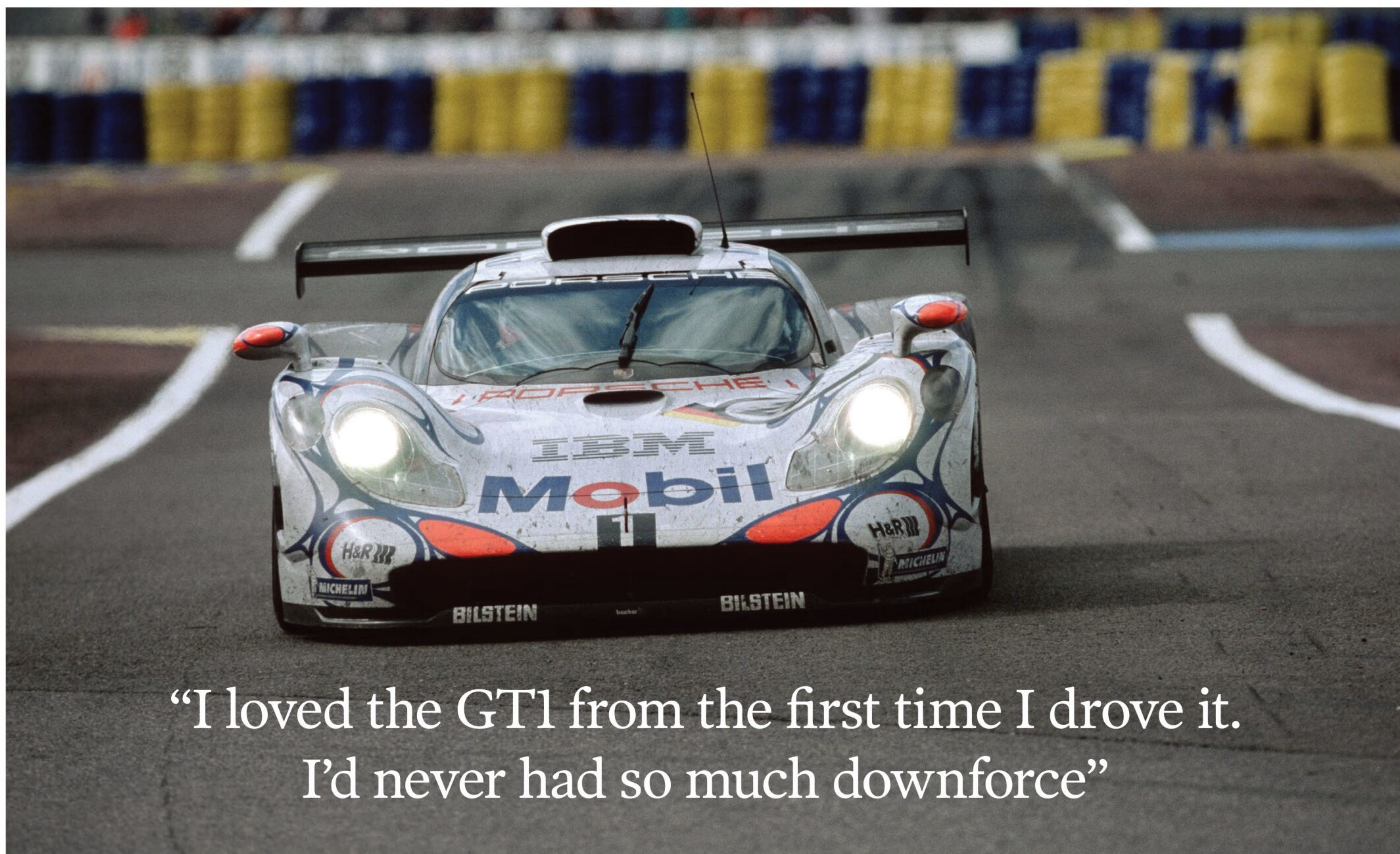
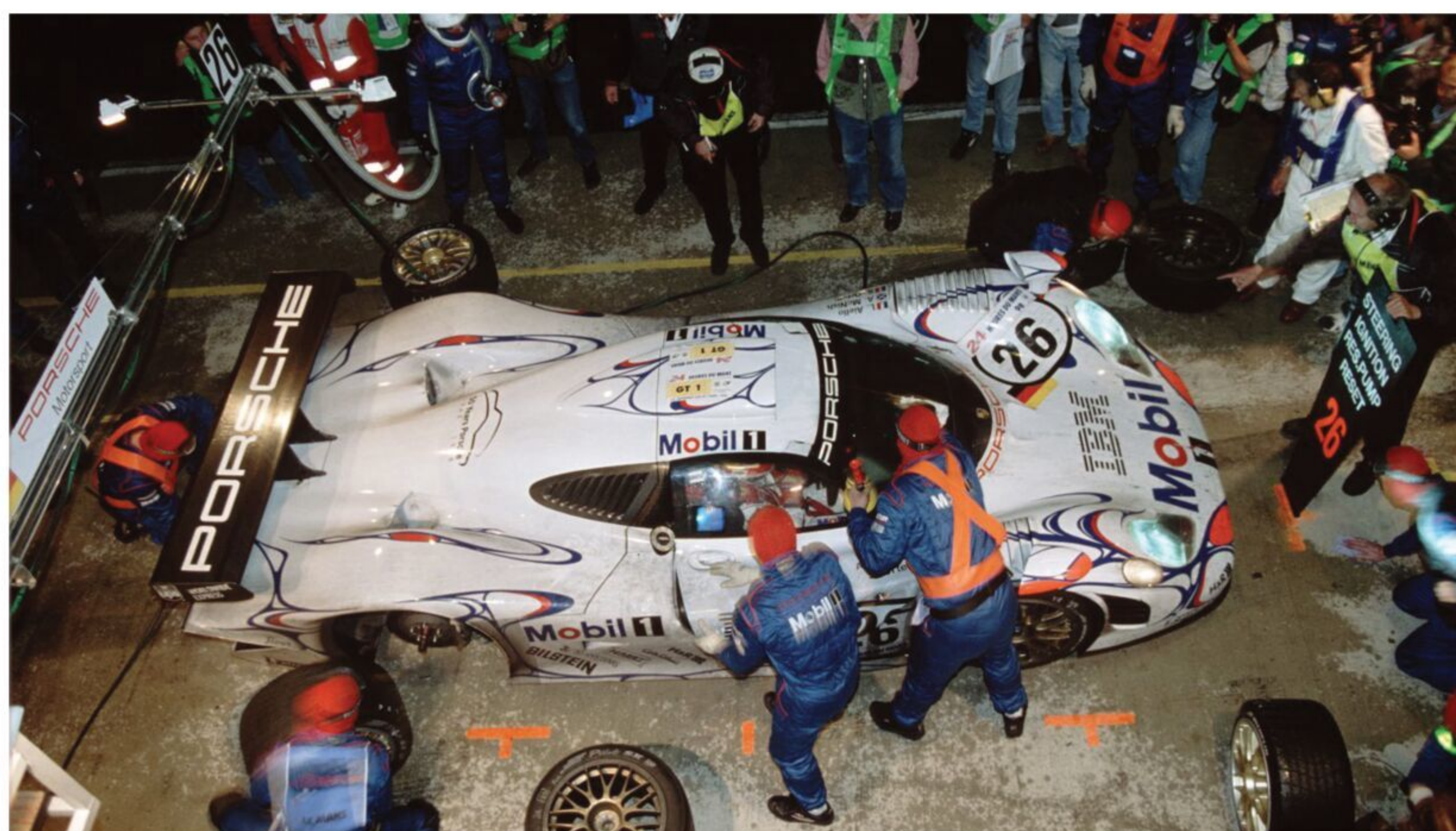
With the Toyotas facing recurrent gearbox issues, Porsche held 1-2 at midnight, with Ortelli, McNish and Aiello 2nd until heavy rain caused havoc. Cars spun off the track, and the lead Porsche was forced to pit after hitting debris in the darkness. “We took risks

staying on slicks in the rain, we didn’t put a foot wrong, only in the morning Laurent had a little half spin out of Tertre Rouge, but we were a lap ahead, leading the race by a good margin,” recalls Ortelli.

Brundle crashed the 28 Toyota heavily in the night, further reducing the pressure on Porsche, but McNish, Ortelli and Aiello’s good work began to unravel when their car developed an oil leak, losing 20 minutes in the pits. They re-joined in 2nd position as a dry line emerged on the circuit, and they pushed hard to catch the lead Toyota of Thierry Boutsen, Ralf Kelleners and Geoff Lees. With the Toyota holding a four-lap margin, Porsche had to apply as much pressure as possible.

“We did quali lap after quali lap, and I was watching the final stint next to Laurent in the pits when a good friend of mine called me ➡

BELOW Ortelli’s no.26 car pits in the night at Le Mans in 1998, before powering on to what was a last overall Porsche victory for 17 years



“I loved the GT1 from the first time I drove it.
I’d never had so much downforce”



RIGHT Romain Dumas, Stéphane Ortelli, Yannick Dalmas, Felix Bräutigam, Hans-Joachim Stuck, Gijs van Lennep, Hans Herrmann, I-r, at the Festival Automobile International, Paris, 2017

from Indianapolis Corner. He said the Toyota was making funny noises on the downshift 20 or 30 minutes before they had a problem. Because of this information we kept pushing them, stressing them,” remembers Ortelli.

With less than two hours remaining it seemed Toyota had the win in the bag, but after already having two new gear sets, finally the pressure from Porsche proved too much, and the 26 Toyota retired with terminal gearbox trouble. And so the slower, more durable Porsche continued to pound out laps in the lead, a position it maintained until the chequered flag, crossing the line at an easy trundle, flanked by the sister car that was actually one lap down.

“Bob Wollek was crying because he wouldn’t have another chance to win Le Mans, but it was the best day of our life – we were very young, I think the youngest Le Mans winners ever with an average age of only 28. We were three kids and two French guys winning Le Mans, and people joke that I invented the selfie with an instant camera on the podium. It was also 50 years of Porsche and Wolfgang Porsche was there on the podium. The whole story is special,” enthuses Ortelli.

It was about to become even more emotional when, scanning the huge crowd, Ortelli and McNish suddenly locked eyes with their parents. “Allan and myself are very short and our parents are the

same. I looked down and I couldn’t believe it – our four parents are standing on the wall because they are too small to see the podium, holding the pitboard. I could see their smile, it made it so special, it was a true celebration to share with the people that we love the most,” he remembers.

The drivers wouldn’t know until the winter that this would be Porsche’s last Le Mans at the top level until the 919, and that they had scored the GT1’s only victory. McNish and Ortelli would go on to have success with Audi (if not another Le Mans win together), while Aiello would drive a Nissan to overall victory in the following year’s British Touring Car Championship. Still racing today, Ortelli remains not only friends with McNish, but neighbours too in Monaco. For him the GT1-98, the friendship, and of course the win make Le Mans 1998 the pinnacle of a highly successful career.

“We are part of Le Mans history, but the win belongs to Porsche, not to you, like Ferrari in F1, you just feel happy and fortunate it happened to you. I won other races with Porsche, I won Spa overall, two world titles with them, but nothing compared with our Le Mans win,” he explains.

History tells us it’s ‘when’ rather than ‘if’ Porsche will win Le Mans again, and we wouldn’t bet against it adding to its record-breaking tally of 19 wins in the hypercar era. **911**

BELOW Stéphane Ortelli and compatriot Emmanuel Collard take N-GT honours competing for Freisinger Motorsport in 2004



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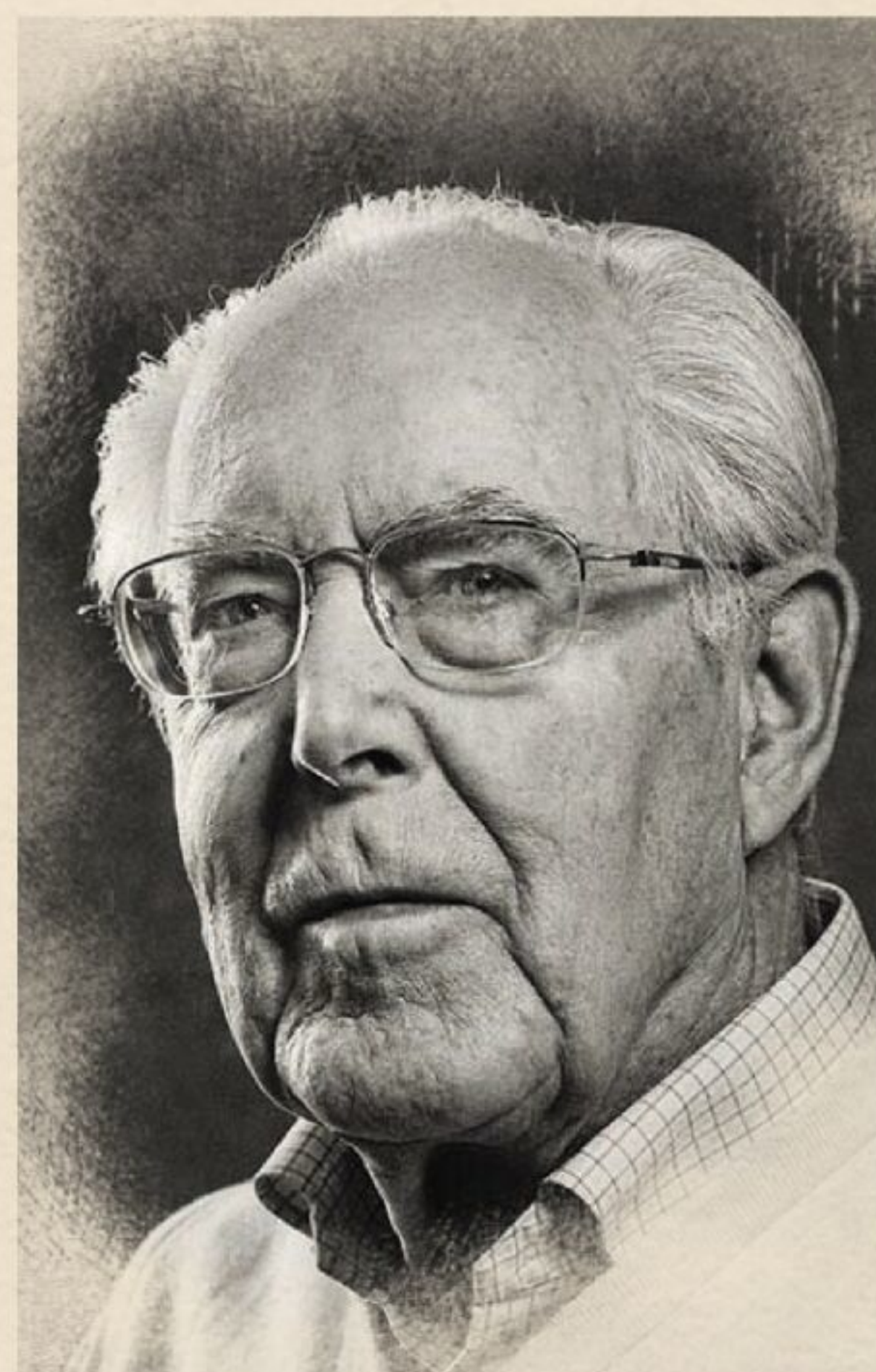
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THE PORSCHE ICON PETER FALK

For 30 years, Peter Falk was a key figure in the advance of Porsche, either in road test development or as motorsport manager. His thinking would underpin the 911 from its early years to water cooling

Written by **Kieron Fennelly**

A feature that sets Porsche apart from other manufacturers is its extraordinarily extensive archive. Neither its Stuttgart neighbour, the mighty Daimler-Benz, nor even Ferrari with its celebrated competition history can boast anything comparable. And as one peruses Porsche's vast photo album, one figure in particular seems to recur remarkably often. Peter Falk. Tall, bespectacled, often wearing a hat, his figure appears constantly in shots of the Porsche pits at Le Mans and elsewhere, either in the time of the 908s and 917s or a decade later during the reign of the 956/62. The same, serious-looking character is also to be found in numerous photos of production car testing as well as meetings of Porsche management and at celebratory occasions. The key to Peter Falk was his versatility: a man schooled in classical Greek and Latin, who had combined a two-year mechanic's apprenticeship at Mercedes with his engineering degree, had both the intellectual curiosity of the researcher and the practical skills of the technician. He could drive too, a motorcycle racer until he obtained his car licence, then a competitive if not top-class rally driver, participating in the Liège-Sofia-Liège and Monte Carlo events as well as winning the German and Geneva rallies. At Porsche his colleagues would have faith in his advice because they knew that if he proposed, for

example, an improvement to a damper, he was quite capable of going down to the test track and proving it himself. And Falk, they said, was unbeatable on Weissach's skid pan.

Peter Falk attributes his atypical mixture of the professorial and the hands-on practitioner to his upbringing. Born in Athens in 1932, he and his mother moved to a village just south of Pforzheim when Peter was six. She encouraged him to read widely and his traditional Gymnasium in Pforzheim honed his tastes not just in the classics, but also in engineering science. He was fascinated by locomotion, modifying his bike with rudimentary front and rear suspension. The Falks' landlord was Alfred Kling, a garage proprietor whose premises were next door and where by the age of 17, Falk was allowed to move cars around. It was Kling, a motorsport enthusiast himself, who helped Falk into rallying and the pair would rally together until about 1960 when Falk decided to leave motorsport "to the men who really knew how."

A couple of years earlier, Falk completed his engineering studies at Stuttgart University where his thesis, the result of several months' research working at NSU, was on the suspension and damping of the (rear-engined) Prinz. He had already decided he did not want to return to Mercedes, preferring a far smaller enterprise where he could contribute in a variety of fields. He received offers from Bosch and Porsche. ➡





ABOVE Falk's *Lastenheft* essentially became the blueprint for Porsche's 993

RIGHT Falk was heavily involved in Porsche's various motorsport programmes, driving in the 1965 Monte Carlo rally and later managing at Le Mans



“Bosch was all about chassis components such as air suspension, which was interesting enough, but Bosch was a supplier while Porsche actually made cars,” Falk notes in his own book.

So began his 33-year career at Porsche. His boss at Zuffenhausen was Helmut Rombold, in charge of road car development. Looking back, Falk feels his first task, to devise the installation of air conditioning in the 356, was more a case of Rombold testing his new recruit rather than looking for a specific solution to a task Porsche had probably long resolved anyway. But Rombold was impressed by his report, and Falk says that encouraged as he was by his boss's praise, he also learned the importance of presenting his findings as they were rather than trying to embellish them. It was a lesson which would stand him in good stead.

Porsche in the early 1960s was an extremely busy place where, as Hans Mezger once said, everyone helped everyone else. The boundaries between the experimental department and road car development were often blurred and Falk found himself working with and later reporting to Helmuth Bott. If on the one hand there was the ‘routine’ task of refining the 356 in its third and final ‘C’ guise, more pressing was development of the 901. With their shared interest in chassis and suspension, both men drove tens of thousands of test miles in the pre- and post-production 911s. Launched in September 1963 and marketed a year later, it transpired that there was still development work to do, and Falk said of the new Porsche: “We believed we had a perfect car with a modern chassis, a major advance over the 356, or so we thought!”

The problem lay with the 901's unpredictable steering: “after more testing, we revised the kinetics of the front suspension so that when turning, the outer wheel would slightly toe-out as the torsion

bar was compressed. Then the car responded more softly on turn-in and straight-line stability was improved, but the 901 was still blown about by cross winds.”

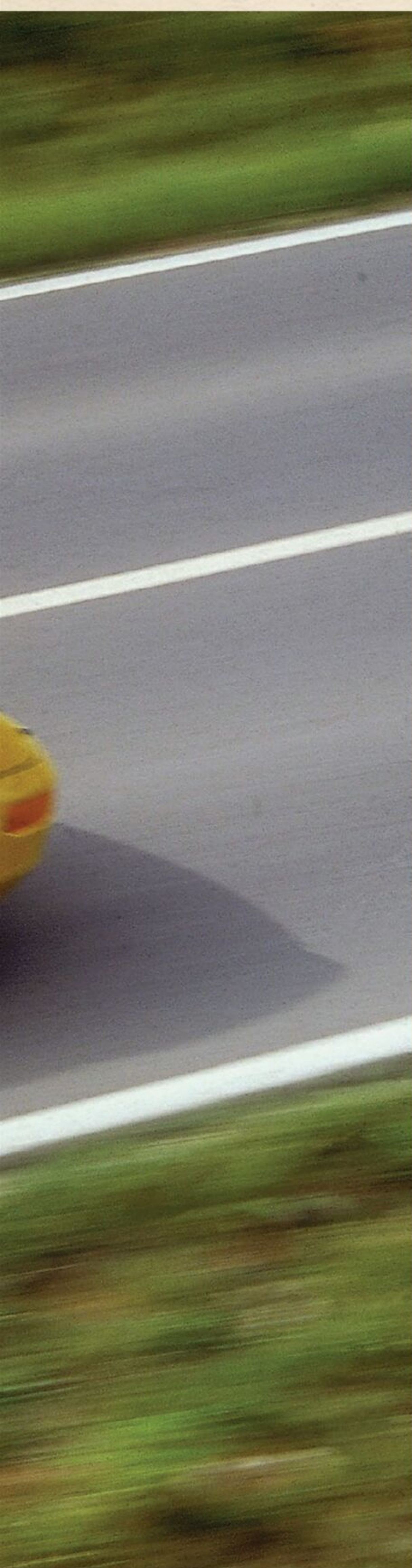
This led to the classic ‘quick fix’ of putting 10kg weights in the front bumper, a bodge which Ferdinand Piëch detested and which was rapidly supplanted by properly engineered solutions as soon as he became technical director. This promotion included responsibility for motorsport and Piëch lost no time in constructing a racing machine with the aim of winning Le Mans and the World

Sportscar Championship. Peter Falk was soon drafted in as team manager. A natural organiser with a forensic eye for detail, Falk now certainly enjoyed the range of responsibility he had aspired to: planning, testing and managing the team now fell to him. He organised Porsche's famous world-record 10,000 miles run at Monza with 911Rs in 1967 (where he walked the notorious banking with a pot of white paint to mark out the potholes) as well as attending all the championship meetings. Sometimes testing could be particularly dispiriting, for example at Monza again in December 1968 while Falk was supervising the testing of a pair

of 908s for the forthcoming Daytona. Both cars crashed in the rain and burned out. He had to return and explain this, and new 908s had to be assembled hastily for trials to continue. Nevertheless Falk, a solid exponent of the Bott ethos of sticking to the job until it was done, was rewarded by appointment to the head of vehicle testing in April 1969.

Given this promotion, Falk might reasonably have delegated more test tasks and on one occasion his concern to confirm measurements first hand all but cost him his life. At Hockenheim in 1969 he was driving a 908/02 to investigate gearbox temperatures at high speed after Siffert had complained of overheating, while the 908 travelling at 170mph hit a deer which stepped out from ➡

“Deeply influential,
the Lastenheft is
a monument to
Peter Falk's direct
involvement in every
911 from 901 to 996”





the unfenced woods. Unbelted, as he was simply driving fast on the straight, Falk was thrown out while the 908 was destroyed as it crashed into barriers, the wreckage scattered over many yards of track. Shaken, but largely unhurt, as a precaution Falk was taken to hospital where Piëch and Bott came to see him and informed him that Gerhard Mitter had just been killed. A long-serving Porsche works driver, Mitter was a very popular figure and Falk was stunned. When Piëch added, “I don’t want you driving race cars anymore,” Falk could hardly object, though he adds, Piëch’s edict did not entirely stop him.

After the immense successes of the 917 in 1970-71, Porsche withdrew from the sportscar championship, preferring to promote the brand by supporting racing teams campaigning the 911 RSR and subsequently its turbo variants. Falk now concentrated once more on development of production cars, a more intense operation now that Porsche was adding two transaxle models; testing on the Heilbronn Autobahn and at VW’s distant Ehra-Lessien proving ground was no longer practical and Porsche negotiated with the Algerian government to use closed desert roads for testing.

“We did a lot of the driving in Algeria – 10,000km tests! Empty roads, not always paved, and no speed limits: I loved driving out there. We had some interesting disguises too: we used an Opel Diplomat body and later an Audi 100 to cloth the 928 engine and running gear,” Falk says in his autobiography.

The 928 was the brainchild of Ernst Fuhrmann, Porsche’s CEO from 1972-80. Falk respected Fuhrmann as a fine engineer with the four-cam Carrera engine, the 2.7 RS and the 930 to his credit, but the 928 was a direction Falk and colleagues would take with a heavy heart. “Even then, the 911 was *the* image of Porsche. We didn’t want to stop development,” he later said.

Fuhrmann gave way to Peter Schutz and in a dramatic change of strategy, 911 development was restarted. “Schutz was a salesman,” opines Falk the engineer. “He just wanted to sell cars, but he made one brilliant decision and that was to return to Le Mans.”

New to the company, Schutz went to Weissach where he was shown the 924 GTs, precursors of the 944 Turbo, being prepared for the company’s low-key Le Mans entry. He asked whether they would win, to be told that a class victory was the best they could hope for. Schutz turned on his heel and announced famously that Porsche would not go to the 24 Hours unless it would win and told the assembled engineers to show him something that could. Peter Falk had an idea: “I suggested we could use the 936 with the 2.7 engine we had developed for the North American CART series.” This elaborate unit had never seen competition after controversial US rule changes rendered it ineligible. The engineers converted the engine from methanol to run on petrol and in a fairytale ending, one of the two 936/81s as they were numbered finished 1st at Le Mans driven by Ickx and Bell.

“This win opened the way for us in Europe in Group C with the 956 and later the 962,” says Falk. Under Schutz, Porsche’s competition programme expanded again, having been scaled back by Fuhrmann. A sign of its new importance, Bott made Peter Falk director of the motorsport department. This suited Falk: “While I was on passenger car duty, I had always been interested in competition developments. We got brand-new premises too,” he smiles. “They sent us over to Flacht at the far end of Weissach. It was the former tank testing area and all we had initially was a few huts. It immediately became known as the Falklands!”

Besides overseeing the development of the Uber 911, the 959, and masterminding Porsche’s entry in the Paris Dakar, which ➔



LEFT Testing ahead of the Paris-Dakar, at Le Mans with Helmuth Bott and Norbert Singer, and an early 911, which Falk helped develop

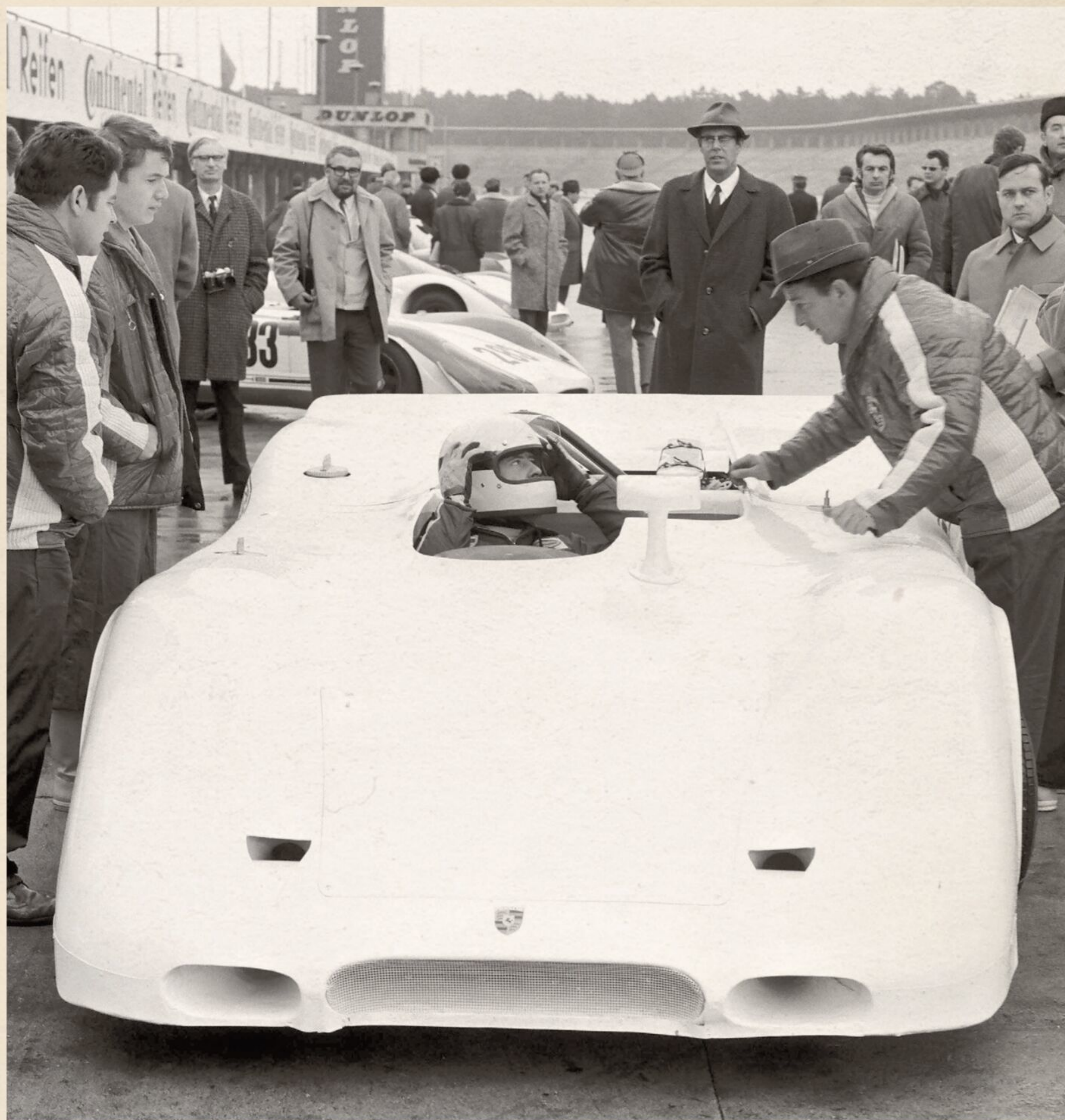
BELOW With Herbert Linge in the 1965 Monte Carlo rally. The pair would win their class





ABOVE Reunited with Herbert Linge at a dinner alongside Walter Röhrl

RIGHT Falk watches on as Brian Redman tests a Porsche 908



brought victories for the first 4x4 911 (953) and the 959, Falk always maintained his close association with the 911. He kept his first company car, a white 1967 Targa distinguished by its red bonnet, until 1975. Its replacement was a G-series Carrera which harboured successively 3.0-litre, SC and then 3.2 flat sixes thanks to Falk's sway with Paul Hensler's engine department. His 911s were also his testbeds and Falk experimented with suspension settings, steering ratios and drilled brake discs, even the digital fuel gauge destined for the 956. In 1973 he had quietly persuaded the gung-ho Fuhrmann, who was all set to launch the 160mph 930 with standard 911 brakes, that these simply were not adequate for an emergency Autobahn stop, but the company already had a practical alternative – the calipers designed for the 917. These would be more expensive, but more appropriate to the Turbo's performance. That Fuhrmann acquiesced was a measure of his respect for this perceptive engineer. Falk's day-long drives to Le Mans every year when he famously followed the old routes nationales were not simply because he was wedded to tradition or that these, as opposed to the autoroute, were the 911's natural habitat. It was also because rough French road surfaces gave a practical workout for new damper settings or suspension configurations. Indeed, Falk only parted with his yellow Carrera 3.0 in 1985 because Bott told him he should not be driving a ten-year-old Porsche.

Much influenced by Ferdinand Piëch's Audi Quattro, Porsche turned to four-wheel drive for the 911 and after sampling a Quattro, a suitably convinced Bott and Falk built an experimental 4x4 911.

Alas the 31:69 torque split, which was so effective in the Dakar rallies, was to prove less so on the road. When at last the 964 C4 was launched in 1988, struts had replaced the archaic torsion bars and ABS and power steering were now standard, but Falk found that the ABS electronics were not sufficiently developed to cope with the combination of high-speed braking and cornering on wet surfaces. The C4 was also prone to very un-911 understeer and there were concerns too about the 964's refinement. Falk saw these and other failings and his observations went into his famous Lastenheft in 1989.

This seminal, 20-page brief for the 993 aimed to correct the wayward trajectory of the 911. With his long experience in both production and competition, Falk's perspective was unmatched and his findings would carry immense authority. He wrote that the new Porsche should be light, tactile and agile, effectively a return to Porsche's original values. In essence his paper examined what was required in every aspect of the 911's behaviour. He sought to restore the purity of the relationship between driver and machine, the factor which differentiated a Porsche from other cars and which many felt was in danger of being lost. Deeply influential, the Lastenheft is a monument to Peter Falk's direct involvement in every 911 from 901 to 996.

As we know, Porsche historically was a small company able to punch far above its weight thanks to the integrity of its engineering. Peter Falk's contribution over 33 years was no small part of this, and his name is rightly associated with the 911's success story. **911**

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CONNECTED DRIVE

Three pedals and a stick are the kind of connection we're after with the 992, and it duly delivers, as Total 911 discovers...

Written by **Kyle Fortune** Photography by **Porsche**

We live in a connected world. Our smartphones, the apps and media within – there's absolutely no escaping it. Cars were once a sanctuary, the only intrusion from outside being the radio, and that could always be switched off. Car makers have embraced our brave new connected world and cars are now an extension of our phones, initially a means of communication via Bluetooth, that connectivity now enabling wireless internet access, music streaming, data, navigation and more. It's little wonder that alongside all these we're seeing ever greater autonomous driving functions to take over while we're endlessly distracted.

Now I'm no Luddite, but for me the best thing about being in a car is the distraction of the drive itself. The ability to navigate seamlessly is superb, and a vast selection of music is no bad thing either (nor, indeed, is a good podcast – try *Road to Redline*) – but even then, they'll be switched off, or at least turned down, if the road gets really interesting. Perhaps I'm a dying breed, somebody who actually likes the distraction brought by driving, the connection for me not being digitally streamed, but physically experienced, and anything that increases that involvement is a good thing. A manual transmission is a good thing, then.

Well, since the 991 went seven-speed, the manual in the 911 hasn't always been a good thing. ➡



BELOW Manual gearbox offers a 45kg weight saving over its PDK equivalent



It's improved, but try as they might, the production engineers just couldn't get that seven-speeder to shift with anything like the delicate weighting and gloriously accurate shift of the six-speeder that came before it. Nor that of the GT department's R, or manual GT3. I'm no PDK denier – it's quicker, of that there's no question, and I love it on a track, it has its place – but on a road, I'd take even a less than perfect manual over it. Some might cry masochism and, hell, they might be right, but nobody's wrong here either.

In the 991.2 Carrera T, Porsche's continual tweaking of its seven-speed 'box reached its peak and here, today, in the 992 Carrera S, it's topped that. I had a clue that it might be good, having had a quick run in a prototype manual 992 a couple of years back, but it's better even than I remember it back then. The stick, with its sizeable circular knob atop it looks right in the centre console. It's high, not quite Carrera GT in its positioning, but an easy reach from the wheel. In comparison to the somewhat apologetic, 'ladyshave'-esque selector in the PDK, it just looks right. It's not just the position of the stick that works, but the clutch pedal that enables it, Porsche recognising that the pedal positioning, and weighting, are just as important to those of us wanting to swap cogs ourselves.

If there's one regret it's that the manual is only offered with the Carrera S – be it 2, 4, Cab, Coupe or Targa – as while picking it doesn't drop the price at all, the cheaper entry point for the entry-level Carrera would look to be an ideal mix, a bog-standard Carrera always an appealing proposition – even if few do so these days. Perhaps the manual Carrera mix will be something saved for an eventual T, we live

in hope. Choosing it over the PDK brings more simplicity to the drivetrain. Gone is Porsche Torque Vectoring Plus with an electronically controlled locking differential, and in comes plain old Porsche Torque Vectoring using controlled braking interventions at the rear wheels in combination with a simpler mechanical rear differential lock.

Ignore the pictures, it's streaming wet on my drive in it, and I've just discovered Wet Mode brings the same rev-matching that you'll get in any mode from Sport upwards. It makes sense that it'll perfectly judge a downshift with a blipped throttle in Wet, saving any potential hiccups of mismatched wheel and engine speeds, and the corresponding, sub-optimal possibilities that might just occur because of them. Normal mode it is then, because clever as an electronically rev-matched downshift might be, it's more appealing when you do it yourself.

The pedals' positioning is perfect for some old-school footwork too, the brake's placing and its firmness giving the ideal platform to roll your foot over to the accelerator, blipping to have the 3.0-litre flare its revs when you simultaneously push the clutch and paw the stick through its gate. You can do so in those other modes too, but there's always the nagging doubt your efforts have been second-guessed by some software.

In your hand there's none of the awkward stiction that sometimes occurred when this gearbox was



first introduced in the 991. The gearstick moves with ease across its planes, the springing perfectly judged and, crucially, consistent across the entire range of available movement. It's that consistency which pays off so markedly with a huge improvement in its accuracy over its previous iterations, which tended to

baulk if skipping gears, or if hurried across its gate. The excellent shift is backed by a clutch pedal that's got enough heft to allow you to mete it out as required, without it feeling like a chore, and that clutch complements perfectly the gearshifts it so willingly enables.

The fact that the shift is easier makes it a more appealing proposition itself, but when combined with the 3.0-litre's effortless low-rev urge you can drive it with something approaching the laziness you might in traffic with a PDK. It's possible to get up to speed, skip any number of gears and slot it in and ride it out on the abundant low-rev, turbocharged torque. Do so and you'll never be overly busy, but likewise, you'll still actually be driving it. And the rewards for doing so, when the roads are clear, winding and undulating are well worth the marginal increase in effort the manual brings in the cut and thrust of traffic.

Here that transmission choice is complemented with a very nicely considered specification Carrera S Coupe. Gentian blue metallic, an Iceland green two-tone leather – which looks way better than it sounds – a 10mm chassis drop with PASM Sports suspension, a Sports exhaust and 14-way electric Sports seats



“The gearstick moves with ease across its planes, the springing perfectly judged and, crucially, consistent across the entire range of available movement”



ABOVE 992 uses the same ZF-supplied manual gearbox as 991, albeit with welcome tweaks

Model 992 Carrera S**Year** 2020**Engine****Capacity** 2,981cc**Compression ratio** 10.2:1**Maximum power** 450hp @ 6,500rpm**Maximum torque** 530Nm @ 2,300-5,000rpm**Transmission** Seven-speed manual, rear-wheel drive**Suspension****Front** McPherson strut type, Porsche-optimized with anti-roll bar**Rear** Lightweight multi-link suspension with wheels independently guided on five suspension arms and an anti-roll bar**Wheels & tyres****Front** 8.5x20-inch with 245/35 ZR 20 tyres**Rear** 11.5x21-inch with 305/30 ZR 21 tyres**Dimensions****Length** 4,519mm**Width** 1,852mm**Weight** 1,480kg**Performance****0-62mph** 4.2 seconds**Top speed** 192mph

are among the sensibly curated options. The seven-speed manual also comes with Sports Chrono as standard, which also brings dynamic engine mounts to the mix. Around our Lambourn roads, so familiar from many a drive from Porsche's Reading HQ, the manual Carrera S is an absolute joy.

New, too, are the visible tyre temps in the instrumentation graphic familiar in displaying the tyre pressures; if they're cold they're blue, going through from blue to white before being entirely white when the tyres are up to 'operating temperature'. That takes time – today, it's cold and wet, in a typically UK wintry manner, a mulch of fallen leaves mixed with plentiful agricultural, vehicle strewn muck making for tricky conditions, even with those tyres up to temp.

There's more engagement from the offing, but here, on driving roads, the 992 Carrera S manual is a revelation. The transmission is utterly transformative, imbuing the somewhat mature 992 platform with a playfulness that's at odds with any other I've driven. The simpler mechanical differential feels more natural, a little bit more wayward, easing to slip more readily, yet not biting when you reach and breach the limits of traction and grip. A PDK would be unquestionably quicker, but what's the point of quicker if all it does is catapult the speeds into the realms of illegality?

The manual's still capable of quite shocking pace, it reaching 62mph in 4.2 seconds and on to a

192mph top speed, but it's the fact that it increases the engagement at more accessible levels, demanding more from you. It's a vicious circle in the best way. The harder you drive it, the more intense the engagement; you're always anticipating what's going on ahead of you, reading the road to pick where gearshifts are required. That's something rarely required if you're tugging a paddle, or worse, leaving the gearbox to its own devices.

The seven-speed 'box and three pedals influence every element of the drive. You consider how you're braking to best allow rev-match by heel-and-toe footwork, and you need to be more measured with your steering, as a lot of the time you'll have a hand off the wheel. It's so much more vivid, a reminder that while it's old tech it's like fine dining in comparison to fast food: both deliver their delights, but the short-lived high of one is utterly eclipsed by the more immersive experience of the other.

It's a wondrously analogue experience in a car that could be accused of being the most digital 911 ever. The Sports chassis helps because, as ever, it ups the dynamism, it riding with composure but bringing more detailed control, managing the 992's mass that bit better. The additional precision it brings gives the impression of shrinking the 992's dimensions due to its greater accuracy and the improved turn-in response. Combine that with the transformative, engaging, exciting manual transmission and it's a hugely compelling mix. Yet for all of that it's not

a gearbox that's so busy and demanding that you couldn't live with it daily, more so given the lofty high it delivers when you want it to.

With the manual gearbox this Carrera S is the sweetest driving 992 we've been in the driver's seat of yet. In our connected world this, the simplest 911, is the most connected 911, in the traditional sense – it's the most joyous form of escapism you could possibly ask for. These days that's a rare treat, so it's a genuine shame more won't experience it, because it really is the best 992 to date. **911**

Total 911 verdict

A pedal and a stick elevates the driving engagement in the 992 to new highs for those among us who crave such things. It also categorically underlines that Porsche remains at its core a company that understands the joy of puristic, old-school driving.

LIKES

- Control weighting, precision, engagement, simplicity, ease... and utter joy and escapism of driving it.

DISLIKES

- The fact that only a handful will be sold
- Automatic rev-matching can't be switched off in Sport or Sport+

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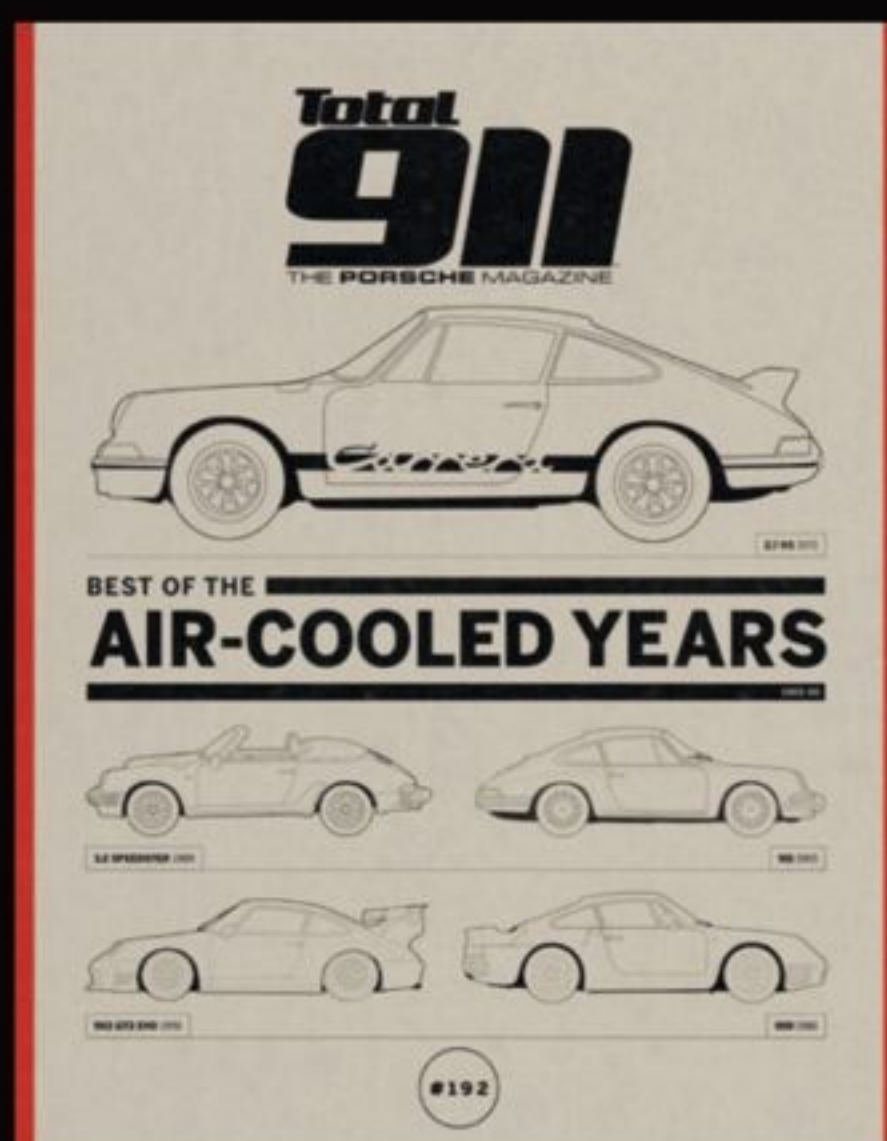
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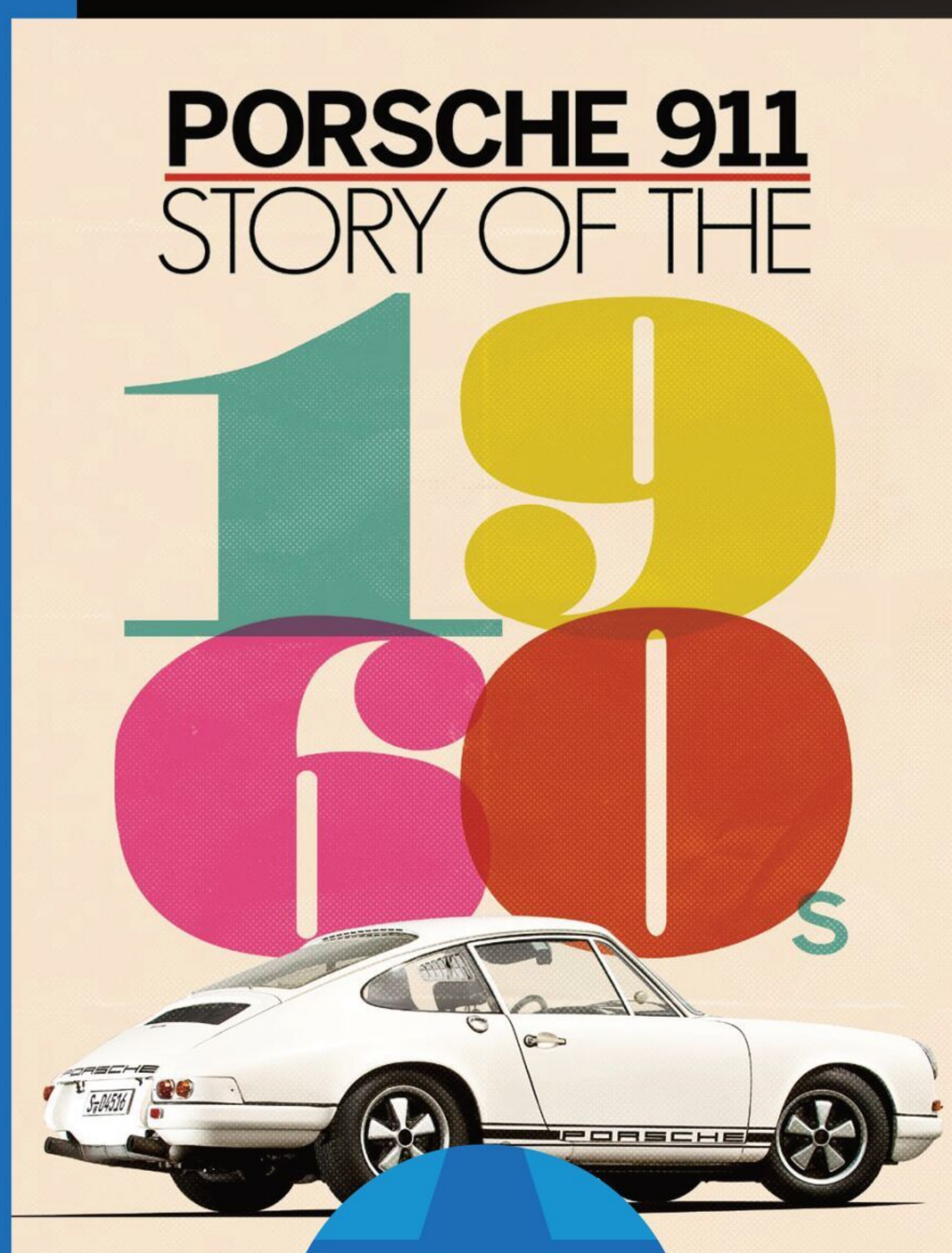
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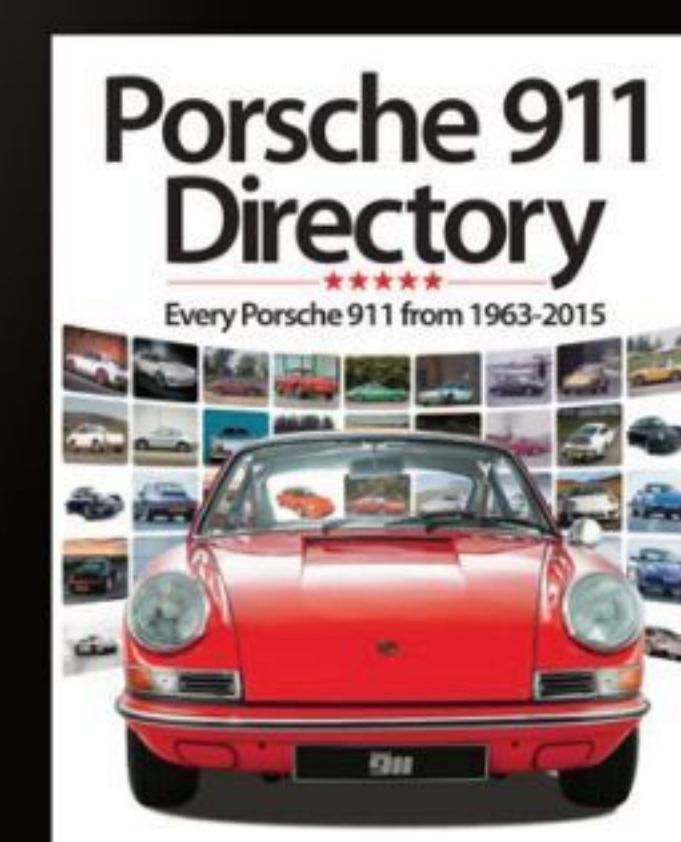
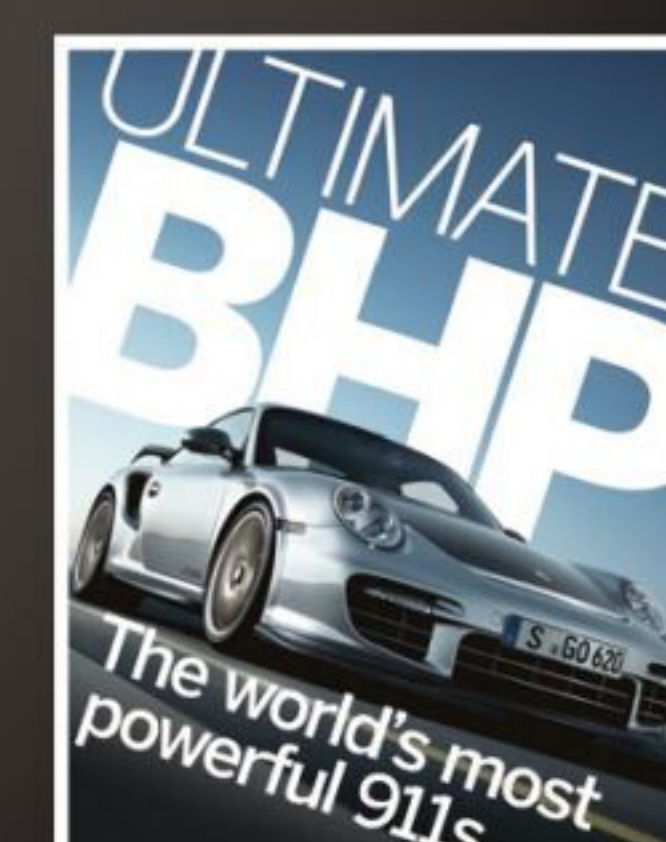
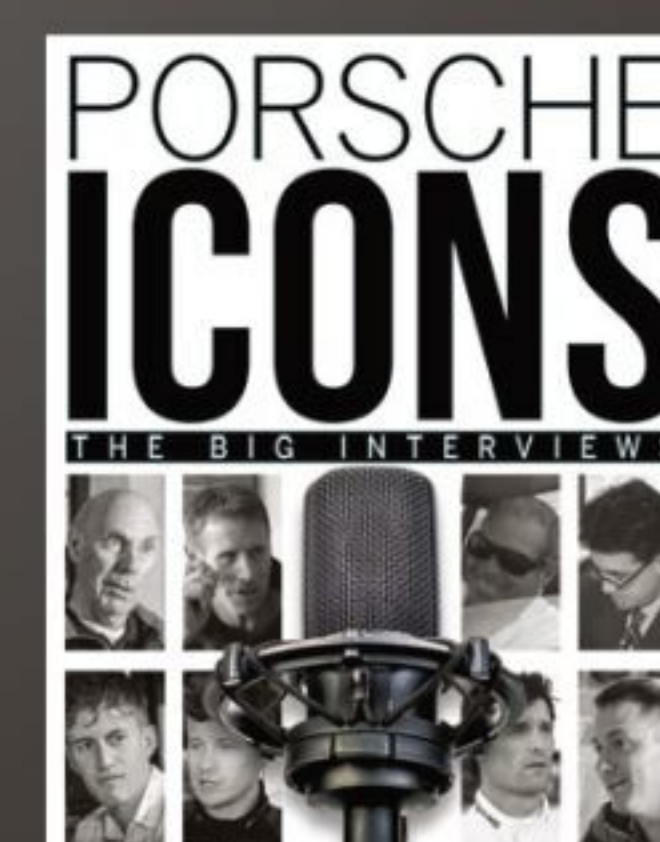
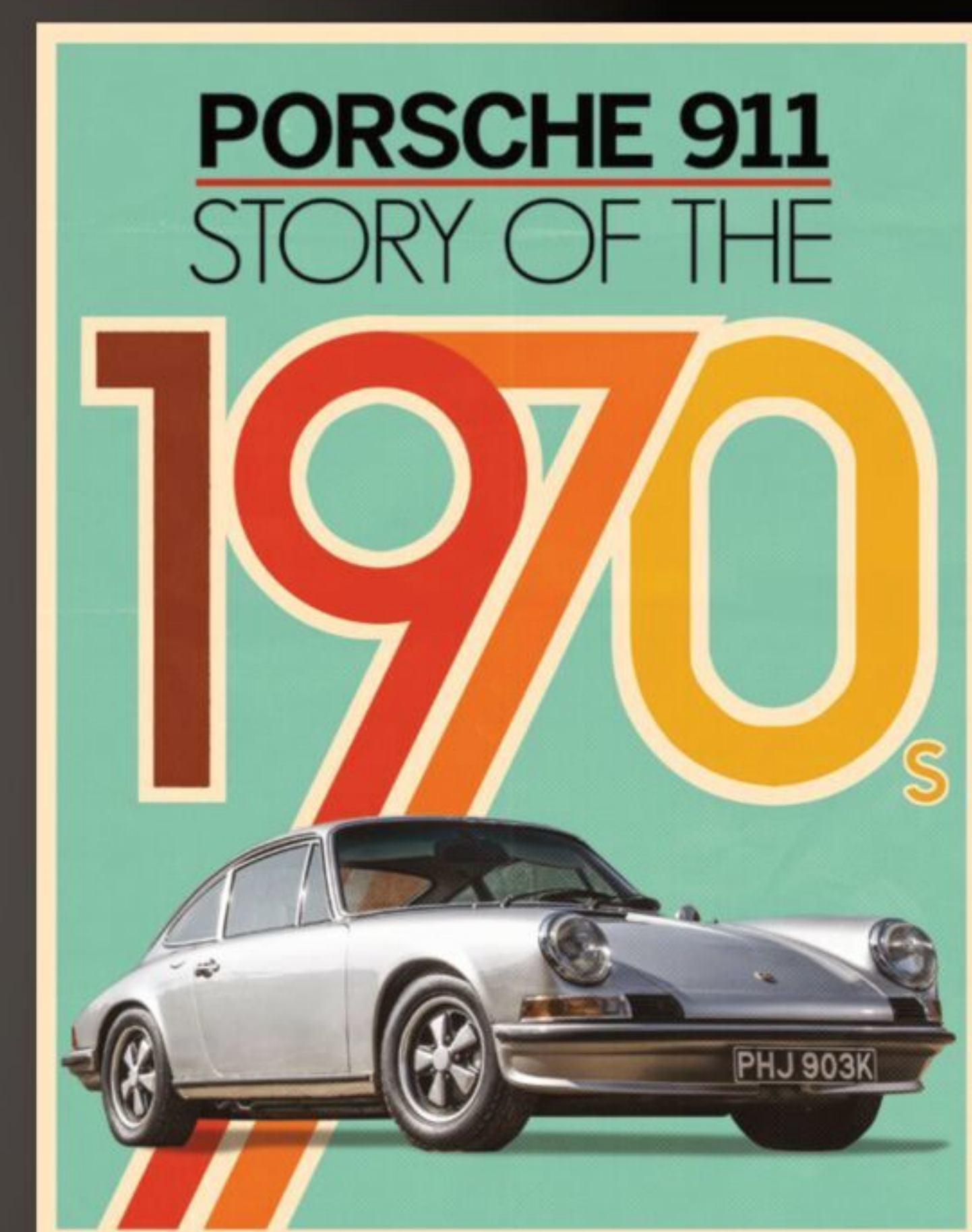
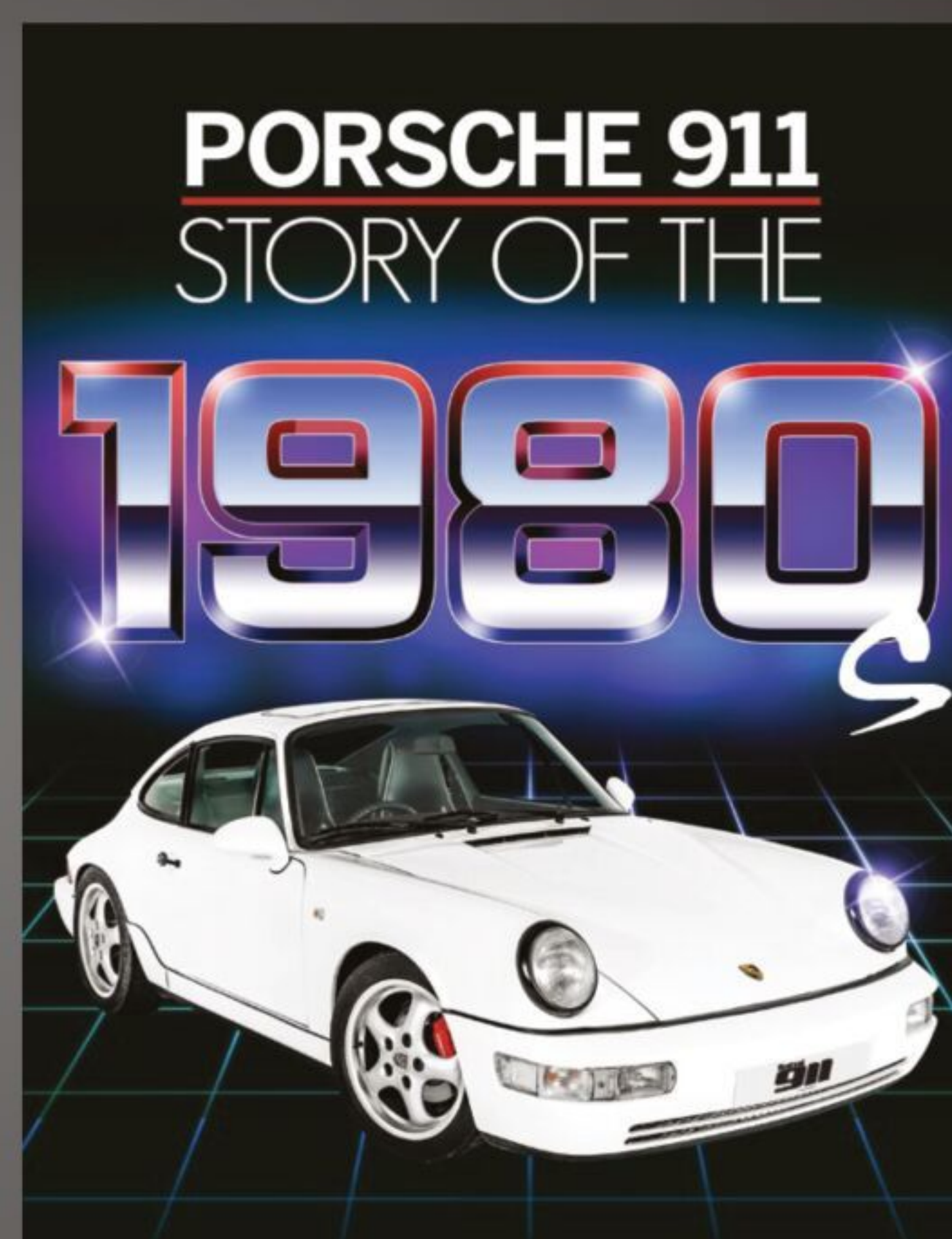
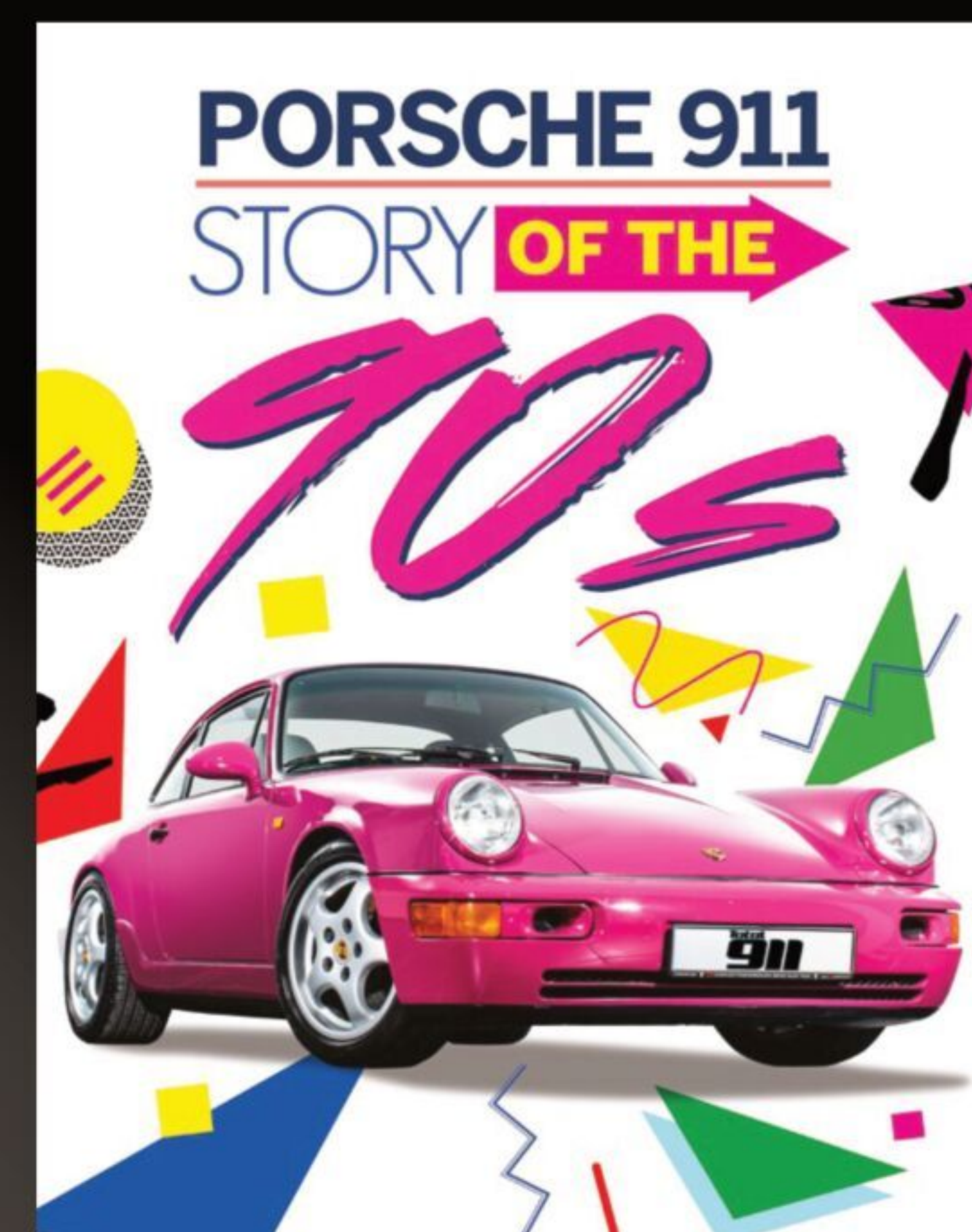
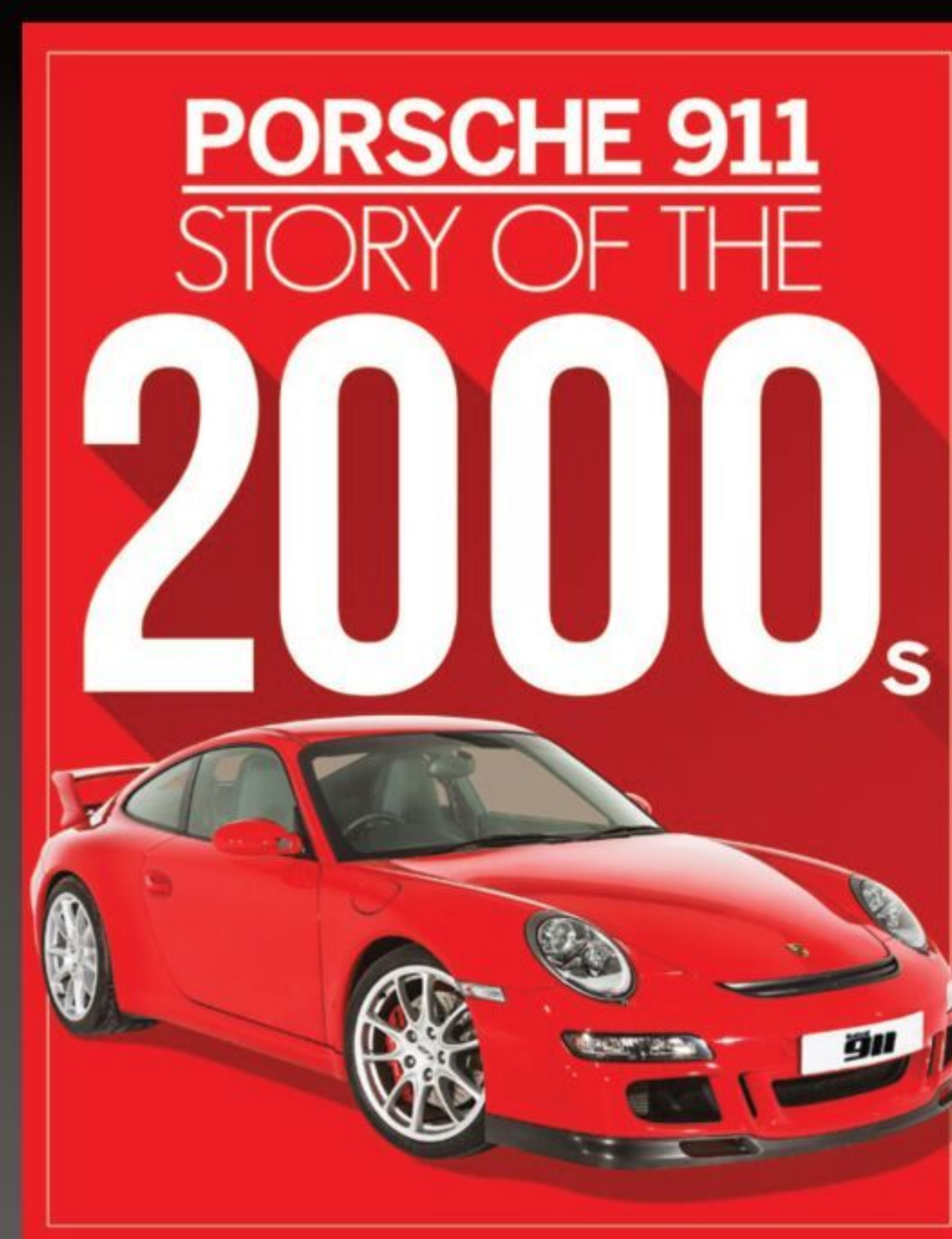
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Living the Legend

Our contributing enthusiasts from around the world share their real-life experiences with their Porsche 911s



Max Newman
Aylesbury, UK

 @maxripcor

Model **997.1 CARRERA**
Year **2004**
Acquired **APRIL 2012**

Model **991.1 CARRERA S**
Year **2013**
Acquired **OCTOBER 2020**



This column is significant for a handful of reasons. Not only is it my first anniversary as a Living the Legend columnist

in **T911**, in the landmark 200th issue of said magazine, but I also have news of a significant moment in my life as a Porsche obsessive of the highest order.

I ended last month's column talking about a tentative search for a 991 to replace our Golf R as the second family car, to enable us to do more motoring by 911 and face some of the coronavirus misery with positive action. I also noted how your search criteria quickly narrows the market of available cars to only a handful of options one might actually consider buying. What were some people thinking when they bought these cars new?

Having already settled on a 991.1 in last month's column I began to focus on certain 'must haves' whilst feeling fairly relaxed about others, surprisingly so perhaps! Editor Lee had convinced me it had to be a 3.8S rather than a 3.4, and I definitely wanted PDK on this car, which to me also means Sport Chrono and the

Sport Design steering wheel with paddles to bring the 'box to life. Of course I wanted PSE to enjoy the music of the motor, but would prefer to avoid the extra control offered by PDCC despite reading some good things about it. It seemed to me that it might make the car almost too good, too competent – less quintessentially 911?

You might say that if I feel bothered about that then I shouldn't be buying a 991 at all, but an earlier car instead. Remember though that what I need here is a modern car to fulfil the role of second family car, I just desperately want it to be a 911. I also knew from experience comparing 2WD and 4WD 997s back to back, and driving both a C2S and C4S 992, that I wanted a C2S. My personal preference is for the feeling through the steering on those cars, and the narrow body is also part of the 2WD appeal. As for the body type, well I like both the Coupe and the Cabriolet and think I'd be happy with either! I've said previously how handsome I think the 991 Cab is and thought it would add to the enjoyment of the car on a country road or alpine pass.

I should mention at this point that I've decided to keep the 997, for the time being at least. I was able to work out the finances on that basis, and perhaps that

fact alone allows me to indulge my anti-purist fantasies. I actually like the idea that acquiring a 991 would leave me feeling happy to let the 997 go, after nearly nine years; but for now I want to mitigate any seller's remorse. And the thought of having two 911s on the driveway feels like the stuff of dreams!

The Stone grey interior of my 997 was the compromise that I made to buy such an otherwise great car, so I definitely wanted a full black leather interior. I love black 911s most of all so that was an obvious colour focus, GT silver, Agate grey, dark blue, all the boring colours – I love them all!

The alloy wheel design on my 997 is an absolute triumph, and as we all know the wheels make or break a car. The most prevalent wheel option on the 991s within my reach seems to be the Carrera Classic, which I'm not such a fan of so was keen to avoid. And of course I must have DAB radio for those road trips and long days on the road for work.

So what have I actually done? Well I've bought an Anthracite brown 991.1 C2S with an Agate and Pebble grey two-tone interior and Carrera Classic wheels. It is a Coupe, you'll be relieved to hear, but I'm still worried that I've bought the wrong car.



Peter Wilson

Adelaide, Australia

@peterwilson_oz

Model **930 3.3**
Year **1980**
Acquired **2011**



At last, the saga of the mysterious mid-thunderstorm breakdown has (hopefully) been resolved. Last

month I had achieved reliable running by supplying 12V direct to the rear fuel pump from the battery, bypassing the fusebox and relay. This was in response to noting a low voltage reading at the pump and also spying overheated wiring and connections at the fuel pump fuse.

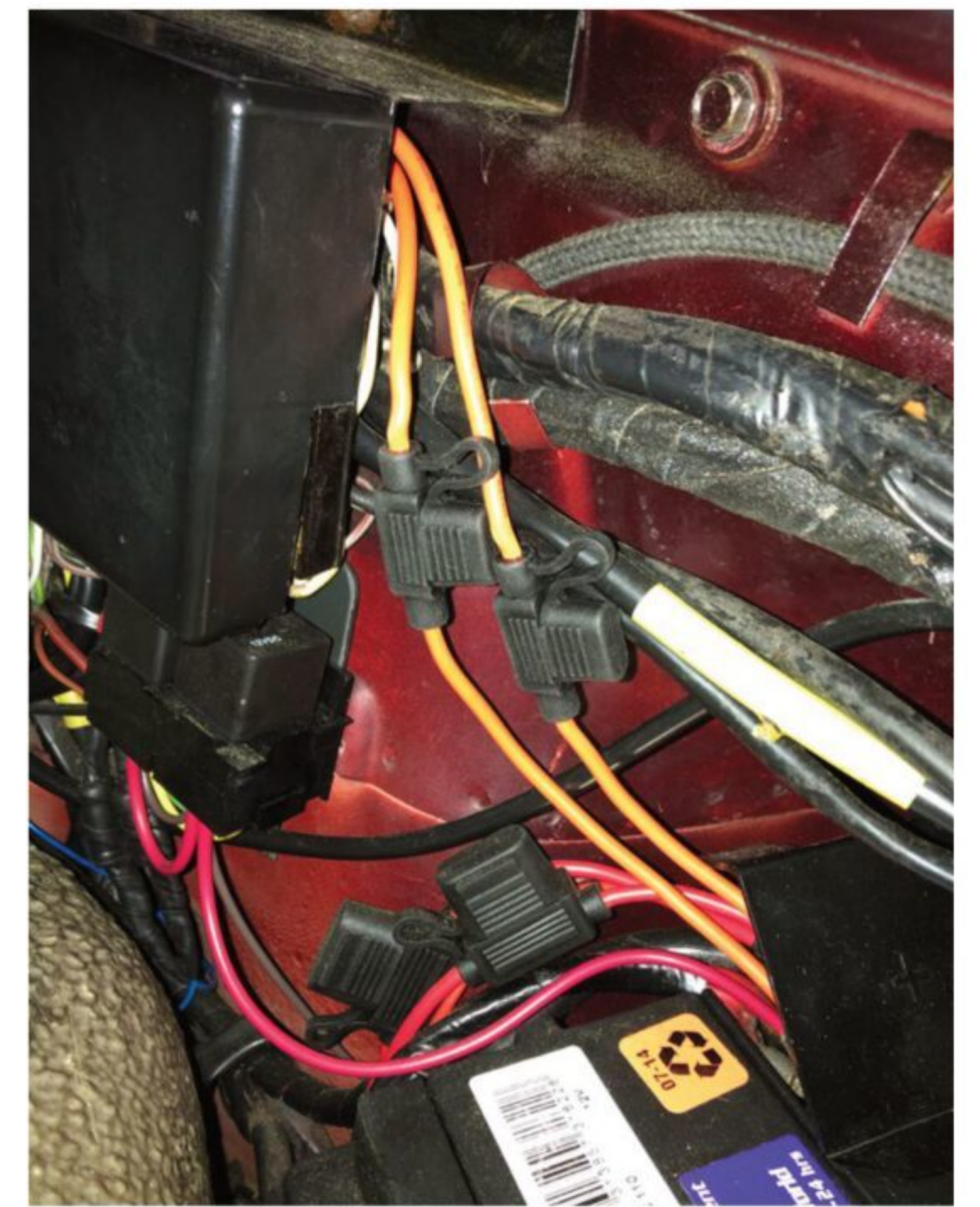
As always, I found a helpful article online about how to split the power feed for the two fuel pump relays and I added dedicated inline fuse holders between the relays and battery positive terminal. With

a 20A fuse in each holder, each relay now has its own low-resistance and protected power feed. I felt pretty good about that until I remeasured the voltage at the rear pump and it was still only 10.7V. However, the car fired up fine and didn't miss a beat on a spirited test drive. I even turned on every possible accessory to try and replicate the suspected low voltage failure and the car still performed perfectly.

I've been lulled into a false sense of success before and thought that perhaps there was still a problem with the function of one of the pumps. I don't have the pressure gauges required to measure this and booked the car in for a day at RSR Sports Cars to have the pressures, flow rates and mixture checked.

But when I picked the car up after work, Mark Poole from RSR said they couldn't fault it. Delivery pressure was 6 bar and flow rate 3 litres/min, showing that both pumps were working fine. They also removed the fuel tank sender to check that the fuel pickup filter wasn't blocked or the tank rusty. All was good in there as well, so I think I can finally start to trust the car again.

With this recent time spent in and about the engine compartment, I have some regrets that I didn't spend a bit more time (and money) on the engine's



cosmetics when I rebuilt it a couple of years ago. The fan and housing show their full 40 years of age and there are various decals and fasteners that would really improve things if freshened up. The intercooler decal is typical, with all the printing virtually invisible.

Internet to the rescue again! AASE Sales in Ohio USA (aasesales.com) sell a complete set of 930 engine bay decals for most years and markets. I think that engine bay freshen-up will be happening sometime soon...



Ron Lang

Ashland, Oregon

@ronlangsport

Model **2.4S**
Year **1972**
Acquired **2018**

Model **930 3.3**
Year **1982**
Acquired **2019**

Model **964 CARRERA 2 REIMAGINED BY SINGER**
Year **1991**
Acquired **2018**

Model **964 C4 SAFARI**
Year **1991**
Acquired **2018**

Model **993 TURBO**
Year **1997**
Acquired **2015**

Model **997.1 TURBO**
Year **2007**
Acquired **2020**

Model **997.2 GT3 RS 3.8**
Year **2011**
Acquired **2016**

Model **991.2 CARRERA 4S**
Year **2017**
Acquired **2017**



For the classic 911 owner, like with so many other experiences, patience is a virtue. Well, I'm getting to practise

patience again.

The restoration of the 1972 911S was completed and I was overjoyed to visit the shop where the work has been performed to enjoy a close look and a verification drive. It was a very hot day outside, and though the car seemed to accelerate and drive well, the oil temperature was hot. How hot? Approaching 250 degrees Fahrenheit, too high for comfort.

Nothing else seemed amiss, so the shop started investigating. First, to ensure that oil was flowing properly to and from the trombone oil cooler tucked behind the right front bumper. All seemed well there.

This was followed by a peak inside the oil tank where it was discovered that a fibre washer had disintegrated somewhere into the oiling system and a screw had backed out of a temperature regulator. No big deal, right? Flush the oil, replace the filter, repair the regulator and try again. Unfortunately, the temps climbed again. So the decision was taken

to pull out the drivetrain and strip down the engine.

On a side note, fifth gear shifting up and down was balky, so the transmission was stripped as well. The fifth gear shift fork was found faulty and replaced, and the transmission was rebuilt using the other existing components which appeared fine.

The engine strip down revealed scoring of the big main bearing on the flywheel end of the crankshaft and some scoring of the other main bearings. Measurements revealed that when the engine was rebuilt originally, the line bore for the crankshaft was off. A few thousandths of a millimetre may seem inconsequential, however it was enough to prevent the crank from spinning freely. So the crankcase was off to the machine shop for reboring and the crankshaft was repolished.

The engine has now been reassembled and is in the process of reinstallation along with the transaxle. Two of everything crossed in hopes that the drivetrain will now be solid, oil temps as expected, and ready to go. More updates on this project next month – did I say patience is a reward in itself? Well then, I'm feeling satiated in the patience department.





Nick Jeffery
Surrey, UK

@npjeffery
 @npjeffery

Model	997 CARRERA
	4 GTS
Year	2012
Acquired	OCT 2018
Model	997.1 GT3
Year	2007
Acquired	NOVEMBER 2019



Since our Welsh road trip, the weather has deteriorated somewhat and of course, we have experienced our

second national lockdown of the year...

However, that has not stopped Porsche activity altogether as I am a firm believer in keeping the cars running 'on the road' all year round.

Pre lockdown 2.0 I have managed a few Porsche meets and drives, namely our regular slot at Mickey's Rock Café on Detling Hill near Maidstone and then onto Exclusively Porsche at Westerham Brewery, observing the rules and of course being sure to maintain social distancing throughout.

I also continue to find new routes and venues like The Airport Café in Sellindge, near Ashford in Kent, which has become a regular favourite with some of my Kent-based pals as the roads vary and give the cars a proper workout, plus the breakfasts there are really good!

We also managed a trip up to The Classic Motor Hub for their last 'Hub Grub' Saturday, which was excellent despite a rather difficult journey getting there owing to a serious car accident on the A41, leading to a road closure and our group being diverted around a housing estate! Suffice to say, crawling along in first gear at a snail's pace really is not any fun in a 13-year-old manual GT3 with a heavy clutch... Still, once we arrived, the bacon baps and classic cars



on display more than compensated and the journey home to Surrey, continuing the mantra of avoiding motorways at all costs, was truly epic!

I have also tagged along on a new venue scouting trip with the recently appointed Porsche Club GB Surrey Region (R29) Joint Regional Organisers which was great fun, even though the weather was awful and the cars got filthy! There is always something special about a Porsche convoy with other like-minded enthusiasts – I took my Meteor grey Carrera 4 GTS, Colin was in his Carrera white GTS and Leigh in his Cobalt blue aero kit-equipped 997.1 Carrera S. The trip was a great success, finding a variety of options for pop-up style meets and drives which bodes well for 2021! Bring on the spring!

I made time to ensure I attended the last Porsche Club GB track day of the 2020 season at Goodwood's historic motor circuit and the day did

not disappoint. The various routes I use from home to the circuit and back are second to none and it was brilliantly organised as usual, with a vast array of Stuttgart's finest to drool over as you can see from some of the pictures. It was interesting to compare the relative performance of cars on track, from a 993 RS to the latest 991.2 GT3 RS and Turbo S, which seemed to literally catapult themselves out of the chicane and along the start and finish straight. In fact, all three generations of the GT3 RS were represented including a gorgeous 996 with blue decals which, as I understand it, is even rarer than the red decal derivatives!

Finally, the GT3 has been into Paragon for its annual MOT, which it passed with flying colours and no advisories, plus a preventative oil and filter change as I do not believe in leaving oil changes in line with Porsche's recommended two-year interval...



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Model **991.1 CARRERA**
Year **2013**
Acquired **2019**

Model **996.2 CARRERA**
Year **2002**
Acquired **2020**



Firstly, I'm so blown away to be writing this column for the 200th edition of my favourite magazine. Wow.

Congratulations to Lee and the whole **Total 911** team. Thank you for having me in this section every month, it really is a dream come true. As well as driving and working on my 911, I'm now writing about my 911 passions, one of those being modifications, which is what the focus of this column is today.

While I might be fortunate enough to spec a brand-new 911 one day, the time for specing the 991 generation has come and gone. As we all know, the 992 recently replaced the former 991 generation of 911s. If you follow my YouTube adventures, you will know that I not only enjoy tinkering on my cars – oil changes, brake pads, air filters etc – but I also love making adjustments to both the interior and exterior styling of my cars. In early 2020 I had my 991 wrapped in a Satin blue vinyl colour which lasted almost nine months. This was a little disappointing because I was hoping to get at least 18 months out of it. However, every cloud has a silver lining and in the case of my 991 that cloud's lining is red.

Now my 911 is back to its factory Agate grey colour, I have been thinking about what to do next with the styling.



Taking a nod from the rather unique-looking GTS trim, and folks like Andy (from the *Road to Redline* podcast), I'm adding a few red accents here and there around the interior. In the month since removing my wrap, I have added red seatbelts to replace the factory black colour, replaced the colour of the sports chrono clock on the dash (also black from factory) and the centre dial in the instrument cluster is also red. All of those jobs were really enjoyable to do. I'm also considering powder coating my calipers red to finish off the accents, but as they are the basic Carrera brakes and not the big brakes provided with the Carrera S, which are red from the factory, I'm currently on the fence.

These sort of jobs open up a bit of a can of worms with many Porsche enthusiasts. On the one hand, you have the Porsche enthusiasts who would only option a 911 from the factory and once delivered, that's it. No mods, no changes, the factory optioned 911 is to be untouched. On the other, you have Porsche (and other brand) enthusiasts who love to add personal touches to the cars they purchase. In my experience this seems to be either because the owner hoped to have different options with the car, or the owner likes to tailor the look and feel of the car to their own unique personality, style or vision for the car.

Some of the folks on this end of the spectrum go a little too 'Fast and Furious' (neon lights, an endless list of aftermarket non-OEM components etc) but I like to think that I've stayed true to the Porsche options and Porsche's design language. The door decals I've added to my 997 and 991, the wing I added to my 997, the colour of the gauge faces in my 991, the OEM carbon fibre trim... Yes, some of those are produced by non-Porsche manufacturers, but they're 'true' to the OEM Porsche design and style – shapes, colours, finishes.

I'm certainly in the latter category of Porsche enthusiasts who like to mod their cars, I want the options I would or could have ordered from the factory if I had bought the car new myself. Perhaps one day I'll be able to design my own brand-new 911, but for now I'm living my own dream inside my garage... tinkering until my heart's content and at the end of the day, the smile on my face whenever I walk over to my car, turn the ignition and drive off speaks for itself. Follow your passions, follow your inspirations and never look back.



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Lee Sibley

Poole, UK

@lee_sibs

That Nine Eleven Guy

Road to Redline

Model **996.1 CARRERA**
Year **1998**
Acquired **JAN 2019**



It's been annual service time for the 996 this month. As regular readers will know, I like to change the oil on my

996 every 5,000 miles, to check for any detritus in the oil which might indicate a disintegrating IMS. This is done on top of the 996's annual servicing, in the hope I can continue to keep it in as tip-top condition, mechanically, as possible.

This year's service was only a minor, as indicated on the 996's service record (I completed a heftier 96K service 12

months ago). For this I decided to visit Paragon GB, whom we rate highly at this magazine. However, for all the brilliantly prepped cars I've driven from Paragon's showroom over the last decade, I'd never actually put my own car through its workshop, so I thought it was about time I put that right.

The service itself was carried out without fuss, though beforehand Paragon performed a general health check on the 996. A few things were pointed out, though luckily I already knew about every one of them, with there being nothing of imminent concern. It was great to be vindicated enough to confirm that I know my own car, but it also credited Paragon's service team, who were able to identify the true condition of Little Irish. I now have a list of work that should be budgeted for over the next year or so.

I'd noticed the rubber trim going round my 996's rear screen was lifting quite badly at the bottom corners, so I got this replaced at Paragon, who luckily had the trim in stock. A genuine Porsche item, usually our favourite Stuttgart manufacturer knows how to charge for seemingly inconspicuous parts, but I was delighted to find out the whole trim cost a mere £50. It's only a little part but makes a huge difference to the overall



finish of my 911, so I was happy to have that fitted.

In true 996 fashion, my car had one or two interior rattles, but the two-hour journey home from Paragon was a lot quieter than the dash there. Dave, Paragon's technician, refitted the offending panel (which turned out to be the trim aligning the base of the car's rear screen) to good effect.

My 996 is now fully serviced and in great condition going into the winter months, though I have a little list of jobs that will need doing over the next year or so to keep it in tip-top condition. Thanks to Nick, Dave and the team at Paragon for their diligence and hard work on Little Irish.



Chris Wallbank

Leeds, UK

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@chrisjwallbank

Model **997.1 CARRERA S**
Year **2005**
Acquired **NOV 2012**



My 997 is still up for sale and the search continues for the perfect 911. I've always had a soft spot for 991 GTSS

and now that they're coming down to around the £70,000 mark in the UK, they are starting to become more of a reality than a dream. Lockdown has also helped me to save a bit more cash to purchase my next Porsche, so that's one positive I can take from the pandemic I guess!

I now check my saved searches every day on Auto Trader, it's becoming a

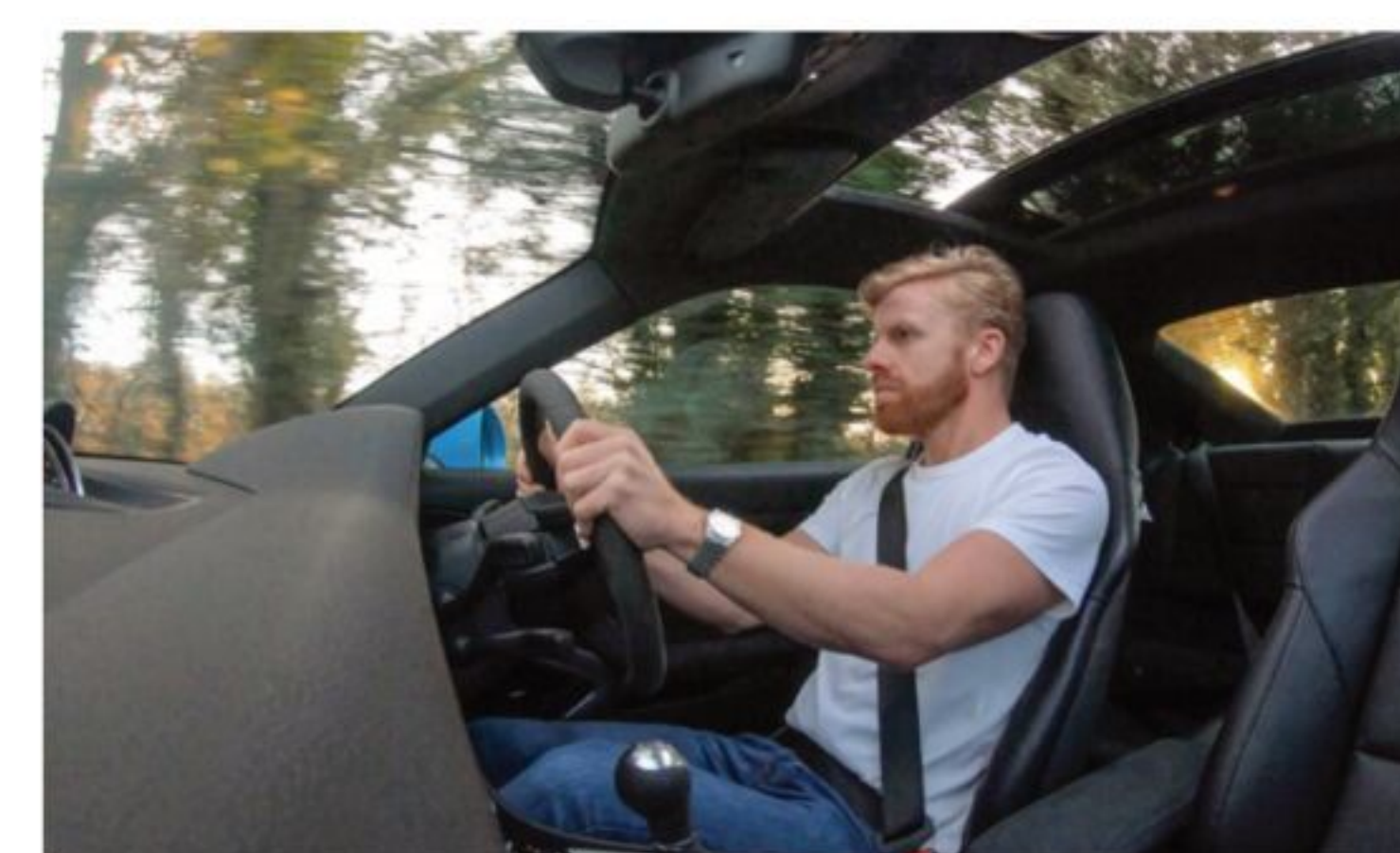
dangerous habit, and this month I came across a 991.2 GTS with an unusual specification at a good price that was for sale at a local Prestige car dealership called Riviera Automotive.

Finished in Miami blue, it looked stunning and I do love that colour on a GTS. It was a rare manual, which I also liked, having driven a couple of manual 991.2s, but I then realised something even rarer – it had no centre lock wheels. After a bit of research it turns out you can delete the centre lock wheels at factory, something I didn't even realise that you could do.

I can imagine this may put people off this particular GTS, and it was a bold move by the previous owner, but I actually liked the idea of the practicality of having traditional five-lug wheels.

I've never actually driven a 991.2 GTS and I was eager to see the difference compared to a 991.2 Carrera T.

When I arrived at Riviera Automotive I couldn't find fault with the car aesthetically, it was immaculate and prepared to a first-class standard. I was handed the keys and I took the car alone due to current COVID restrictions, and



after 20 minutes of driving a mixture of A and B roads I must say I fell in love with the car pretty much instantly! Having the wider body it felt that bit more poised and stable in corners and the turn in was outstanding. I was also a bit worried about the exhaust note lacking on the turbo-powered engine, but with the sports exhaust switched on it didn't disappoint and despite being manual even blips the throttle on downshift, which took me by surprise. The extra horsepower over the Carrera T was also notable, too!

I liked the car that much I'm now in talks with Riviera to try and come to a deal, the only thing that is holding me back is the ongoing sale of my 997, so I'm hoping they can get to where I need to be with trading mine in as an option.





Tony McGuinness

San Diego, USA

@tonymcguinessgt3rs

Model **997.2 GT3 RS**
Year **2011**
Acquired **FEB 2011**

Model **991.1 GT3**
Year **2015**
Acquired **DEC 2014**



It's hard to believe my 991.1 GT3 was six years old in December. Long-time T911 readers may have read my

Living the Legend column describing the day I sold my 997.2 Turbo and bought the new GT3.

While it was December 2014 when I purchased the new GT3, and there were several 2014 models for sale at the dealer, I bought the newer model year 2015. Not long after Porsche debuted the 991-generation GT3, there had been several engine fires involving 2014 GT3s. Porsche quickly implemented a stop sale on the car and recalled the 2014 model while they investigated the cause.

The 2014-year models all had their engines replaced and Porsche provided the owners a great warranty. However, I wasn't comfortable buying a 2014 model year version. Additionally, there were some newer options on the 2015 that were not available on the 2014, one of them being clear tail lights which I think look outstanding.

So how has six years of ownership been with the GT3? Well, I just hit the 11,000 mile mark which means essentially I have been driving the car approximately 1,800 miles per year. It's definitely not a lot, but I drive my 997.2 GT3 RS a similar number of miles.

In the first year of ownership, the thermostat failed and was replaced. That event did concern me but apparently it was not uncommon. I've had no issues with it again or anything else except (as I have mentioned in a previous column) an interesting issue that has occurred off and on, sometimes it will blow significant plumes of white smoke on start up.



This is not your typical puff of smoke that takes place when a GT3 starts up. This is much more than that and it has made many observers gasp in disbelief, which is always slightly embarrassing as you hope the huge cloud of smoke dissipates quickly and people stop pointing at you.

There has never been any consistency to it occurring, either. As I mentioned in a previous column, the occasional plume of smoke on startup can take place at any time of day, whether it has been driven or not.

The car has belched a smoke cloud upon startup in my garage in the early morning of both winter and summer, and it has also occurred after long drives on cool as well as very hot San Diego days. After a long drive, I've let the car sit for an hour or so before starting it up again.

One day after getting ready to return from a long drive, I asked my friend to

video my car when I started it. Sure enough, he was able to capture on video the plume of smoke that also lasted about 45 seconds. Since that day, I have taken videos of most startups and have captured it happening at different times. Unfortunately, like a toothache that goes away at the dentist, Porsche were unable to replicate it smoking, but as you may recall from my Living the Legend column back then, they did replace the spark plugs.

I hope to have it looked at again by Porsche within the next two weeks. The person who is in overall charge of Porsche service at the dealerships in Southern California informed me he will himself examine the engine and see if they can find the exact cause.

Perhaps, you may be thinking to yourself, "The car is six years old and out of warranty!" Fortunately, Porsche extended the 991.1 GT3 engine past the normal warranty for a total of ten years or 120,000 total miles.

The occasional annoying plume of smoke aside, I will say that I just absolutely love the 991.1 GT3. Everything about the car is fantastic. The handling is superb. The interior is of the highest quality. It still looks brand-new inside and out.

What I love the most is the sound of that flat six screaming to 9,000rpm. It gives me goosebumps every time the PDK bangs effortlessly through the shifts. It simply is a phenomenal 911. Stay tuned, I promise to keep everyone updated on the smoking on startup issue. Plus, soon I'll also be giving an update on ownership of my 997.2 GT3 RS as that magical Neunelfer turns ten years old.





Ian Harris
Shoreham, UK

 @harrisclassics

Model **3.2 CABRIOLET**
Year **1984**
Acquired **FEB 2020**

Model **2.4S**
Year **1972**
Acquired **JANUARY 2018**

Model **964 CARRERA 2**
Year **1993**
Acquired **MARCH 2019**

Model **991 CARRERA T**
Year **2017**
Acquired **OCTOBER 2020**

Model **S/T REPLICA**
Year **1971**
Acquired **DECEMBER 2019**

Model **964 RS**
Year **1993**
Acquired **AUGUST 2020**



Last month in my Living the Legend column I talked about my epic road trip through Europe in the newly

acquired 991 Carrera T that performed without fault and after 2,000 plus miles had stolen my heart. So I've decided to keep it for the long term as at present there isn't a single car on the market, apart from the GT3 Touring, that I would replace it for.

After getting back from my trip it was time to assess the damage caused to my car in the way of stones and wear and tear. The list of jobs needed to get my car to its former glory included a new windscreen as mine had cracked from a flying stone, a full front-end repaint for the same reason, as it was peppered with chips, new P Zero rear tyres and new discs and pads all round. The

repairs to the car were over double what the holiday had cost me, but it was still worth every penny.

I decided to fit the discs and pads myself as it's a fairly simple job for me, the only thing I hadn't factored in was you need to replace the stretch bolts and also the pad wear sensors as these are one-use only parts. Thankfully a quick phone call to my local OPC and I was on my way to collect the parts, and later both front and rear discs and pads were fitted without any issues.

The next job was to protect the freshly painted front end, so I had the car booked into Refined Detail who have a superb reputation. Richard did a full stage 1 paint correct and polish and then applied the Self Healing Xpel PPF to the front bumper, bonnet and wings. After they'd had the car for a week I went to inspect, and didn't even realise the PPF was already fitted as the finish was so

good, I was very impressed. The car was then ceramic coated and left to cure for 24 hours. I must admit the car looks brand new again and with the added protection of the PPF and ceramic coating, I know it's good for plenty more miles to come. This experience has taught me going forwards, I will definitely get all my cars PPF'd and coated as soon as I buy them, to avoid any expensive paintwork in the future.

After all this work was done it was straight to Litchfield where the car was booked in for further work including a remap to 470ps, KW suspension, 7mm wheel spacers all round, extended bolts, corner weighted and fast road Geo set up! I've only just had this work done at the time of writing this so will update next month with my thoughts. It's fair to say a lot of time and love has gone into my T and I'm constantly impressed by this car.



Phil Farrell
Cheshire, UK

@mllx8pjf

Model **991.1 C2 GTS**
Year **2015**
Acquired **JUNE 2020**



Well what a month it's been. No sooner had we been able to start planning trips out to see friends and family we were plunged

back into the realms of 40-mile round trips in our beloveds for that essential trip to Tesco for a pint of milk.

Luckily just before 'Lockdown – the second lap' the annual Rennsport Collective event took place at Stowe, a backdrop nearly as special as the cars that were displayed. Paul (@the911goat) was showing some of his cars and generously gave Joe, Andy and Lee of @roadtoredline fame the chance to drive them. I'm still not driving the GTS as much I'd like so I passed and took my own wheels.

Early weather wasn't great and we aquaplaned most of the way across the New Forest and up the A34. As I wandered around thinking back to the torrential rain we'd driven through on the journey up to Stowe, I had to think about the commitment of the owners of the museum pieces the rest of us had come to admire. Fair play to them, I thought, that those owners had braved the weather for the enjoyment of others. Very on-brand!

As ever, Porsche ownership and events bring good friends together. Our little group took the opportunity to fire up the barbie (most likely illegally in the grounds of one of THE public schools, I half expected us to



get a ticking off by the groundsman at any moment). The rear wing of my personal favourite car in the group, the 4.0 RS, made a commendable croissant stand and the front wing a wind break. Those engineers at Flachtt really did think of everything when designing that particular masterpiece of a car!

Later that week we went into lockdown. So any motoring enjoyment was once again limited to those essential journeys.

And with nothing else to do I pretty quickly found myself with no other option but to wade into the classifieds, having packed the PlayStation away while we're doing the building, so no Sim Racing this lockdown. The better half is thinking of trading for a Macan. They seem to have 911-esque levels of residual values and do seem like the natural choice.

It got me recalling that the Macan was the first ever Porsche I drove. I'd always been an M-man, and then one day I got an invite to the experience centre at Silverstone as a friend had put a deposit down on a Macan GTS. It was that few laps in a Porsche SUV that opened my eyes to all things Porsche. If they could make an SUV go round a track like the Macan does, then what must one of the bona fide sports cars be like? I think I bought my first Cayman about three weeks later and the rest, as they say, is history!

On the horizon, as we come out of lockdown I'm heading off to Classic Heroes in Sussex with my M-love (an E46 M3 CS for anyone who's interested). I'm looking to get some preventative care done to the car so they're going to give it a once over for me and an oil change. Having had a great chat with Barney, the owner, he explained that many cars of that era are now suffering from unseen corrosion and it got me thinking back to the 996 I had a while ago. I intend to ask him about whether there are any issues Porsche owners should keep an eye out for in cars from a similar age to my M. So I'll keep you posted with what he's got to say.

Until then, stay safe, well and enjoy your 911 when it's safe, and essential, to do so.



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EVERYTHING YOU NEED FOR YOUR 911

Data file

Full specs, ratings and market values of every model, including the 911 Turbos, can be found beginning on **page 76**



Plus

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Looking for a new 911? The classifieds from our independent specialist partners are the first place you should start your search

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Data file

Definitive facts and figures for every 911 model from 1964 to the present day



911s in the data file are organised in rows according to release date, beginning with the very first model in 1964. Many models were available in Coupe, Targa and Cabriolet forms, with the option of automatic transmission. Here, data has been provided from the Coupe variants unless stated. All data here has been compiled, where possible, from Porsche's own figures.



General valuations

This reflects the general market trend for a model's used value compared to the previous financial quarter. The review for 2021 Q1 will be January. The review for 2020 Q4 was October.



Ratings

Each model is rated out of five in our half-star system according to their performance, handling, appearance and desirability.



● (O series) ★★★★★
911 2.0-litre
1964-1967
The 911 that started it all when the prototype appeared in 1963, this car set the style for all 911s to follow. Developed to replace the 356, a four-pot 912 was also made.

Production numbers	9,250
Issue featured	123
Engine capacity	1,991cc
Compression ratio	9.0:1
Maximum power	130hp @ 6,100rpm
Maximum torque	149Nm @ 5,200rpm
0-62mph	8.3 sec
Top speed	131mph
Length	4,163mm
Width	1,610mm
Weight	1,075kg
Wheels & tyres	
F	4.5x15-inch; 165/80/R15
R	4.5x15-inch; 165/80/R15



● (O series) ★★★★★
911R 1967
The lightest 911 of all time, the R was essentially a prototype racer fitted with a 906 flat six engine producing 210hp. Of the 19 produced, four would stay at the factory as works cars.

Production numbers	19
Issue featured	94
Engine capacity	1,991cc
Compression ratio	10.5:1
Maximum power	210hp @ 8,000rpm
Maximum torque	152Nm @ 6,800rpm
0-62mph	5.9 sec
Top speed	152mph
Length	4,163mm
Width	1,610mm
Weight	800kg
Wheels & tyres	
F	6x15-inch; 185/70/R15
R	7x15-inch; 185/70/R15



▼ (C & D series) ★★★★★
911S 1969-1971
An upgrade in engine size gave the 911S 180bhp. Unlike the 911E, the S didn't gain improved low-down power and torque, so you had to keep the revs up for good power.

Production numbers	4,691
Issue featured	120
Engine capacity	2,195cc
Compression ratio	9.8:1
Maximum power	180hp @ 6,500rpm
Maximum torque	199Nm @ 5,200rpm
0-62mph	6.6 sec
Top speed	145mph
Length	4,163mm
Width	1,610mm
Weight	1,020kg
Wheels & tyres	
F	6x15-inch; 185HR
R	6x15-inch; 185HR



● (C & D series) ★★★★★
911T 1969-1971
Like the E, the 911T's torque curve was flatter, making the car more drivable. Ventilated discs from the S were fitted, and a five-speed gearbox became standard.

Production numbers	15,082
Issue featured	107
Engine capacity	2,195cc
Compression ratio	8.6:1
Maximum power	125hp @ 5,800rpm
Maximum torque	169Nm @ 4,200rpm
0-62mph	7.0 sec (est)
Top speed	127mph
Length	4,163mm
Width	1,610mm
Weight	1,020kg
Wheels & tyres	
F	5.5x15-inch; 165HR
R	5.5x15-inch; 165HR



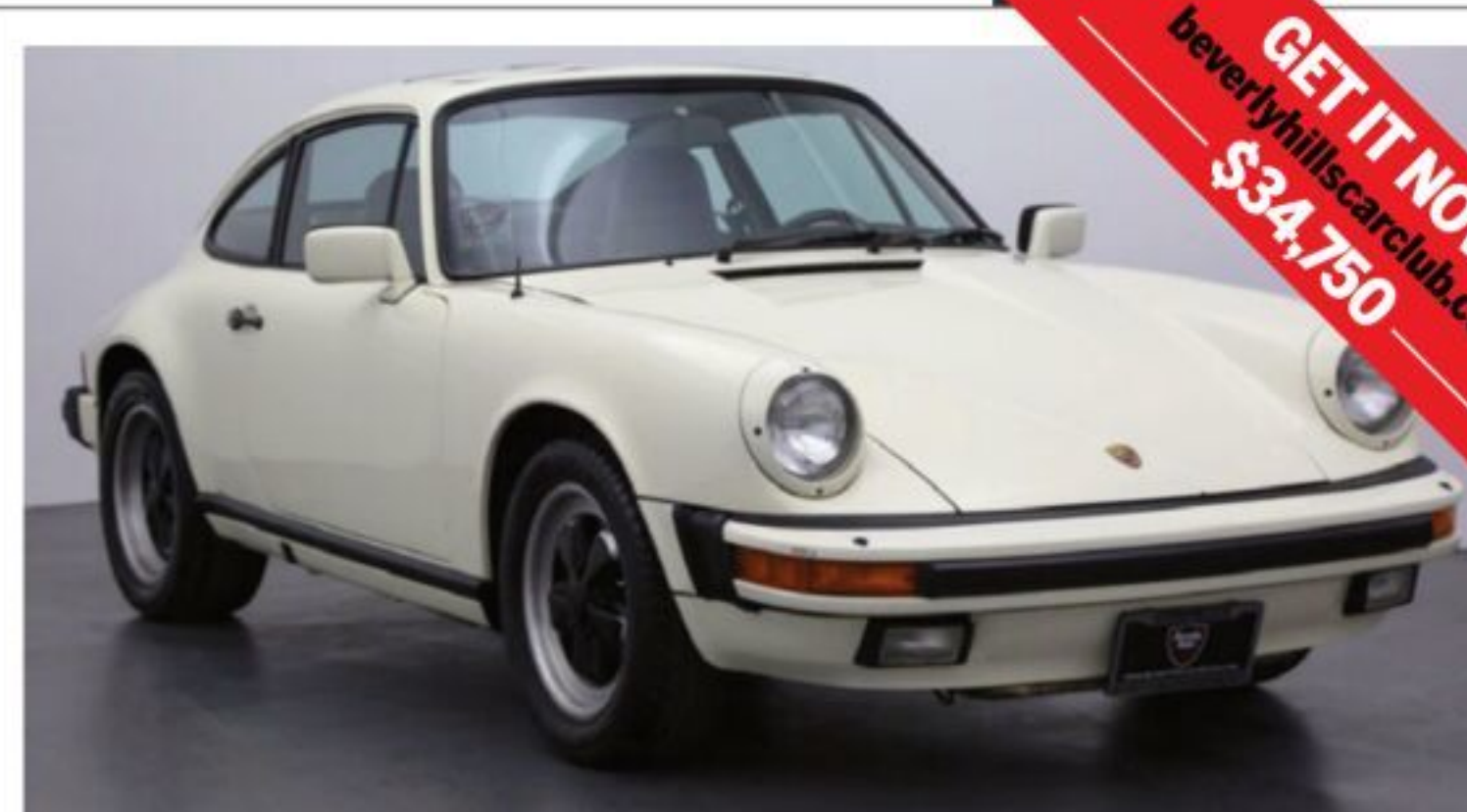
● (F series) ★★★★★
911T 1973
US-bound F series 911Ts were the first 911s to have Bosch K-Jetronic fuel injection, improving emissions. This was mainly mechanical, with some electronic sensors.

Production numbers	16,933
Issue featured	127
Engine capacity	2,341cc
Compression ratio	7.5:1
Maximum power	130hp @ 5,600rpm
Maximum torque	197Nm @ 4,000rpm
0-62mph	7.6 sec
Top speed	128mph
Length	4,163mm
Width	1,610mm
Weight	1,077kg
Wheels & tyres	
F	5.5x15-inch; 165HR
R	5.5x15-inch; 165HR



● (G series) ★★★★★
Carrera 3.0 RS 1974
Updated version of the 1973 2.7 RS, complete with impact bumpers and Turbo-spec whaletail rear wing. Steel arches added by hand at the factory, with 917 brakes.

Production numbers	109
Issue featured	145
Engine capacity	2,994cc
Compression ratio	8.5:1
Maximum power	230hp @ 6,200rpm
Maximum torque	275Nm @ 5,000rpm
0-62mph	5.3 sec
Top speed	152mph
Length	4,135mm
Width	1,680mm
Weight	900kg
Wheels & tyres	
F	8x15-inch; 215/60/VR15
R	9x15-inch; 235/60/VR15



● ★★★★★
911 SC 1978-1983
From 1978, the SC was the only normally aspirated 911. Developed from the Carrera 3.0, but produced less power. Upgraded Sport options.

Production numbers	60,740
Issue featured	156
Engine capacity	2,994cc
Compression ratio	8.5:1/8.6:1/9.8:1
Maximum power	180/188/204hp @ 5,500rpm
Maximum torque	265/265/267Nm @ 5,500rpm
0-62mph	6.5 sec
Top speed	141/146mph
Length	4,291mm
Width	1,652mm
Weight	1,160kg (1978)
Wheels & tyres	
F	6x15-inch; 185/70/VR15
R	7x15-inch; 215/60/VR15



● ★★★★★
SC RS 1984
True homologation special built so that Porsche could go Group B rallying. Six Rothmans cars used fibre glass front wings and lid. Tuned 3.0-litre engine had its basis in 930's crankcase.

Production numbers	21
Issue featured	158
Engine capacity	2,994cc
Compression ratio	10.3:1
Maximum power	255hp @ 7,000rpm
Maximum torque	250Nm @ 6,500rpm
0-62mph	4.9 sec
Top speed	153mph
Length	4,235mm
Width	1,775mm
Weight	940kg
Wheels & tyres	
F	7x16-inch; 205/55/VR16
R	8x16-inch; 225/50/VR16

● (O & A series) ★ ★ ★ ★ ★
911S 1967-1968



Porsche soon produced more powerful variants. The first of these was the 911S – for Super – which had a higher compression engine and twin Weber 40IDS carburettors.

Production numbers	4,015
Issue featured	148
Engine capacity	1,991cc
Compression ratio	9.8:1
Maximum power	160hp @ 6,600rpm
Maximum torque	179Nm @ 5,200rpm
0-62mph	8.0 sec
Top speed	137mph
Length	4,163mm
Width	1,610mm
Weight	1,030kg
Wheels & tyres	
F	4.5x15-inch; 165/80/R15
R	4.5x15-inch; 165/80/R15

● (A series) ★ ★ ★ ★ ★
911L 1967-1968



In 1967, the 911 was updated and the range expanded: the 911L (Lux) was standard and sat alongside the high-performance 911S and entry-level 911T.

Production numbers	1,603
Issue featured	138
Engine capacity	1,991cc
Compression ratio	9.0:1
Maximum power	130hp @ 6,100rpm
Maximum torque	173Nm @ 4,600rpm
0-62mph	8.4 sec
Top speed	132mph
Length	4,163mm
Width	1,610mm
Weight	1,080kg
Wheels & tyres	
F	5.5x15-inch; 185HR
R	5.5x15-inch; 185HR

● (A & B series) ★ ★ ★ ★ ★
911T 1967-1969



To save money, the 911T's engine used cast-iron cylinder heads, unlike the Biral aluminium/iron items, which gave more efficient cooling, and carbs instead of fuel injection.

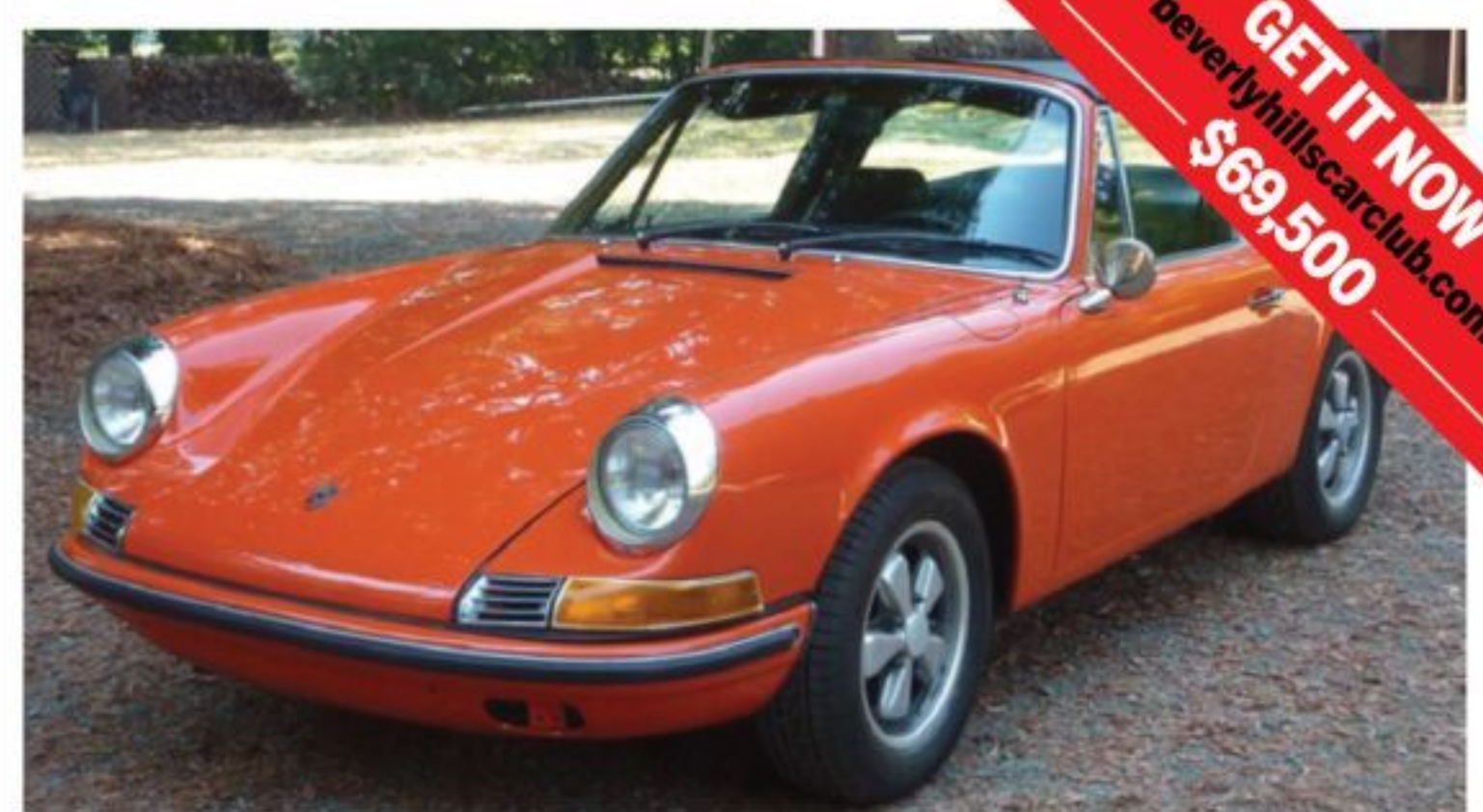
Production numbers	6,318
Issue featured	127
Engine capacity	1,991cc
Compression ratio	8.6:1
Maximum power	110hp @ 5,800rpm
Maximum torque	156Nm @ 4,200rpm
0-62mph	8.8 sec (est)
Top speed	124mph
Length	4,163mm
Width	1,610mm
Weight	1,020kg
Wheels & tyres	
F	5.5x15-inch; 185HR
R	5.5x15-inch; 185HR

● (B series) ★ ★ ★ ★ ★
911E 1968-1969



The 911 received its first major update, evolving into what is known as the B series. The 911E replaced the 911L as the 'standard' car. The 'E' stood for 'Einspritz' (injection).

Production numbers	2,826
Issue featured	n/a
Engine capacity	1,991cc
Compression ratio	9.1:1
Maximum power	140hp @ 6,500rpm
Maximum torque	175Nm @ 4,500rpm
0-62mph	7.6 sec
Top speed	130mph
Length	4,163mm
Width	1,610mm
Weight	1,020kg
Wheels & tyres	
F	5.5x15-inch; 185HR
R	5.5x15-inch; 185HR



● (B series) ★ ★ ★ ★ ★
911S 1968-1969
 Like the E, the S gained a fuel injection, boosting power to 170bhp. To help cope with the extra demands on the engine, an additional oil cooler was fitted in the front right wing.

Production numbers	2,106
Issue featured	n/a
Engine capacity	1,991cc
Compression ratio	9.1:1
Maximum power	170hp @ 6,800rpm
Maximum torque	183Nm @ 5,500rpm
0-62mph	7.0 sec (est)
Top speed	140mph
Length	4,163mm
Width	1,610mm
Weight	995kg
Wheels & tyres	
F	6x15-inch; 185/70/R15
R	6x15-inch; 185/70/R15

● (C & D series) ★ ★ ★ ★ ★
911E 1969-1971



Engine improvements included revised cylinder heads, larger valves and stronger con rods. The 1970 'D' series cars had hot-zinc coated undersides.

Production numbers	4,927
Issue featured	107
Engine capacity	2,195cc
Compression ratio	9.1:1
Maximum power	155hp @ 6,200rpm
Maximum torque	196Nm @ 4,500rpm
0-62mph	7.0 sec
Top speed	137mph
Length	4,163mm
Width	1,610mm
Weight	1,020kg
Wheels & tyres	
F	6x15-inch; 185HR
R	6x15-inch; 185HR

● (E series) ★ ★ ★ ★ ★
911E 1972



2,341cc was achieved by increasing the stroke from 66mm to 70.4mm while at the same time leaving the bore unchanged. The new 915 transmission was stronger.

Production numbers	4,406
Issue featured	117
Engine capacity	2,341cc
Compression ratio	8.0:1
Maximum power	165hp @ 6,200rpm
Maximum torque	206Nm @ 4,500rpm
0-62mph	7.5 sec
Top speed	137mph
Length	4,163mm
Width	1,610mm
Weight	1,077kg
Wheels & tyres	
F	6x15-inch; 185HR
R	6x15-inch; 185HR

● (E series) ★ ★ ★ ★ ★
911T 1972



A lower compression ratio and the inclusion of Zenith 40 TIN triple-choke carburettors led to the relatively lower power output of 130bhp despite the new 2,341cc engine size.

Production numbers	16,933
Issue featured	107
Engine capacity	2,341cc
Compression ratio	7.5:1
Maximum power	130hp @ 5,600rpm
Maximum torque	197Nm @ 4,000rpm
0-62mph	7.6 sec
Top speed	128mph
Length	4,163mm
Width	1,610mm
Weight	1,077kg
Wheels & tyres	
F	5.5x15-inch; 165HR
R	5.5x15-inch; 165HR

▼ (E series) ★ ★ ★ ★ ★
911S 1972



A 2.4-litre engine increased torque. The mostly chrome brightwork had a black decklid grille with a '2.4' badge. External oil filler on right rear wing confused some.

Production numbers	5,054
Issue featured	120
Engine capacity	2,341cc
Compression ratio	8.5:1
Maximum power	190hp @ 6,500rpm
Maximum torque	211Nm @ 5,200rpm
0-62mph	6.6 sec
Top speed	140mph
Length	4,163mm
Width	1,610mm
Weight	1,077kg
Wheels & tyres	
F	5.5x15-inch; 185/70/R15
R	6x15-inch; 185/70/R15



▼ (F series) ★ ★ ★ ★ ★
Carrera 2.7 RS 1973
 The RS had a 2,687cc engine that developed 210bhp. The body was lightened and fitted with flared rear arches and an optional ducktail. Sport and Touring available.

Production numbers	1,590
Issue featured	145
Engine capacity	2,687cc
Compression ratio	8.5:1
Maximum power	210hp @ 6,300rpm
Maximum torque	255Nm @ 5,100rpm
0-62mph	5.8 sec
Top speed	152mph
Length	4,163mm
Width	1,652mm
Weight	975kg (Sport)
Wheels & tyres	
F	6x15-inch; 185/70/R15
R	7x15-inch; 215/60/R15

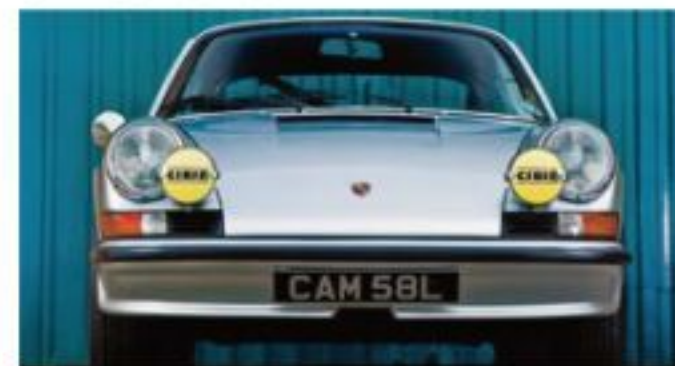
● (F series) ★ ★ ★ ★ ★
911E 1973



After incidents of people filling E series 911s with petrol via the external oil-filler, the filler returned to under the engine decklid. Fitted with the front spoiler of the 911S.

Production numbers	4,406
Issue featured	144
Engine capacity	2,341cc
Compression ratio	8.0:1
Maximum power	165hp @ 6,200rpm
Maximum torque	206Nm @ 4,500rpm
0-62mph	7.5 sec
Top speed	137mph
Length	4,163mm
Width	1,610mm
Weight	1,077kg
Wheels & tyres	
F	6x15-inch ATS; 185HR
R	6x15-inch ATS; 185HR

▼ (F series) ★ ★ ★ ★ ★
911S 1973



The 911S had the same upgrades as the 911E, including deletion of the external oil filler. It also adopted black trim around the front and rear lights and black front quarter grilles.

Production numbers	5,054
Issue featured	120
Engine capacity	2,341cc
Compression ratio	8.5:1
Maximum power	193hp @ 6,500rpm
Maximum torque	211Nm @ 5,200rpm
0-62mph	6.6 sec
Top speed	140mph
Length	4,163mm
Width	1,610mm
Weight	1,075kg
Wheels & tyres	
F	6x15-inch; 185/70/R15
R	6x15-inch; 185/70/R15

● (G, H, I, J series) ★ ★ ★ ★ ★
911 1974-1977



'911' was now the entry level. Bumpers were added to conform to US regs. From 1976, all 911s were hot-dip coated and fitted with 'elephant ear' mirrors.

Production numbers	9,320
Issue featured	121
Engine capacity	2,687cc
Compression ratio	8.0:1
Maximum power	150hp @ 5,700rpm (165bhp from '76)
Maximum torque	235Nm @ 3,800rpm (4,000 from '76)
0-62mph	8.5 sec
Top speed	130mph
Length	4,291mm
Width	1,610mm
Weight	1,075kg
Wheels & tyres	F&R 6x15-inch; 185VR

● (G, H, I, J series) ★ ★ ★ ★ ★
911S 1974-1977



911S was now a mid-range model comparable to the previous 911E. It had the same body changes as the base model, and came as standard with 'Cookie Cutter' rims.

Production numbers	17,124
Issue featured	n/a
Engine capacity	2,687cc
Compression ratio	8.5:1
Maximum power	173hp @ 5,800rpm
Maximum torque	235Nm @ 4,000rpm
0-62mph	7.0 sec
Top speed	142mph
Length	4,291mm
Width	1,610mm
Weight	1,080kg
Wheels & tyres	
F	6x15-inch; 185VR
R	6x15-inch; 185VR

● (G & H series) ★ ★ ★ ★ ★
911 Carrera 2.7 1974-1976



From 1974, Carrera name was given to range-topping 911. Essentially the same engine as previous year's RS for all markets except USA. Whaletail available from 1975.

Production numbers	1,667
Issue featured	134
Engine capacity	2,687cc
Compression ratio	8.5:1
Maximum power	210hp @ 6,300rpm
Maximum torque	255Nm @ 5,100rpm
0-62mph	6.3 sec
Top speed	148mph
Length	4,291mm
Width	1,652mm
Weight	1,075kg
Wheels & tyres	
F	6x15-inch; 185VR
R	7x15-inch; 205VR

● (I & J series) ★ ★ ★ ★ ★
911 Carrera 3.0 1976-1977



Not sold in the US, the Carrera 3.0 was basically the same model as the previous Carrera, only fitted with a new 2,994cc engine, essentially from the 911 Turbo.

Production numbers	3,687
Issue featured	148
Engine capacity	2,994cc
Compression ratio	8.5:1
Maximum power	197hp @ 6,000rpm
Maximum torque	255Nm @ 4,200rpm
0-62mph	6.3 sec
Top speed	145mph
Length	4,291mm
Width	1,610mm
Weight	1,093kg
Wheels & tyres	
F	6x15-inch; 185/70/VR15
R	7x15-inch; 215/60/VR15

● ★ ★ ★ ★ ★
930 3.0 1975-1977



Fitted with a KKK turbo, this was the world's first production Porsche to be turbocharged. Flared arches, whaletail rear wing and four-speed gearbox were standard.

Production numbers	2,850
Issue featured	157
Engine capacity	2,994cc
Compression ratio	6.5:1
Maximum power	260hp @ 5,500rpm
Maximum torque	343Nm @ 4,000rpm
0-62mph	5.5 sec
Top speed	155mph
Length	4,291mm
Width	1,775mm
Weight	1,140kg
Wheels & tyres	
F	7x15-inch; 185/70/VR15
R	8x15-inch; 215/60/VR15

▼ ★ ★ ★ ★ ★
930 3.3 1978-1983
 Larger engine resulted in extra 40bhp, and an intercooler on top of the engine led to the adoption of a 'teatray'. Brakes were upgraded from 917 racer.

Production numbers	5,807 (plus '78 to '79 Cali cars)
Issue featured	116
Engine capacity	3,299cc
Compression ratio	7.0:1
Maximum power	300hp @ 5,500rpm
Maximum torque	412Nm @ 4,000rpm
0-62mph	5.4 sec
Top speed	160mph
Length	4,291mm
Width	1,775mm
Weight	1,300kg
Wheels & tyres	F 7x16-inch; 205/55/VR16
R	8x16-inch; 225/50/VR16



▼ ★ ★ ★ ★ ★
930 3.3 1984-1989
 Revised engine added power and torque in 1984, while in 1987 Motronic engine management improved efficiency and emissions upon its return to the US market.

Production numbers	11,135
Issue featured	144
Engine capacity	3,299cc
Compression ratio	7.0:1
Max power	300hp @ 5,500rpm
Max torque	432Nm @ 4,000rpm
0-62mph	5.4 sec
Top speed	161mph
Length	4,291mm
Width	1,775mm
Weight	1,300kg (1,335kg from '86)
Wheels & tyres	F 7x16-inch; 205/55/VR16
R	8x16-inch; 225/50/VR16



● ★ ★ ★ ★ ★
Carrera 3.2 1984-1989
 Almost the same galvanised body as the SC. Engine was claimed to be 80 per cent new, and the first production 911 to feature an ECU to control ignition and fuel systems.

Production numbers	70,044
Issue featured	148
Engine capacity	3,164cc
Compression ratio	10.3:1
Maximum power	231hp @ 5,900rpm
Maximum torque	284Nm @ 4,800rpm
0-62mph	5.6 sec
Top speed	152mph
Length	4,291mm
Width	1,652mm
Weight	1,210kg
Wheels & tyres	
F	7x15-inch; 195/65/VR15
R	8x15-inch; 215/60/VR15 (16" for '89)

● ★ ★ ★ ★ ★
930 SE 1986-1989



Slantnosed and based on 935 race cars, with pop-up headlamps. Front spoiler made deeper to accommodate extra oil cooler, rear intakes fed air to brakes.

Production numbers	50 (UK only)
Issue featured	146
Engine capacity	3,299cc
Compression ratio	7.0:1
Maximum power	330hp @ 5,500rpm
Maximum torque	432Nm @ 4,000rpm
0-62mph	4.6 sec
Top speed	173mph
Length	4,291mm
Width	1,775mm
Weight	1,335kg
Wheels & tyres	
F	7x16-inch; 205/55/VR16
R	9x16-inch; 245/45/VR16

● ★ ★ ★ ★ ★
959 1986-1988



Had tech later used on 911s including 4WD, ABS and twin turbos. A 959S was also available, featuring lighter cloth Sport seats, five-point harnesses and a roll cage.

Production numbers	337
Issue featured	142
Engine capacity	2,850cc
Compression ratio	8.3:1
Max power	450hp @ 6,500rpm
Max torque	500Nm @ 5,000rpm
0-60mph	3.9 sec
Top speed	196mph
Length	4,260mm



3.2 Clubsport 1987-1989

Removing 'luxuries' sliced off around 40kg of weight. Revised engine management gave a higher rev limit of 6,840rpm. Suspension upgraded and LSD standard.

Production numbers	340
Issue featured	126
Engine capacity	3,164cc
Compression ratio	10.3:1
Maximum power	231hp @ 5,900rpm
Maximum torque	284Nm @ 4,800rpm
0-62mph	5.1 sec
Top speed	152mph
Length	4,291mm
Width	1,650mm
Weight	1,160kg
Wheels & tyres	
F	6x16-inch, 205/55/VR16
R	7x16-inch, 225/55/VR16



930 LE 1989

Essentially an SE but without a slantnose front, the LE had the same engine, front spoiler, sill extensions and rear air intakes. One made for every OPC of the time.

Production numbers	50
Issue featured	110
Engine capacity	3,299cc
Compression ratio	70:1
Maximum power	330hp @ 5,500rpm
Maximum torque	432Nm @ 4,000rpm
0-62mph	4.6 sec
Top speed	173mph
Length	4,291mm
Width	1,775mm
Weight	1,335kg
Wheels & tyres	
F	7x16-inch, 205/55/VR16
R	9x16-inch, 245/45/VR16

964 Carrera 4 1989-1993



Heavily revised bodywork, deformable bumpers over coil-spring suspension and four-wheel-drive marked this radical overhaul of the '87 per cent new' 911.

Production numbers	13,353 (Coupe)
Issue featured	111
Engine capacity	3,600cc
Compression ratio	11.3:1
Maximum power	250hp @ 6,100rpm
Maximum torque	310Nm @ 4,800rpm
0-62mph	5.7 sec
Top speed	162mph
Length	4,250mm
Width	1,652mm
Weight	1,450kg
Wheels & tyres	
F	6x16-inch, 205/55/ZR16
R	8x16-inch, 225/50/ZR16



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964 Carrera 2 1990-1993

Rear-drive Carrera 2 offered an emphatically more traditional 911 experience, and was 100kg lighter, but looked identical to the Carrera 4. Tiptronic was a new option.

Production numbers	19,484
Issue featured	119
Engine capacity	3,600cc
Compression ratio	11.3:1
Maximum power	250hp @ 6,100rpm
Maximum torque	310Nm @ 4,800rpm
0-62mph	5.6 sec
Top speed	162mph
Length	4,250mm
Width	1,652mm
Weight	1,350kg
Wheels & tyres	
F	6x16-inch, 205/55/ZR16
R	8x16-inch, 225/50/ZR16



964 3.8 RS 1993

Identifiable by lightweight Turbo bodyshell, large rear wing and 18-inch Speedline wheels. Power came from a new 3.8-litre unit with hot-film air sensor and twin exhaust.

Production numbers	55
Issue featured	12
Engine capacity	3,746cc
Compression ratio	11.6:1
Maximum power	300hp @ 6,500rpm
Maximum torque	359Nm @ 5,250rpm
0-62mph	4.9 sec
Top speed	169mph
Length	4,250mm
Width	1,775mm
Weight	1,210kg
Wheels & tyres	
F	9x18-inch, 205/50/ZR18
R	11x18-inch, 285/35/ZR18

964 Anniversary 1993-94



'30 Jahre' anniversary 964 utilised a 'Turbo' wide body melded to the four-wheel-drive Carrera running gear. Available in Viola metallic, Polar silver or Amethyst.

Production numbers	911
Issue featured	112
Engine capacity	3,600cc
Compression ratio	11.3:1
Maximum power	250hp @ 6,100rpm
Maximum torque	310Nm @ 4,800rpm
0-62mph	5.7 sec
Top speed	162mph
Length	4,250mm
Width	1,775mm
Weight	1,470kg
Wheels & tyres	
F	7x17-inch, 205/50/17
R	9x17-inch, 255/40/17



964 RS America 1993

Offered in five colours, fixed whaletail wing and two cloth sports seats, with just four options: air-con, sunroof, 90 per cent locking rear differential and stereo.

Production numbers	701
Issue featured	157
Engine capacity	3,600cc
Compression ratio	11.3:1
Maximum power	250hp @ 6,100rpm
Maximum torque	310Nm @ 4,800rpm
0-62mph	5.5 sec
Top speed	164mph
Length	4,250mm
Width	1,650mm
Weight	1,340kg
Wheels & tyres	
F	7x17-inch, 205/50/ZR17
R	8x17-inch, 255/40/ZR17



964 C2 Speedster 93-94

Combined the 964 bodyshell with the hood and windscreen of the Carrera 3.2 Speedster, plus RS interior. It is thought Porsche planned to build 3,000, but demand fell.

Production numbers	936
Issue featured	128
Engine capacity	3,600cc
Compression ratio	11.3:1
Maximum power	250hp @ 6,100rpm
Maximum torque	310Nm @ 4,800rpm
0-62mph	5.5 sec
Top speed	161mph
Length	4,250mm
Width	1,652mm
Weight	1,340kg
Wheels & tyres	
F	7x17-inch, 205/50/ZR17
R	9x17-inch, 255/40/ZR17

993 Carrera RS 1995-1996



Lightweight body as per RS tradition, teamed with a 3.8-litre engine, VarioRam intake system and remapped ECU to create 300bhp, fed to the rear wheels only.

Production numbers	1,014
Issue featured	119
Engine capacity	3,746cc
Compression ratio	11.5:1
Maximum power	300hp @ 6,000rpm
Maximum torque	355Nm @ 5,400rpm
0-62mph	5.0 sec
Top speed	172mph
Length	4,245mm
Width	1,735mm
Weight	1,279kg
Wheels & tyres	
F	8x18-inch, 225/40ZR18
R	10x18-inch, 265/35ZR18



993 Carrera 4S 1995-1996

The 4S was effectively a Carrera 4 with a Turbo wide bodyshell, albeit lacking a fixed rear wing. Also boasted Turbo suspension, brakes and Turbo-look wheels.

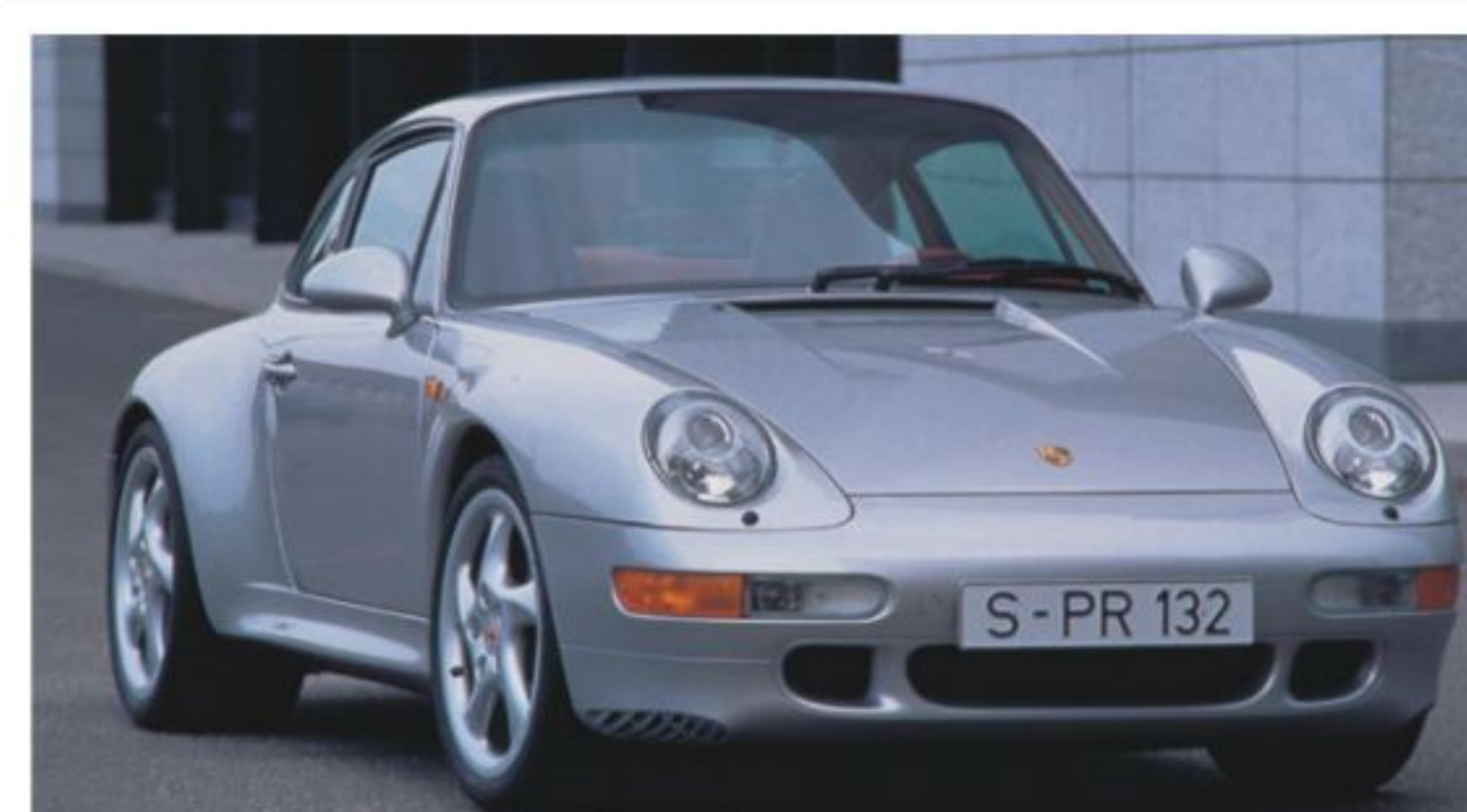
Production numbers	6,948
Issue featured	109
Engine capacity	3,600cc
Compression ratio	11.3:1
Maximum power	285hp @ 6,100rpm
Maximum torque	340Nm @ 5,250rpm
0-62mph	5.3 sec
Top speed	168mph
Length	4,245mm
Width	1,795mm
Weight	1,520kg
Wheels & tyres	
F	8x18-inch, 225/40/ZR18
R	10x18-inch, 285/30/ZR18



993 Turbo 1996-1998

Fitted with two KKK turbochargers in order to reduce lag. Power went to all four wheels using the Carrera 4's transmission system. Brakes were 'Big Reds'.

Production numbers	5,937
Issue featured	147
Engine capacity	3,600cc
Compression ratio	8.0:1
Maximum power	408hp @ 5,750rpm
Maximum torque	540Nm @ 4,500rpm
0-62mph	4.3 sec
Top speed	180mph
Length	4,245mm
Width	1,795mm
Weight	1,500kg
Wheels & tyres	
F	8x18-inch, 225/40/ZR18
R	10x18-inch, 285/30/ZR18



993 Carrera S 1997-1998

The features that come with the Carrera S are similar to the Carrera 4S's, only this time in rear-wheel drive. Sought after for its superb handling and wide-body looks.

Production numbers	3,714
Issue featured	118
Engine capacity	3,600cc
Compression ratio	11.3:1
Maximum power	285hp @ 6,100rpm
Maximum torque	340Nm @ 5,250rpm
0-62mph	5.4 sec
Top speed	168mph
Length	4,245mm
Width	1,795mm
Weight	1,450kg
Wheels & tyres	
F	8x18-inch, 225/40/ZR18
R	10x18-inch, 285/30/ZR18

996 Turbo 2001-2005



Distinguished by wide rear arches, air intakes and deep front wing, plus part-fixed, part-retractable rear wing. Different engine to 3.6-litre 996 unit.

Production numbers	20,499
Issue featured	152
Engine capacity	3,600cc
Compression ratio	9.4:1
Maximum power	420hp @ 6,000rpm
Maximum torque	560Nm @ 2,700-4,600rpm
0-62mph	4.2 sec
Top speed	189mph
Length	4,435mm
Width	1,830mm
Weight	1,540kg
Wheels & tyres	
F	8x18-inch, 225/40/R18
R	11x18-inch, 295/30/R18



996 Carrera 4S 2001-2005

Basically a C4 featuring a Turbo bodyshell, without rear air intakes, but with a full-width rear reflector panel. Suspension and brakes were similar to the Turbo spec.

Production numbers	23,055
Issue featured	155
Engine capacity	3,596cc
Compression ratio	11.3:1
Maximum power	320hp @ 6,800rpm
Maximum torque	370Nm @ 4,250rpm
0-62mph	5.1 sec
Top speed	174mph
Length	4,435mm
Width	1,830mm
Weight	1,495kg
Wheels & tyres	
F	8x18-inch, 225/40/R18
R	11x18-inch, 295/30/R18



996 GT2 2001-2003

A lightweight, Turbo-bodied 996 with uprated turbocharged engine and suspension. PCCB was standard. Revised ECU later gave an extra 21bhp.

Production numbers	1,287
Issue featured	127
Engine capacity	3,600cc
Compression ratio	9.4:1
Maximum power	462hp @ 5,700rpm
Maximum torque	620Nm @ 3,500-4,500rpm
0-62mph	4.1 sec
Top speed	196mph
Length	4,450mm
Width	1,830mm
Weight	1,440kg
Wheels & tyres	
F	8x18-inch, 235/40/R18
R	12x18-inch, 315/30/R18



996.2 C2 2002-2004

Facelifted with Turbo-style headlamps and revised front and rear bumpers, fitted with more powerful 3.6-litre engine and VarioCam Plus. Manual and Tiptronic 'boxes updated.

Production numbers	29,389
Issue featured	136
Engine capacity	3,596cc
Compression ratio	11.3:1
Maximum power	320hp @ 6,800rpm
Maximum torque	370Nm @ 4,250rpm
0-62mph	5.0 sec
Top speed	177mph
Length	4,430mm
Width	1,770mm
Weight	1,370kg
Wheels & tyres	
F	7x17-inch, 205/50/R17
R	9x17-inch, 255/40/R17



964 C4 Lightweight 1991

964 Leichtbau made use of surplus parts from 953 Paris-Dakar project. Highlights include four-way adjustable differential, short-ratio gearbox and stripped interior.

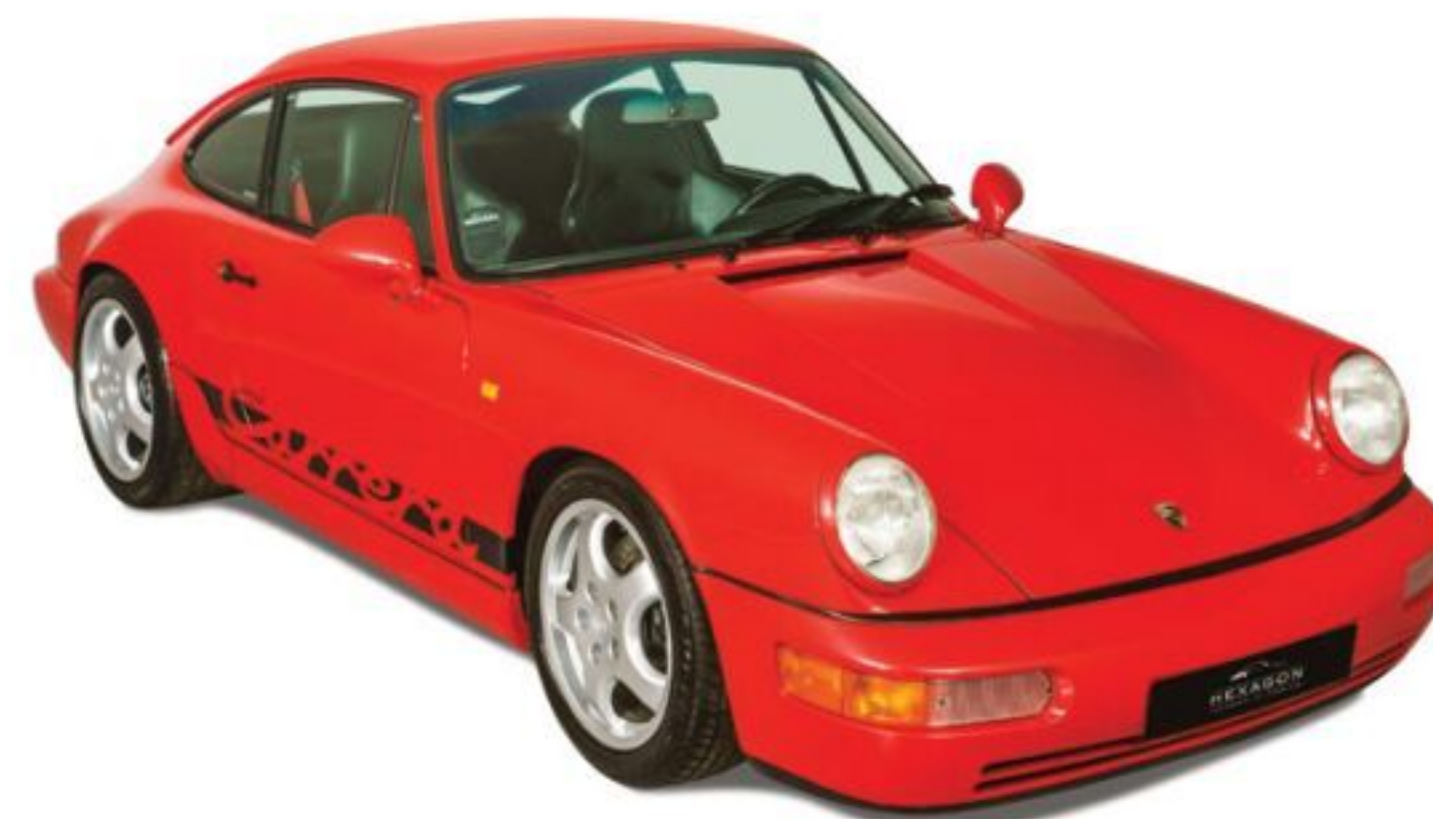
Production numbers	22
Issue featured	131
Engine capacity	3,600cc
Compression ratio	11.3:1
Maximum power	265hp @ 6,720rpm
Maximum torque	304Nm @ 6,720rpm
0-62mph	4.5 sec
Top speed	125mph
Length	4,275mm
Width	1,652mm
Weight	1,100kg
Wheels & tyres	
F	7x16-inch; 205/55/ZR16
R	9x16-inch; 245/55/ZR16



964 Turbo 1991-1992

This used the revised 964 bodysell, extended arches and 'teatray' wing. The engine was essentially the 3.3-litre unit from the previous model, but updated.

Production numbers	3,660
Issue featured	160
Engine capacity	3,299cc
Compression ratio	70:1
Maximum power	320hp @ 5,750rpm
Maximum torque	450Nm @ 4,500rpm
0-62mph	5.4 sec
Top speed	168mph
Length	4,250mm
Width	1,775mm
Weight	1,470kg
Wheels & tyres	
F	7x17-inch; 205/50/ZR17
R	9x17-inch; 255/40/ZR17



964 RS 1991-1992

120kg saved by deleting 'luxuries' and fitting magnesium Cup wheels. Power was boosted by 10bhp, suspension lowered by 40mm and updated, as were brakes.

Production numbers	2,405
Issue featured	131
Engine capacity	3,600cc
Compression ratio	11.3:1
Maximum power	260hp @ 6,100rpm
Maximum torque	310Nm @ 4,800rpm
0-62mph	5.4 sec
Top speed	162mph
Length	4,250mm
Width	1,650mm
Weight	1,230kg (Sport)
Wheels & tyres	
F	7.5x17-inch; 205/50/ZR17
R	9x17-inch; 255/40/ZR17

964 Turbo S 1992-1993



180kg lighter than Turbo. Intakes in the rear arches funnelled air to the brakes, while the engine power was boosted by 61bhp. RS-spec uprated suspension.

Production numbers	81
Issue featured	108
Engine capacity	3,299cc
Compression ratio	70:1
Maximum power	381hp @ 6,000rpm
Maximum torque	490Nm @ 4,800rpm
0-62mph	4.6 sec
Top speed	180mph
Length	4,250mm
Width	1,775mm
Weight	1,290kg
Wheels & tyres	
F	8x18-inch; 225/40/ZR18
R	10x18-inch; 265/35/ZR18



964 Turbo 3.6 1993-1994

Engine based on modified 3.6-litre 964 unit. Distinctive 18-inch split-rim Speedline wheels covered the Big Red brake calipers. Suspension lowered by 20mm.

Production numbers	1,437
Issue featured	120
Engine capacity	3,600cc
Compression ratio	75:1
Maximum power	360hp @ 5,500rpm
Maximum torque	520Nm @ 4,200rpm
0-62mph	4.8 sec
Top speed	174mph
Length	4,250mm
Width	1,775mm
Weight	1,470kg
Wheels & tyres	
F	8x18-inch; 225/40/ZR18
R	10x18-inch; 265/35/ZR18



Restyled bodywork had swept-back headlamps, curvaceous wings and blended-in bumpers. The 3,600cc engine was revised, with VarioRam available from 1996.

Production numbers	38,626
Issue featured	160
Engine capacity	3,600cc
Compression ratio	11.3:1
Maximum power	272hp @ 6,000rpm
Maximum torque	330Nm @ 5,000rpm
0-62mph	5.6 sec
Top speed	168mph
Length	4,245mm
Width	1,735mm
Weight	1,370kg
Wheels & tyres	
F	7x16-inch; 205/55/ZR16
R	9x16-inch; 245/45/ZR16



993 Carrera 4 1994-1997

As per the 993-model Carrera, but with four-wheel-drive. Transmission was half the weight of the previous Carrera 4, and was designed to give a more rear-drive feel.

Production numbers	2,884 (Coupe)
Issue featured	111
Engine capacity	3,600cc
Compression ratio	11.3:1
Maximum power	272hp @ 6,000rpm
Maximum torque	330Nm @ 5,000rpm
0-62mph	5.8 sec
Top speed	166mph
Length	4,245mm
Width	1,735mm
Weight	1,420kg
Wheels & tyres	
F	7x16-inch; 205/55/ZR16
R	9x16-inch; 245/45/ZR16



993 GT2 1995-1996

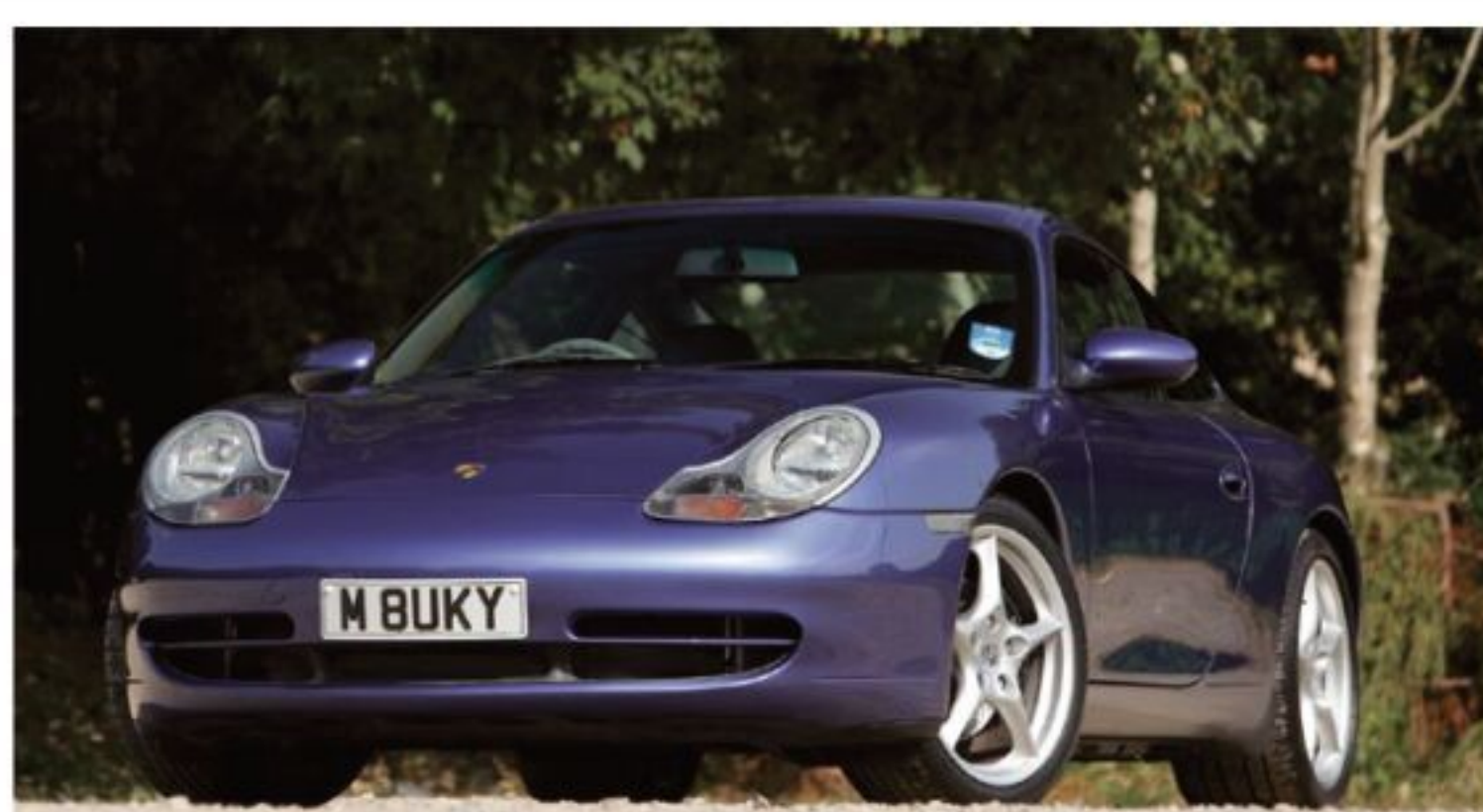
911 Turbo, but with reduced equipment. Also included rear-wheel-drive, making it a better track car. Fitted with huge front and rear wings and bolt-on arch extensions.

Production numbers	173
Issue featured	131
Engine capacity	3,600cc
Compression ratio	80:1
Maximum power	430hp @ 5,750rpm
Maximum torque	540Nm @ 4,500rpm
0-62mph	3.9 sec
Top speed	189mph
Length	4,245mm
Width	1,855mm
Weight	1,290kg
Wheels & tyres	
F	9x18-inch; 225/40/ZR18
R	11x18-inch; 285/35/ZR18



The final hurrah for the last air-cooled 911. With 450bhp for UK models, it was the fastest and most luxurious road-going model Stuttgart had ever produced. Manual only.

Production numbers	346
Issue featured	115
Engine capacity	3,600cc
Compression ratio	80:1
Maximum power	450hp @ 5,750rpm
Maximum torque	585Nm @ 4,500rpm
0-62mph	4.1 sec
Top speed	186mph
Length	4,245mm
Width	1,795mm
Weight	1,583kg
Wheels & tyres	
F	8x18-inch; 225/40/R18
R	10x18-inch; 285/30/R18



996.1 Carrera 1998-2001

An all-new 911 with larger, restyled bodywork and a water-cooled engine. Interior was redesigned in order to enable better ergonomic efficiency and more room.

Production numbers	56,733
Issue featured	160
Engine capacity	3,387cc
Compression ratio	11.3:1
Maximum power	300hp @ 6,800rpm
Maximum torque	350Nm @ 4,600rpm
0-62mph	5.2 sec
Top speed	174mph
Length	4,430mm
Width	1,765mm
Weight	1,320kg
Wheels & tyres	
F	7x17-inch; 205/50/R17
R	9x17-inch; 255/40/R17



996.1 C4 1998-2001

Four-wheel drive transmission fed five per cent of power in normal driving, increasing to 40 per cent when required. PSM used for first time, rolled out across the range in 2001.

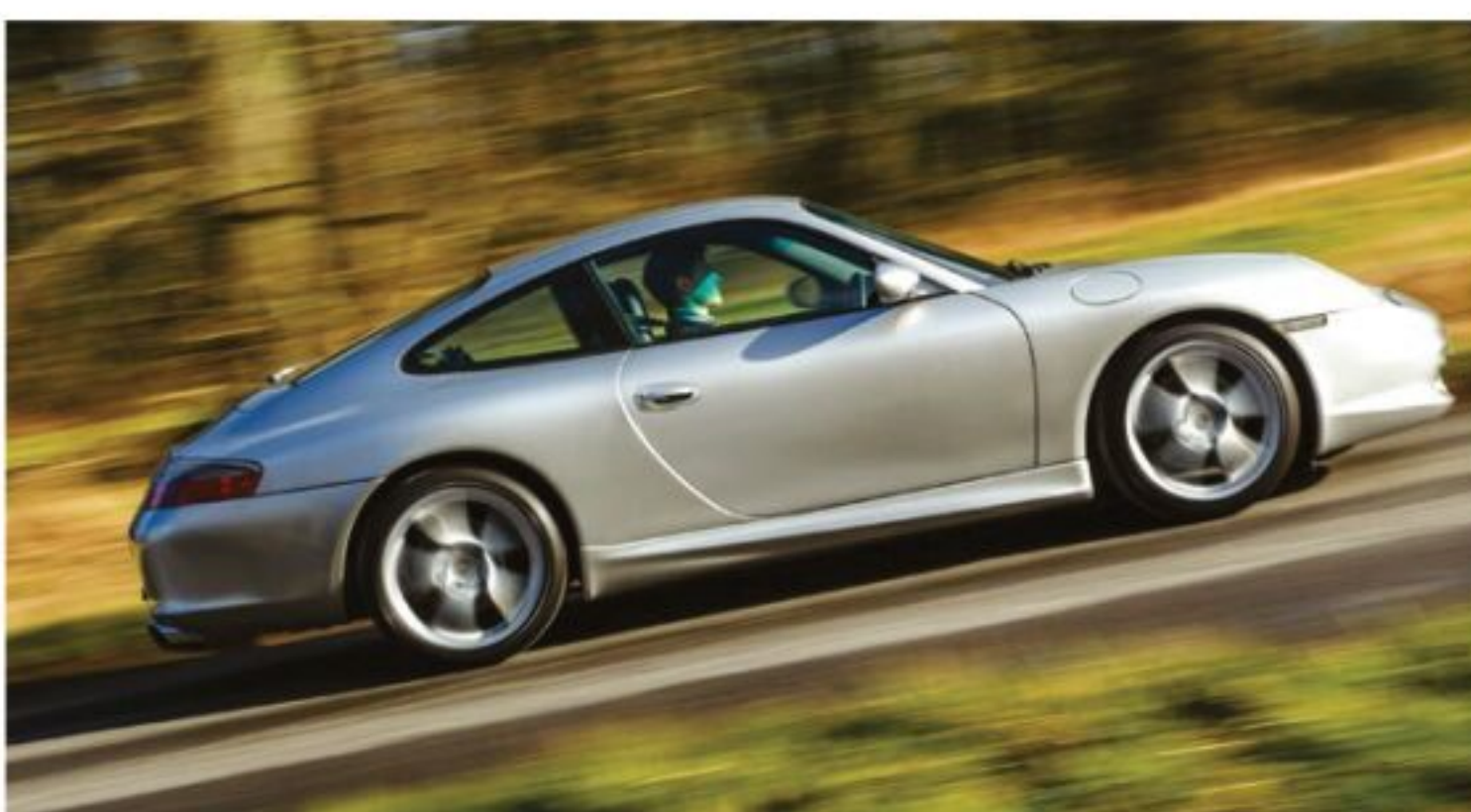
Production numbers	22,054
Issue featured	111
Engine capacity	3,387cc
Compression ratio	11.3:1
Maximum power	300hp @ 6,800rpm
Maximum torque	350Nm @ 4,600rpm
0-62mph	5.2 sec
Top speed	174mph
Length	4,430mm
Width	1,765mm
Weight	1,375kg
Wheels & tyres	
F	7x17-inch; 205/50/R17
R	9x17-inch; 255/40/R17



996.1 GT3 1998-2000

Commonly called the Gen1 GT3, this was a lightweight 996 with power driving the rear wheels. Suspension was lowered by 30mm and brakes were uprated.

Production numbers	1,886
Issue featured	117
Engine capacity	3,600cc
Compression ratio	11.7:1
Maximum power	360hp @ 7,200rpm
Maximum torque	370Nm @ 5,000rpm
0-62mph	4.8 sec
Top speed	188mph
Length	4,430mm
Width	1,765mm
Weight	1,350kg
Wheels & tyres	
F	8x18-inch; 225/40/R18
R	10x18-inch; 285/30/R18



996.2 C4 2002-2004

Facelifted in line with rear-drive Carrera, though the all-wheel-drive version drives very much like its rear-driven brethren. Cabin received minor updates over Gen1.

Production numbers	10,386
Issue featured	107
Engine capacity	3,596cc
Compression ratio	11.3:1
Maximum power	320hp @ 6,800rpm
Maximum torque	370Nm @ 4,250rpm
0-62mph	5.0 sec
Top speed	177mph
Length	4,430mm
Width	1,770mm
Weight	1,430kg
Wheels & tyres	
F	7x17-inch; 205/50/R17
R	9x17-inch; 255/40/R17



Available in GT silver, and included a Turbo front bumper and chrome Carrera wheels. Powerkit, -10mm sports suspension and mechanical LSD standard.

Production numbers	1,963
Issue featured	112
Engine capacity	3,596cc
Compression ratio	11.3:1
Maximum power	345hp @ 6,800rpm
Maximum torque	370Nm @ 4,800rpm
0-62mph	4.9 sec
Top speed	175mph
Length	4,430mm
Width	1,770mm
Weight	1,370kg
Wheels & tyres	
F	8x18-inch; 225/40/R18
R	10x18-inch; 285/30/R18



996.2 GT3 2003-2005

Based on facelifted 996 Carrera, but with new wings. Suspension lowered and uprated, PCCB optional. Full-spec interior unless Clubsport option was ordered.

Production numbers	2,313
Issue featured	142
Engine capacity	3,600cc
Compression ratio	11.7:1
Maximum power	381hp @ 7,400rpm
Maximum torque	385Nm @ 5,000rpm
0-62mph	4.5 sec
Top speed	190mph
Length	4,435mm
Width	1,770mm
Weight	1,380kg
Wheels & tyres	
F	8.5x18-inch; 235/40/R18
R	11x18-inch; 295/30/R18



996 GT3 RS 2004-2005

Same 3,600cc engine as in GT3, but with weight saving, offering 280bhp per ton – an improvement of four per cent over the 996 GT3 Clubsport. PCCB optional.

Production numbers	682
Issue featured	161
Engine capacity	3,600cc
Compression ratio	11.7:1
Maximum power	381hp @ 7,400rpm
Maximum torque	385Nm @ 5,000rpm
0-62mph	4.4 sec
Top speed	190mph
Length	4,435mm
Width	1,770mm
Weight	1,360kg
Wheels & tyres	
F	8.5x18-inch; 235/40/R18
R	11x18-inch; 295/30/R18

Sales debate

Is demand for a manual 911 dying out?



It's no secret that, in terms of sales of new 911s, PDK is king. For the 991 generation, sales of PDK versus manual transmission are recorded as 90%/10% in favour of PDK. Even driver-focused cars such as the GT3 are recorded as being a 50/50 split between manual and dual-clutch automatic, with only the Carrera T being the real champion of stick shift, with two thirds of buyers opting to change gear themselves. So is our lust for a 911 with manual transmission dying out?

"It depends completely on the model and the lifestyle of the buyer," says Karl Meyer at Porsche buying specialists 2911. "A lot of people use their 991 as a daily driver, in which case PDK is preferred. It's quick, intelligent and, when you want it to be, engaging for sporty driving. For the more special cars such as the 991.2 GT3, manuals are sought after, but they don't particularly command a premium over PDK-equipped cars," he says.

Anthony Pozner at Hendon Way Motors largely echoes Meyer's sentiments for the newer 911s where automatic 'boxes came with PDK rather than Tiptronic technology. "It's just a superb gearbox," he tells us. But Pozner points out that while many enthusiasts are happy to purchase a 991 with PDK, purists are buying the older 911s, which is where the manual reigns supreme. "Anything automatic prior to the 997.2 generation, where Porsche used a Tiptronic rather than PDK gearbox, commands less money than a manual equivalent," he points out. "You must also consider that the air-cooled cars, in particular the 964, continue to increase in value, which shows that the market for a Porsche with manual transmission is strong – perhaps stronger than ever. That demand is certainly not dying out and I can't foresee a scenario in which it's likely to."

It's the news we wanted to hear: enthusiasts' thirst for a 911 with stick shift is alive and well, particularly for older cars. An automatic gearbox might be more prevalent in newer 911s, which makes us worry if Porsche will feel the need to keep producing a manual equivalent, but this is likely down to lifestyle choices (read busy roads!) rather than a disdain for having to swap gears under our own steam. Long live the manuals!



996 Turbo S 2004-2005

A 911 Turbo with the previously optional 30bhp power upgrade, with larger turbochargers, uprated intercoolers and a revised ECU. PCCB standard.

Production numbers	1,563
Issue featured	132
Engine capacity	3,600cc
Compression ratio	9.4:1
Maximum power	450hp @ 5,700rpm
Maximum torque	620Nm @ 3,500-4,500rpm
0-60mph	4.2 sec
Top speed	191mph
Length	4,291mm
Width	1,830mm
Weight	1,590kg
Wheels & tyres	F 8x18-inch; 225/40/R18
	R 11x18-inch; 295/30/R18

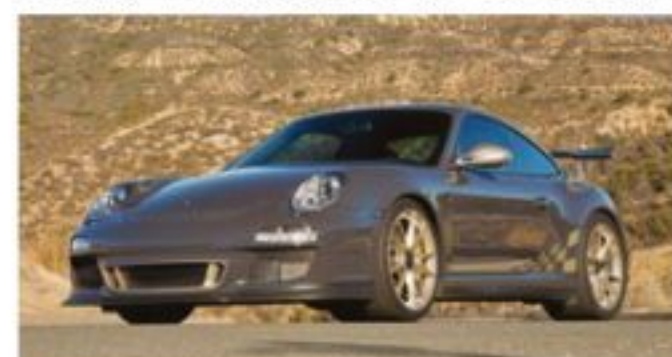


997.1 GT3 RS 2006-2007

Similar to GT3, with wider rear bodyshell of the Carrera S. 20kg of weight saved from GT3 thanks to carbon engine cover and rear wing, and plastic rear window.

Production numbers	1,106
Issue featured	156
Engine capacity	3,600cc
Compression ratio	12.0:1
Maximum power	415hp @ 7,600rpm
Maximum torque	405Nm @ 5,500rpm
0-62mph	4.2 sec
Top speed	194mph
Length	4,460mm
Width	1,808mm
Weight	1,375kg
Wheels & tyres	F 8.5x19-inch; 235/35/ZR19
	R 12x19-inch; 305/30/ZR19

997.2 GT3 RS 2009-2012



Wider front arches and a larger wing. Dynamic engine mounts and PASM are standard. Air-con is optional, with no door handles, wheel brace or sound proofing.

Production numbers	1,500
Issue featured	125
Engine capacity	3,800cc
Compression ratio	12.2:1
Maximum power	450hp @ 7,900rpm
Maximum torque	430Nm @ 6,750rpm
0-62mph	4.0 sec
Top speed	192mph
Length	4,460mm
Width	1,852mm
Weight	1,370kg
Wheels & tyres	F 9x19-inch; 245/35/ZR19
	R 12x19-inch; 325/30/ZR19



997 Speedster 2010

Built to mark Porsche Exclusive's 25th year. Shorter windscreen, but rake angle same as 997 Carrera. Wide body with 19-inch Fuchs wheels. Rear-wheel drive.

Production numbers	356
Issue featured	128
Engine capacity	3,800cc
Compression ratio	12.5:1
Maximum power	408hp @ 7,300rpm
Maximum torque	420Nm @ 4,400-5,600rpm
0-62mph	4.4 sec
Top speed	190mph
Length	4,440mm
Width	1,852mm
Weight	1,540kg
Wheels & tyres	F 8.5x19-inch; 235/35/ZR19
	R 11x19-inch; 305/30/ZR19



997 Turbo S 2011-2013

A standard 997 Turbo but more power and higher level of standard equipment including PCCB, centre-lock wheels, crested sports seats and Sport Chrono Plus.

Production numbers	2,000
Issue featured	123
Engine capacity	3,800cc
Compression ratio	9.8:1
Maximum power	530hp @ 6,250-6,750rpm
Maximum torque	700Nm @ 2,100-4,250rpm
0-62mph	3.3 sec
Top speed	195mph
Length	4,435mm
Width	1,852mm
Weight	1,585kg
Wheels & tyres	F 8.5x19-inch; 235/35/ZR19
	R 11x19-inch; 305/30/ZR19



997.1 Carrera 2004-2008

Fully revised Porsche 911 with 993-influenced bodywork and a new interior. Engine was like 996, but refined for more power. Six-speed Tiptronic option available.

Production numbers	25,788
Issue featured	112
Engine capacity	3,596cc
Compression ratio	11.3:1
Maximum power	325hp @ 6,800rpm
Maximum torque	370Nm @ 4,250rpm
0-62mph	5.0 sec
Top speed	177mph
Length	4,427mm
Width	1,808mm
Weight	1,395kg
Wheels & tyres	F 8x18-inch; 235/40/R18
	R 10x18-inch; 265/40/R18



997 GT2 2007-2009

Essentially a 997 Turbo but with rear-wheel drive only. Had a more track-orientated suspension and brake setup, with GT3-style interior and extra power.

Production numbers	1,242
Issue featured	127
Engine capacity	3,600cc
Compression ratio	9.0:1
Maximum power	530hp @ 6,500rpm
Maximum torque	680Nm @ 2,200-4,500rpm
0-62mph	3.7 sec
Top speed	204mph
Length	4,469mm
Width	1,852mm
Weight	1,440kg
Wheels & tyres	F 8.5x19-inch; 235/35/ZR19
	R 12x19-inch; 325/30/ZR19

997 Sport Classic 2010



Based on 3.8-litre Powerkit, rear-wheel-drive Carrera S, but with 44mm wider rear arches. Retro styling including iconic ducktail and large Fuchs wheels.

Production numbers	250
Issue featured	146
Engine capacity	3,800cc
Compression ratio	12.5:1
Maximum power	408hp @ 7,300rpm
Maximum torque	420Nm @ 4,200-5,600rpm
0-62mph	4.6 sec
Top speed	187mph
Length	4,435mm
Width	1,852mm
Weight	1,425kg
Wheels & tyres	F 8.5x19-inch; 235/35/ZR19
	R 11x19-inch; 305/30/ZR19



991.1 Carrera 2011-2015

The first of the newest and latest Gen7 911, it takes styling hues from the 993. A redesigned chassis with lengthened wheelbase reduces overhang of the engine.

Production numbers	Unknown
Issue featured	137
Engine capacity	3,436cc
Compression ratio	12.5:1
Maximum power	350hp @ 7,400rpm
Maximum torque	390Nm @ 5,600rpm
0-62mph	4.8 sec
Top speed	179.6mph
Length	4,491mm
Width	1,808mm
Weight	1,380kg
Wheels & tyres	F 8.5x19-inch; 235/40/ZR19
	R 11x19-inch; 285/35/ZR19



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997.1 Carrera S 2004-2008

As per the 997 Carrera, but with more powerful 3.8-litre engine and PASM. 19-inch wheels as standard, with bigger ventilated brakes. Featured quad exhaust tailpipes.

Production numbers	41,059
Issue featured	107
Engine capacity	3,824cc
Compression ratio	11.8:1
Maximum power	355hp @ 6,600rpm
Maximum torque	400Nm @ 4,600rpm
0-62mph	4.8 sec
Top speed	182mph
Length	4,427mm
Width	1,808mm
Weight	1,420kg
Wheels & tyres	
F	8x19-inch; 235/35/R19
R	11x19-inch; 295/30/R19



997.1 GT3 2006-2007

Track focused, but based on narrow-bodied Carrera with reworked 996 GT3 engine. PASM standard, revs to 8,400rpm, 200 higher than the Gen2 996 GT3.

Production numbers	2,378
Issue featured	117
Engine capacity	3,600cc
Compression ratio	12.0:1
Maximum power	415hp @ 7,600rpm
Maximum torque	405Nm @ 5,500rpm
0-62mph	4.3 sec
Top speed	192mph
Length	4,445mm
Width	1,808mm
Weight	1,395kg
Wheels & tyres	
F	8.5x19-inch; 235/35/R19
R	12x19-inch; 305/30/R19

997.1 Carrera 4 2005-08



Like the 997 Carrera, but with drive to all four wheels via a multi-disc viscous coupling, transferring between five and 40 per cent of traction to the front. 44mm wider at rear.

Production numbers	8,533
Issue featured	3
Engine capacity	3,596cc
Compression ratio	11.3:1
Maximum power	325hp @ 6,800rpm
Maximum torque	370Nm @ 4,250rpm
0-62mph	5.1 sec
Top speed	174mph
Length	4,427mm
Width	1,852mm
Weight	1,450kg
Wheels & tyres	
F	8x18-inch; 235/40/R18
R	11x18-inch; 295/35/R18

997.1 C4S 2005-2008



The same 3.8-litre, 355bhp engine as the Carrera S, with four-wheel-drive system on C4. 44mm wider than Carrera S to accommodate for wider rear wheels and tyres.

Production numbers	30,973
Issue featured	111
Engine capacity	3,824cc
Compression ratio	11.8:1
Maximum power	355hp @ 6,600rpm
Maximum torque	400Nm @ 4,600rpm
0-62mph	4.8 sec
Top speed	179mph
Length	4,427mm
Width	1,852mm
Weight	1,475kg
Wheels & tyres	
F	8x19-inch; 235/35/R19
R	11x19-inch; 305/30/R19

997.1 Turbo 2005-2008



Similar to 997 C4S body, but with extra intakes at the front and sides. Essentially the 996 Turbo engine, but with all-new twin turbos. VTG gave best of small/large turbos.

Production numbers	19,201
Issue featured	159
Engine capacity	3,600cc
Compression ratio	9.8:1
Maximum power	480hp @ 6,000rpm
Maximum torque	620Nm @ 1,950-5,000rpm
0-62mph	3.9 sec
Top speed	193mph
Length	4,450mm
Width	1,852mm
Weight	1,585kg
Wheels & tyres	
F	8.5x19-inch; 235/35/R19
R	11x19-inch; 305/30/R19



997.2 Carrera 2008-2012

Revised with restyled LED rear lights and front driving lights. M97 engine replaced with a 91 DFI unit, using fewer parts – with no problematic Intermediate Shaft.

Production numbers	10,500
Issue featured	144
Engine capacity	3,614cc
Compression ratio	12.5:1
Maximum power	345hp @ 6,500rpm
Maximum torque	390Nm @ 4,400rpm
0-62mph	4.9 sec
Top speed	179mph
Length	4,435mm
Width	1,808mm
Weight	1,415kg
Wheels & tyres	
F	8x18-inch; 235/40/ZR18
R	10.5x18-inch; 265/40/ZR18

997.2 Carrera S 2008-12



Altered as per the Carrera, but with larger 3.8-litre engine – again using fewer components and Direct Fuel Injection. Had seven-speed PDK optional, like the Carrera.

Production numbers	15,000
Issue featured	61
Engine capacity	3,800cc
Compression ratio	12.5:1
Maximum power	385hp @ 6,500rpm
Maximum torque	420Nm @ 4,400rpm
0-62mph	4.7 sec
Top speed	187mph
Length	4,435mm
Width	1,808mm
Weight	1,425kg
Wheels & tyres	
F	8x19-inch; 235/35/ZR19
R	11x19-inch; 295/30/ZR19



997.2 C4S 2008-2012

Body as per C4 but with larger engine. Utilised 997 Turbo's 4WD and PTM. Viscous coupling gives way to electromagnetically controlled multi-plate clutch.

Production numbers	7,910 (Coupe)
Issue featured	111
Engine capacity	3,800cc
Compression ratio	12.5:1
Maximum power	385hp @ 6,500rpm
Maximum torque	420Nm @ 4,400rpm
0-62mph	4.7 sec
Top speed	185mph
Length	4,435mm
Width	1,852mm
Weight	1,480kg
Wheels & tyres	
F	8x19-inch; 235/35/ZR19
R	11x19-inch; 305/30/ZR19

997.2 GT3 2009-2012



Updated as per the Carrera, but with a unique front and rear wing, revised PASM, centre-lock wheels and better brakes. 2010 MY GT3s recalled to fix rear hubs.

Production numbers	2,200
Issue featured	117
Engine capacity	3,797cc
Compression ratio	12.2:1
Maximum power	435hp @ 7,900rpm
Maximum torque	430Nm @ 6,250rpm
0-62mph	4.1 sec
Top speed	194mph
Length	4,460mm
Width	1,808mm
Weight	1,395kg
Wheels & tyres	
F	8.5x19-inch; 235/35/ZR19
R	12x19-inch; 305/30/ZR19

997.2 Turbo 2009-2013



Same as the original 997 Turbo but with new LED tail-lights and driver lights up front. Larger tailpipes and DFI engine, with fuel consumption cut by 16%.

Production numbers	3,800
Issue featured	152
Engine capacity	3,800cc
Compression ratio	9.8:1
Maximum power	500hp @ 6,000rpm
Maximum torque	650Nm @ 1,950-5,000rpm
0-62mph	3.4 sec
Top speed	194mph
Length	4,450mm
Width	1,852mm
Weight	1,570kg
Wheels & tyres	
F	8.5x19-inch; 235/35/ZR19
R	11x19-inch; 305/30/ZR19



997 GT3 RS 4.0 2010

Engine was upgraded and aerodynamically tweaked, with the angle of the rear wing increased and dive planes on either side of the front nose. A future collectors' gem.

Production numbers	600
Issue featured	125
Engine capacity	3,996cc
Compression ratio	12.6:1
Maximum power	500hp @ 8,250rpm
Maximum torque	460Nm @ 5,750rpm
0-62mph	3.9 sec
Top speed	193mph
Length	4,460mm
Width	1,852mm
Weight	1,360kg
Wheels & tyres	
F	9x19-inch; 245/35/ZR19
R	12x19-inch; 325/30/ZR19



997 918 Edition 2010

These exclusive 997 Turbo S-spec 911s were only available to those who had paid a deposit for a 918 Spyder. Acid green badging and brake calipers.

Production numbers	121
Issue featured	74
Engine capacity	3,800cc
Compression ratio	9.8:1
Maximum power	530hp @ 6,250-6,750rpm
Maximum torque	700Nm @ 2,100-4,250rpm
0-62mph	3.5 sec
Top speed	205mph
Length	4,460mm
Width	1,852mm
Weight	1,370kg
Wheels & tyres	
F	9x19-inch; 245/35/ZR19
R	12x19-inch; 325/30/ZR19

997 GT2 RS 2010-2011



GT2 went back to its roots with lightweight body and interior, plus extra power. Recognisable thanks to carbon fibre bonnet, air intake and mirrors.

Production numbers	500
Issue featured	155
Engine capacity	3,600cc
Compression ratio	9.0:1
Maximum power	620hp @ 6,500rpm
Maximum torque	700Nm @ 2,500-5,500rpm
0-62mph	3.5 sec
Top speed	205mph
Length	4,460mm
Width	1,852mm
Weight	1,370kg
Wheels & tyres	
F	9x19-inch; 245/35/ZR19
R	12x19-inch; 325/30/ZR19

997 C2 GTS 2010-2012



C4's wider rear body, and powered by the 3.8-litre Carrera S engine, with a Powerkit producing extra 25bhp. GTS is laden with Porsche options.

Production numbers	Unknown
Issue featured	157
Engine capacity	3,800cc
Compression ratio	12.5:1
Maximum power	408hp @ 7,300rpm
Maximum torque	420Nm @ 4,200-5,600rpm
0-60mph	4.6 sec
Top speed	190mph
Length	4,435mm
Width	1,852mm
Weight	1,420kg
Wheels & tyres	
F	8.5x19-inch; 235/35/ZR19
R	11x19-inch; 305/30/ZR19

997 C4 GTS 2011-2012



Like C2 997 GTS but slightly heavier and with 4WD. In either C2 or C4 form, it represented a great saving over optioning up a 997 Carrera counterpart.

Production numbers	Unknown
Issue featured	125
Engine capacity	3,800cc
Compression ratio	12.5:1
Maximum power	408hp @ 7,300rpm
Maximum torque	420Nm @ 4,200-5,600rpm
0-62mph	4.6 sec
Top speed	188mph
Length	4,435mm
Width	1,852mm
Weight	1,480kg
Wheels & tyres	
F	8.5x19-inch; 235/35/ZR19
R	11x19-inch; 305/30/ZR19



991.1 Carrera S 2011-2015

Same as Carrera, with seven-speed manual 'box but utilising bigger engine. Slightly larger front brakes than the standard Carrera, PASM as standard equipment.

Production numbers	Unknown
Issue featured	114
Engine capacity	3,800cc
Compression ratio	12.5:1
Maximum power	400hp @ 7,400rpm
Maximum torque	440Nm @ 5,600rpm
0-62mph	4.5 sec
Top speed	188.9mph
Length	4,491mm
Width	1,808mm
Weight	1,395kg
Wheels & tyres	
F	8.5x19-inch; 245/35/ZR20
R	11x20-inch; 295/30/ZR20

991.1 Carrera 4 2012-2015



22mm wider body than C2, with 10mm wider tyres and connecting rear tail light as standard. Also features a torque distribution indicator on the digital dash clock.

Production numbers	Unknown
Issue featured	98
Engine capacity	3,436cc
Compression ratio	12.5:1
Maximum power	350hp @ 7,400rpm
Maximum torque	390Nm @ 5,600rpm
0-62mph	4.9 sec
Top speed	177mph
Length	4,491mm
Width	1,852mm
Weight	1,430kg
Wheels & tyres	
F	8.5x19-inch; 235/40/ZR19
R	11x19-inch; 305/35/ZR19



991.1 Carrera 4S 2012-2015

Same wider body styling as C4, coupled to 3.8-litre 400bhp engine. Also features six-piston brake calipers at front. PTV spread torque more evenly.

Production numbers	Unknown
Issue featured	118
Engine capacity	3,800cc
Compression ratio	12.5:1
Maximum power	400hp @ 7,400rpm
Maximum torque	440Nm @ 5,600rpm
0-62mph	4.5 sec
Top speed	185mph
Length	4,491mm
Width	1,852mm
Weight	1,445kg
Wheels & tyres	
F	8.5x20-inch; 245/35/ZR20
R	11x20-inch; 305/30/ZR20



991.1 GT3 2013-2015

Wide body from 991 Carrera 4 was used for the first time. Mezger engine from previous GT3s replaced with revamped DFI version of Carrera S engine. PDK only.

Production numbers	3,000 (estimate)
Issue featured	143
Engine capacity	3,800cc
Compression ratio	12.9:1
Maximum power	475hp @ 8,250rpm
Maximum torque	440Nm @ 6,250rpm
0-62mph	3.5 sec
Top speed	196mph
Length	4,545mm
Width	1,852mm
Weight	1,430kg
Wheels & tyres	
F	9x20-inch; 245/35/ZR20
R	12x20-inch; 305/30/ZR20

Technology explained

044 PORSCHE PAINT

The painting process of a car has evolved immeasurably over the last 20 years, so what's different today?



Governed by ecological legislation and economics, the process for painting an automobile at industrial levels has changed beyond recognition in recent years. The need to be more environmentally friendly is matched by a demand from customers for a better paint finish, and Porsche leads the way on both fronts. Paints are now water-based rather than solvent-based, there's much less waste, and there's a greater degree of preparation and quality checks involved to ensure paint is of a high quality, and capable of lasting for years.

First the vehicle body is cleaned of any lubricants, polish and other interfering substances, before being subjected to a zinc phosphate coating, which guarantees optimum adhesion of the corrosion protection, which is subsequently applied. Then, the body gets an electrophoretic coating, also known as a cathodic dip, administered for a perfect covering of the vehicle body, and therefore enhanced corrosion protection. For the paint to set on the vehicle body during the following electrochemical process, it must be negatively charged. The vehicle body then serves as a cathode: the dialysis cells attached to the sides of the basin function as anodes. If an electric current is applied to the basin, the paint settles automatically on the body because it consists of positively charged particles. This is known as electrostatic paint charging.

It is using this process that a base coat is applied by robots emitting a fine spray of tiny colour particles which, after a baking process, is then topped with a clear coat, followed by another drying process. The preparation side of modern paint is more exhaustive (in that there are more steps to the process), but it's more technical too: the aim is to be as efficient with time, energy and materials as possible.

This scientific approach to painting ensures the process is more precise, and so today, 85 per cent of the sprayed paint reaches the body surface. Porsche then uses a unique separation system for paint overspray, significantly reducing emissions of environmentally damaging solvents from the painting process.

This all means your modern 911 has a better finish despite using less paint than 911s of old, is more efficient as a result, and the process to administer it is more environmentally friendly than ever before too.



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★★★★★

991.1 Turbo
 2013-2014

New Turbo marks introduction of rear axle steering, plus PDK-only transmission to forced induction 991 models.

Production numbers	Unknown
Issue featured	109
Engine capacity	3,800cc
Compression ratio	9.8:1
Maximum power	520hp @ 6,000rpm
Maximum torque	660Nm @ 1,950rpm
0-62mph	3.4 sec
Top speed	195mph
Length	4,506mm
Width	1,880mm
Weight	1,595kg
Wheels & tyres	F 8.5x20-inch; 245/35/ZR20 R 11x20-inch; 305/30/ZR20

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★★★★★

991.1 Turbo S
 2013-2015

Same dimensions as 991 Turbo, but with a tweaked map to provide extra 40bhp. Turbo options standard, including centre-lock wheels and PCCB.

Production numbers	Unknown
Issue featured	115
Engine capacity	3,800cc
Compression ratio	9.8:1
Maximum power	560hp @ 6,500-6,750rpm
Maximum torque	700Nm @ 2,100-4,250
0-62mph	3.1 sec
Top speed	197mph
Length	4,506mm
Width	1,880mm
Weight	1,605kg
Wheels & tyres	F 9x20-inch; 245/35/ZR20 R 11x20-inch; 305/30/ZR20

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★★★★★

991.2 Carrera S
 2015-2018

Shares Carrera's 3.0-litre turbocharged 9A2 engine, with revised turbos, exhaust and engine management to produce extra 50hp.

Production numbers	Unknown
Issue featured	132
Engine capacity	2,981cc
Compression ratio	10.0:1
Maximum power	420hp @ 6,500rpm
Maximum torque	500Nm @ 1,700-5,000rpm
0-62mph	3.9 sec
Top speed	191mph
Length	4,499mm
Width	1,808mm
Weight	1,440kg
Wheels & tyres	F 8.5x20-inch; 245/35/ZR20 R 11.5x20-inch; 305/30/ZR20



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★★★★★

991.2 Carrera 4
 2016-2018

New 9A2 turbocharged engine fused with all-wheel-drive running gear, now electro-hydraulically controlled. Distinguishable by wider body and full-width rear brake light.

Production numbers	Unknown
Issue featured	133
Engine capacity	2,981cc
Compression ratio	10.0:1
Maximum power	370hp @ 6,500rpm
Maximum torque	450Nm @ 1,700-5,000rpm
0-62mph	4.1 sec
Top speed	181mph
Length	4,499mm
Width	1,852mm
Weight	1,480kg
Wheels & tyres	F 8.5x19-inch; 235/40/ZR19 R 11.5x19-inch; 295/35/ZR19



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★★★★★

991.2 C2 GTS
 2017-2019

Similar specification and 'black accent' styling as per 991.1, available in both rear-wheel and all-wheel drive form. C4 GTS quicker than C2 GTS.

Production numbers	Unknown
Issue featured	150
Engine capacity	2,981cc
Compression ratio	10.0:1
Maximum power	450hp @ 6,500rpm
Maximum torque	550Nm @ 2,150-5,000rpm
0-62mph	4.1 sec
Top speed	194mph
Length	4,528mm
Width	1,852mm
Weight	1,450kg
Wheels & tyres	F 9x20-inch; 245/35/ZR20 R 12x20-inch; 305/30/ZR20

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★★★★★

991.2 C4 GTS
 2017-2019

As 991.2 Carrera GTS but with PTM four-wheel drive electrically controlling drive between both axles (rear always driven). Red connecting strip on rear.

Production numbers	Unknown
Issue featured	151
Engine capacity	2,981cc
Compression ratio	10.0:1
Maximum power	450hp @ 6,500rpm
Maximum torque	550Nm @ 2,150-5,000rpm
0-62mph	3.8 sec
Top speed	193mph
Length	4,528mm
Width	1,852mm
Weight	1,515kg
Wheels & tyres	F 9x20-inch; 245/35/ZR20 R 12x20-inch; 305/30/ZR20

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★★★★★

991.2 GT3 RS
 2018-19

Latest GT3 RS gets GT3 facelift but with NACA ducts and suspension from GT2 RS. 20hp increase over Gen1, with chassis and aerodynamic revisions.

Production numbers	100 UK cars (est)
Issue featured	164
Engine capacity	4,000cc
Compression ratio	Unknown
Maximum power	520hp
Maximum torque	480Nm
0-62mph	3.2 sec
Top speed	193mph
Length	4,549mm
Width	1,880mm
Weight	1,420kg
Wheels & tyres	F 9.5x20-inch; 265/35/ZR20 R 12.5x21-inch; 325/30/ZR21

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★★★★★

991 Speedster
 2019

Limited-edition special from Flach to mark 70 years of Porsche. Engine taken directly from 991.2 GT3 with its six-speed manual compulsory.

Production numbers	1,948
Issue featured	172
Engine capacity	3,996cc
Compression ratio	13.3:1
Maximum power	500hp @ 8,250rpm
Maximum torque	460Nm @ 6,000rpm
0-62mph	3.9 sec
Top speed	199mph
Length	4,562mm
Width	1,852mm
Weight	Unknown
Wheels & tyres	F 9x20-inch; 245/35/ZR20 R 12x12-inch; 305/30/ZR20

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★★★★★

992 Carrera S
 2019-

All-new eighth generation of 911 carries over 9A2 engine from 991.2, though all cars are now wide bodied with subtle visual tweaks.

Production numbers	In production
Issue featured	174
Engine capacity	2,981cc
Compression ratio	10.5:1
Maximum power	450hp @ 6,500rpm
Maximum torque	530Nm @ 2,500rpm
0-62mph	3.5 sec
Top speed	191mph
Length	4,519mm
Width	1,852mm
Weight	1,515kg
Wheels & tyres	F 8.5x20-inch; 245/35/ZR20 R 11.5x21-inch; 305/30/ZR21



991 Anniversary 2013-2014

Exuberantly styled Carrera S with wide body and generous spec. Many styling cues inside and out taken from original 901. Powerkit only came as standard spec in US.

Production numbers	1,963
Issue featured	112
Engine capacity	3,800cc
Compression ratio	12.5:1
Maximum power	400hp @ 7,400rpm
Maximum torque	440Nm @ 5,600rpm
0-62mph	4.5 sec
Top speed	188mph
Length	4,491mm
Width	1,852mm
Weight	1,420kg
Wheels & tyres	
F	9x20-inch; 245/35/ZR20
R	11.5x20-inch; 305/30/ZR20

991.1 Carrera GTS 2014-16



Big-spec GTS utilises wide body and a host of good options including Powerkit, PASM, Sport chrono, Sport exhaust to name a few, all for £7,000 more than Carrera S.

Production numbers	Unknown
Issue featured	157
Engine capacity	3,800cc
Compression ratio	12.5:1
Maximum power	430hp @ 7,500rpm
Maximum torque	440Nm @ 5,750rpm
0-62mph	4.0 sec
Top speed	190mph
Length	4,491mm
Width	1,852mm
Weight	1,425kg
Wheels & tyres	
F	9x20-inch; 245/35/ZR20
R	11.5x20-inch; 305/30/ZR20

991.1 C4 GTS 2014-2016



Almost the same as the C2 GTS, but with additional traction offered by four-wheel drive. As a result, performance times are altered slightly over its rear-driven variant.

Production numbers	Unknown
Issue featured	125
Engine capacity	3,800cc
Compression ratio	12.5:1
Maximum power	430hp @ 7,500rpm
Maximum torque	440Nm @ 5,750rpm
0-62mph	4.4 sec
Top speed	188mph
Length	4,491mm
Width	1,852mm
Weight	1,470kg
Wheels & tyres	
F	9x20-inch; 245/35/ZR20
R	11.5x20-inch; 305/30/ZR20



991.1 GT3 RS 2015-2017

Unprecedented aero package now delivers 997 RS 4.0's max downforce at just 93mph. Features modified 4.0-litre DFI version of 991.1 GT3 engine; PDK-only.

Production numbers	6,000
Issue featured	136
Engine capacity	3,996cc
Compression ratio	12.9:1
Maximum power	500hp @ 8,250rpm
Maximum torque	460Nm @ 6,250rpm
0-62mph	3.3 sec
Top speed	193mph
Length	4,545mm
Width	1,880mm
Weight	1,420kg
Wheels & tyres	
F	9.5x20-inch; 265/35/ZR20
R	12.5x21-inch; 325/30/ZR21

991.2 Carrera 2015-2018



Facelift model substantially changed underneath with power coming from completely new 3.0-litre 9A2 turbocharged engine. PASM now standard.

Production numbers	Unknown
Issue featured	137
Engine capacity	2,981cc
Compression ratio	10.0:1
Maximum power	370hp @ 6,500rpm
Maximum torque	450Nm @ 1,700-5,000rpm
0-62mph	4.2 sec
Top speed	183mph
Length	4,499mm
Width	1,808mm
Weight	1,430kg
Wheels & tyres	
F	8.5x19-inch; 235/40/ZR19
R	11.5x19-inch; 295/35/ZR19

991.2 Carrera 4S 2016-18



As per C4 but using revised turbos, exhaust and engine management from C2S to produce extra 50hp. Faster 0-62mph than C2S for first time.

Production numbers	Unknown
Issue featured	154
Engine capacity	2,981cc
Compression ratio	10.0:1
Maximum power	420hp @ 6,500rpm
Maximum torque	500Nm @ 1,700-5,000rpm
0-62mph	3.8 sec
Top speed	189mph
Length	4,499mm
Width	1,852mm
Weight	1,490kg
Wheels & tyres	
F	8.5x20-inch; 245/35/ZR20
R	11.5x20-inch; 305/30/ZR20



991.2 Turbo 2016-2018

Revised 9A1 engine from 991.1, producing 540hp thanks to modified inlet ports in cylinder head, new injection nozzles and higher fuel pressure.

Production numbers	Unknown
Issue featured	135
Engine capacity	3,800cc
Compression ratio	9.8:1
Maximum power	540hp @ 6,400rpm
Maximum torque	710Nm @ 2,250-4,000rpm
0-62mph	3.1 sec
Top speed	199mph
Length	4,507mm
Width	1,880mm
Weight	1,595kg
Wheels & tyres	
F	9x20-inch; 245/35/ZR20
R	11.5x20-inch; 305/30/ZR20



991.2 Turbo S 2016-2018

As per 991.2 Turbo but with power boosted to 580hp thanks to new turbochargers with larger compressors. Fastest ever 911 from 0-62mph.

Production numbers	Unknown
Issue featured	145
Engine capacity	3,800cc
Compression ratio	9.8:1
Maximum power	580hp @ 6,750rpm
Maximum torque	750Nm @ 2,250-4,000rpm
0-62mph	2.9 sec
Top speed	205mph
Length	4,507mm
Width	1,880mm
Weight	1,600kg
Wheels & tyres	
F	9x20-inch; 245/35/ZR20
R	11.5x20-inch; 305/30/ZR20



991 R 2016

991 GT3 RS engine mated to revised six-speed manual gearbox. Features Cabriolet active rear wing with diffuser aiding downforce. Lightweight flywheel optional.

Production numbers	991
Issue featured	153
Engine capacity	3,996cc
Compression ratio	13.2:1
Maximum power	500hp @ 8,250rpm
Maximum torque	460Nm @ 6,250rpm
0-62mph	3.8 sec
Top speed	201mph
Length	4,532mm
Width	1,852mm
Weight	1,370kg
Wheels & tyres	
F	9x20-inch; 245/35/ZR20
R	12x20-inch; 305/30/ZR20



991.2 GT3 2017-2019

New 4.0-litre engine from 991.2 Cup car. Retains 9,000rpm redline; six-speed manual Sport transmission now a no-cost option. Revised airflow to front and rear.

Production numbers	222 (UK, est)
Issue featured	153
Engine capacity	3,996cc
Compression ratio	13.3:1
Maximum power	500hp @ 8,250rpm
Maximum torque	460Nm @ 6,000rpm
0-62mph	3.9 sec (manual)
Top speed	199mph
Length	4,562mm
Width	1,852mm
Weight	1,413kg (manual)
Wheels & tyres	
F	9x20-inch; 245/35/ZR20
R	12x20-inch; 305/30/ZR20

991 GT2 RS 2017-2019



Fastest factory 911 of all time. Highly modified Turbo S engine with sprayed intercoolers. Rear wheel drive, PDK only. New inlets on bonnet feeds air to brakes.

Production numbers	2,000 (estimate)
Issue featured	161
Engine capacity	3,800cc
Compression ratio	9.0:1
Maximum power	700hp @ 7,000rpm
Maximum torque	750Nm @ 2,500-4,500rpm
0-62mph	2.8 sec
Top speed	211mph
Length	4,549mm
Width	1,880mm
Weight	1,470kg
Wheels & tyres	
F	9.5x20-inch; 265/35/ZR20
R	12.5x21-inch; 325/30/ZR21



991 Turbo S Exclusive Edition

The work of Porsche's Exclusive department, with extensive use of carbon on the bonnet, roof and side skirts. Power is hiked to 607hp, Turbo Aerokit standard.

Production numbers	500
Issue featured	170
Engine capacity	3,800cc
Compression ratio	9.8:1
Maximum power	607hp
Maximum torque	750Nm @ 2,250-4,000rpm
0-62mph	2.9 sec
Top speed	205mph
Length	4,507mm
Width	1,880mm
Weight	Not specified
Wheels & tyres	
F	9x20-inch; 245/35/ZR20
R	11.5x20-inch; 305/30/ZR20



991 Carrera T 2018

Purist take on the 991.2 Carrera with 20kg of weight saved and regearing of seven-speed manual gearbox. Same 370hp engine as Carrera, PDK optional.

Production numbers	5,000
Issue featured	162
Engine capacity	2,981cc
Compression ratio	10.0:1
Maximum power	370hp @ 6,500rpm
Maximum torque	450Nm @ 1,700-5,000rpm
0-62mph	4.1 sec
Top speed	183mph
Length	4,499mm
Width	1,808mm
Weight	1,410kg
Wheels & tyres	
F	8.5x19-inch; 245/40/ZR19
R	11.5x19-inch; 295/35/ZR19

992 Carrera 4S 2019-



As with the 992 Carrera S, but with active all-wheel drive providing variable torque to the front axle. Identifiable by silver decklid slats (C2S has black).

Production numbers	In production
Issue featured	174
Engine capacity	2,981cc
Compression ratio	10.5:1
Maximum power	450hp @ 6,500rpm
Maximum torque	530Nm @ 2,500rpm
0-62mph	3.4 sec
Top speed	190mph
Length	4,519mm
Width	1,852mm
Weight	1,565kg
Wheels & tyres	
F	8.5x20-inch; 245/35/ZR20
R	11.5x21-inch; 305/30/ZR21

992 Carrera 2020-



The base 992 was revealed some nine months after the S. Visually different to the C2S thanks to smaller wheels and two single-exit exhaust tips.

Production numbers	In production
Issue featured	189
Engine capacity	2,981cc
Compression ratio	10.2:1
Maximum power	385hp @ 6,500rpm
Maximum torque	450Nm @ 1,900-5,000rpm
0-62mph	4.0 sec
Top speed	182mph
Length	4,519mm
Width	1,852mm
Weight	1,505kg
Wheels & tyres	
F	8.5x19-inch; 235/40/ZR19
R	11.5x20-inch; 295/35/ZR20

992 Carrera 4 2020-



Same spec as the 992 Carrera, albeit with variable torque sent to the front wheels in an improved multi-plate clutch AWD PTM system over the 991.2.

Production numbers	In production
Issue featured	N/A
Engine capacity	2,981cc
Compression ratio	10.5:1
Maximum power	385hp @ 6,500rpm
Maximum torque	450Nm @ 1,950-5,000rpm
0-62mph	4.0secs
Top speed	180mph
Length	4,519mm
Width	1,852mm
Weight	1,555kg
Wheels & tyres	
F	8.5x19-inch; 235/40/ZR19
R	11.5x20-inch; 295/35/ZR20



992 Turbo S 2020-

3.8-litre version of the 992 Carrera's engine, with intercoolers now on top and air filters housed behind side air intakes. PSE and Sports chassis optional for the first time.

Production numbers	In production
Issue featured	190
Engine capacity	3,745cc
Compression ratio	8.7:1
Maximum power	640hp @ 6,750rpm
Maximum torque	800Nm @ 2,500-4,000rpm
0-62mph	2.7 secs
Top speed	205mph
Length	4,535mm
Width	1,900mm
Weight	1,640kg
Wheels & tyres	
F	8.5x20-inch; 255/35/ZR20
R	11.5x21-inch; 315/30/ZR21



992 Targa Heritage Design Edition 2020-

First of four Heritage Design specials from Porsche Exclusive, inspired here by Porsche sports cars of the 1950s and 1960s.

Production numbers	992
Issue featured	193
Engine capacity	2,981cc
Compression ratio	10.5:1
Maximum power	450hp @ 6,500rpm
Maximum torque	530Nm @ 2,500rpm
0-62mph	3.6secs
Top speed	189mph
Length	4,519mm
Width	1,852mm
Weight	1,675kg
Wheels & tyres	
F	8.5x20-inch; 245/35/ZR20
R	11.5x21-inch; 305/30/ZR21

EVERYTHING YOU EVER WANTED TO KNOW ABOUT PUTTING YOUR PORSCHE AWAY THIS WINTER...ALMOST



With 17 years in the business, let's talk winter protection with Mark Wibberley, owner of well-known car care products company morethanpolish.com.

As his company also runs the covers specialist carcovershop.co.uk, his team have plenty of real-world experience in an area with many internet 'experts'...

We'll start with his cars though – three years ago he added the ex-AFN Park Lane Boxster demonstrator to his treasured 944 Turbo, owned since 2003. Both are well used, have spent most of their time outside and have their own covers.

It's a common misconception that covers

scratch cars. Cheap, badly fitting covers on dirty cars may do so, but if you're covering your Porsche, is a £50 cover from eBay really likely to do the car justice? In the same way that you probably don't drop your 911 at Halfords for a service, the value of product advice and knowledge that a specialist provides is usually well worthwhile.

Our most popular covers are now the relatively new Waterproof & Breathable covers. Made from a knitted, three-layer laminated neoprene polyester blend (applied with a Gore-Tex-type middle layer), these are well proven to keep your Porsche totally dry. We do custom versions now for Carrera 3 to 993, 996-991 and 992 models, plus 718 and 987 Boxster/Cayman.



FAR LEFT Custom Waterproof & Breathable cover on 996 C4S

LEFT Custom Peachskin cover on Carrera 3.2

LOWER LEFT Dehumidifiers in garage with Porsche

BELOW Marks 986 Boxster under Protector4 cover



These are a touch over £200 except the custom ones, at £265.

Some owners put heaters in their garage to keep the car warm, but warmer air holds more moisture. A dehumidifier will naturally heat the air anyway, though only if it's working – compressor-based machines are useless below 10 degrees, and are outperformed by desiccant machines even well above that. They do stop mould, rust and mildew growth, and the one I have in my garage, Meaco DD8L Junior, costs £165, also producing free washer bottle water that doesn't leave marks down my windows.

I shall also invest in an AirChamber this winter for my venerable 944 Turbo, as it's going into a large store where I can't dehumidify the

whole place. This will keep the dust off, spiders and rodents away and my discs shiny. It will of course have its CTEK 3.8 attached – the forums tend to recommend the 5.0 but that's overkill for all but the largest engined Porsches. The key here is to have a conditioner, as opposed to a charger – the latter keeps pumping in current and will cook, not condition, your battery.

All my cars are well protected with a mixture of ceramic coating, Nano sealant, wax and newer SiO2 coatings by my own brand Race Glaze, plus a couple of panels with Zymol Atomic Graphene Shield. Graphene products are a little controversial right now, but the gloss levels are out of this world and if you prepare the panels correctly, I think they could become

hugely popular due to ease of use and durability between the best waxes and ceramic. **911**

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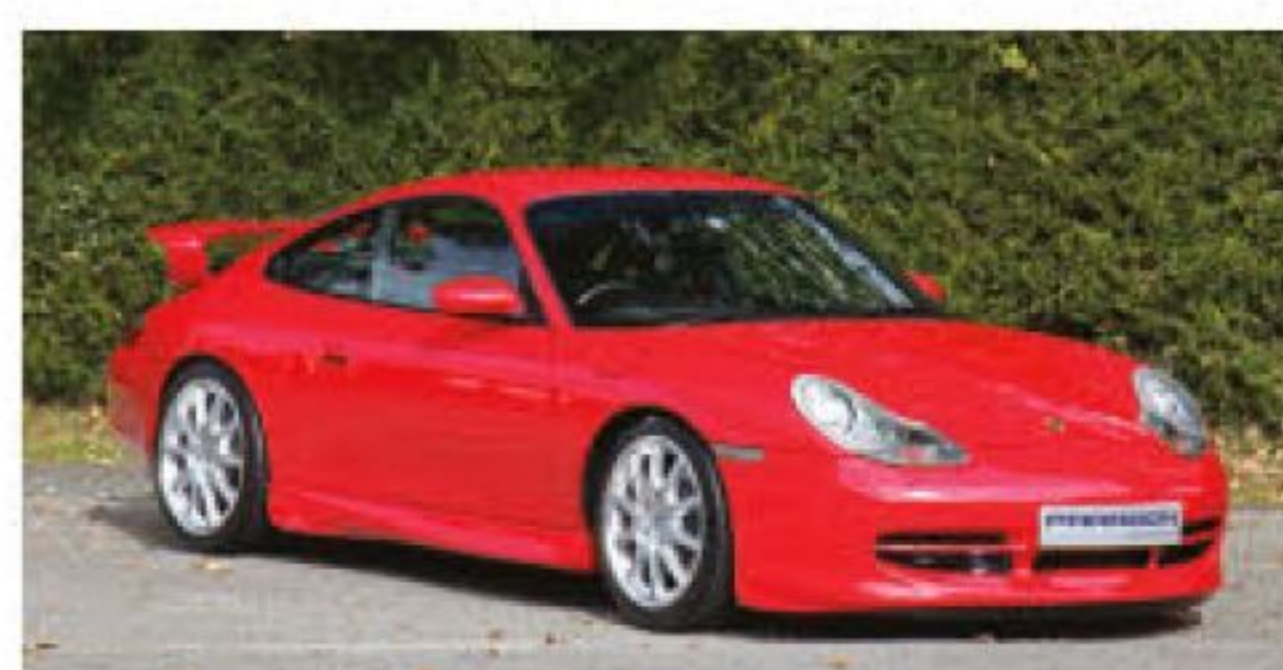
Carmine Red • Black Leather Sports Seats • PDK Gearbox with Paddles • 20" Centre Lock Wheels • Sport Chrono • Front & Rear Parking Sensors • 32,228 miles • 2015 (15)

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**911 Turbo (997 GEN II)**

Jet Black • Black Leather Seats • PDK Gearbox with Paddles • Bose Sound • Parking Sensors • Sport Design Steering Wheel • Bi-Xenon Headlights • 34,027 miles • 2012 (12)

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**911 GT3 Clubsport (996)**

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**911 Carrera 4 (993)**

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**911 Carrera 4 GTS (997)**

Basalt Black • Black Leather Adaptive Sports Seats • PDK Gearbox with Paddles • 19" Centre Lock Wheels • Sport Chrono • Previously Supplied & Serviced by Paragon • 24,905 miles • 2012 (62)

£59,995

**911 Turbo GEN 1.5**

Basalt Black • Black Leather Adaptive Sports Seats • Tiptronic S Gearbox • 19" Turbo Wheels • Sport Chrono • Previously Sold & Serviced by Paragon • 45,105 miles • 2008 (58)

£54,995

**Cayman 718 T**

Carrera White Metallic • Black Leather 918 Bucket Seats • Manual Gearbox • 20" Carrera Sport Wheels • Switchable Sports Exhaust • Sport Chrono • 1,669 miles • 2019 (69)

£52,995

**911 Carrera 2 (991)**

Carrera White • Black Leather Seats • PDK Gearbox • Switchable Sports Exhaust • 20" Carrera Classic Wheels • Previously Sold & Serviced by Paragon • 37,285 miles • 2012 (12)

£49,995

**Boxster Spyder (987)**

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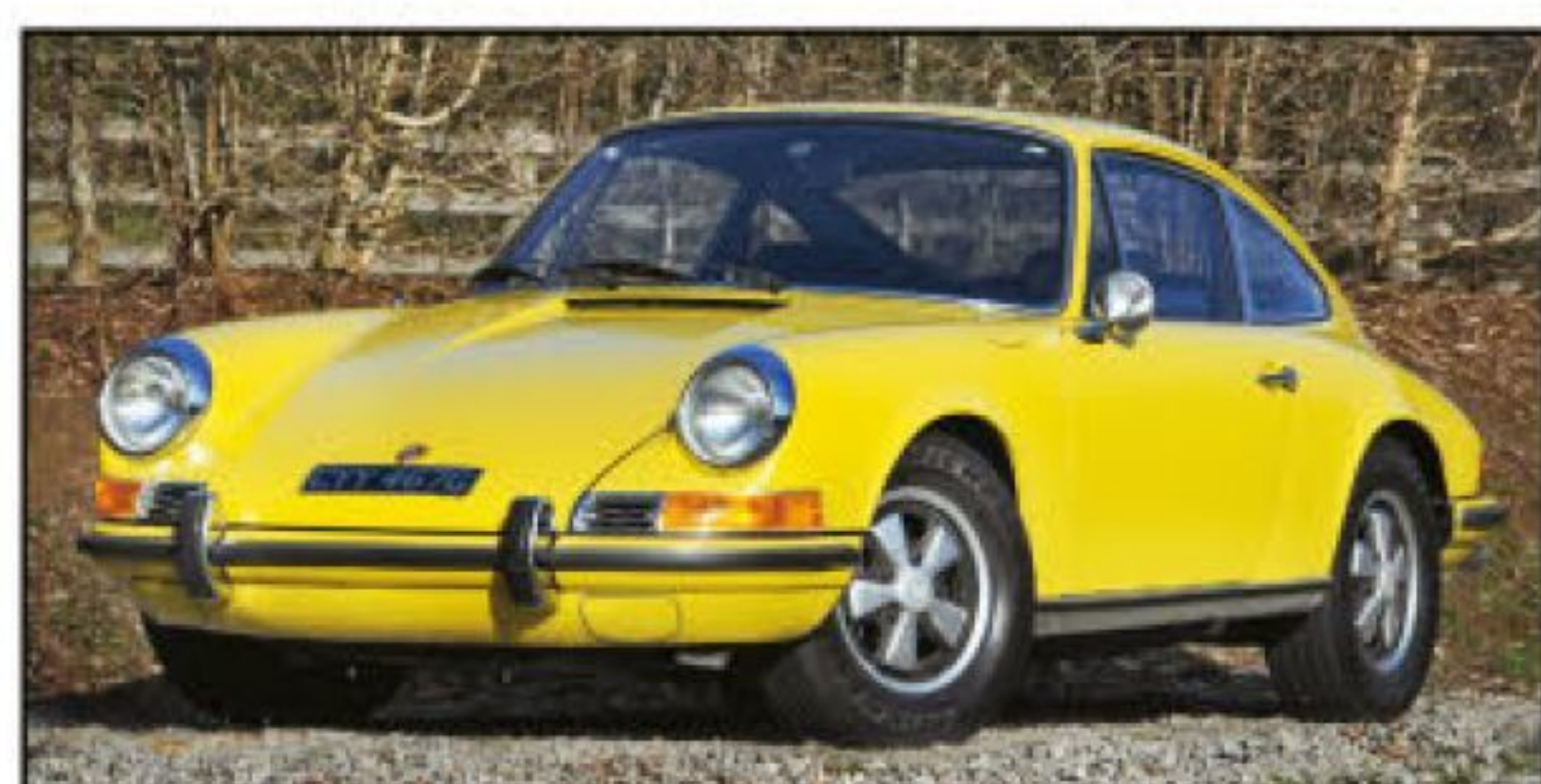
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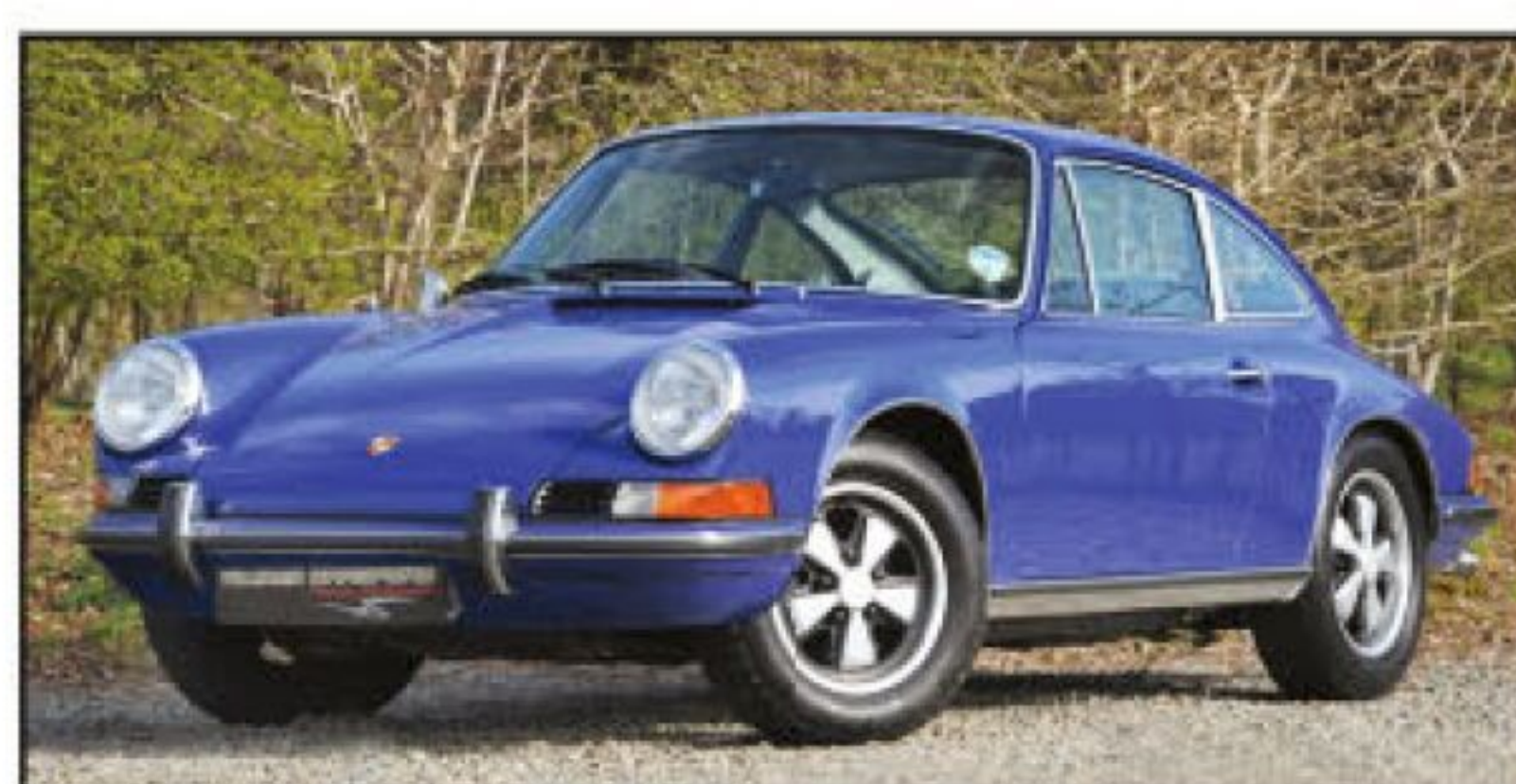
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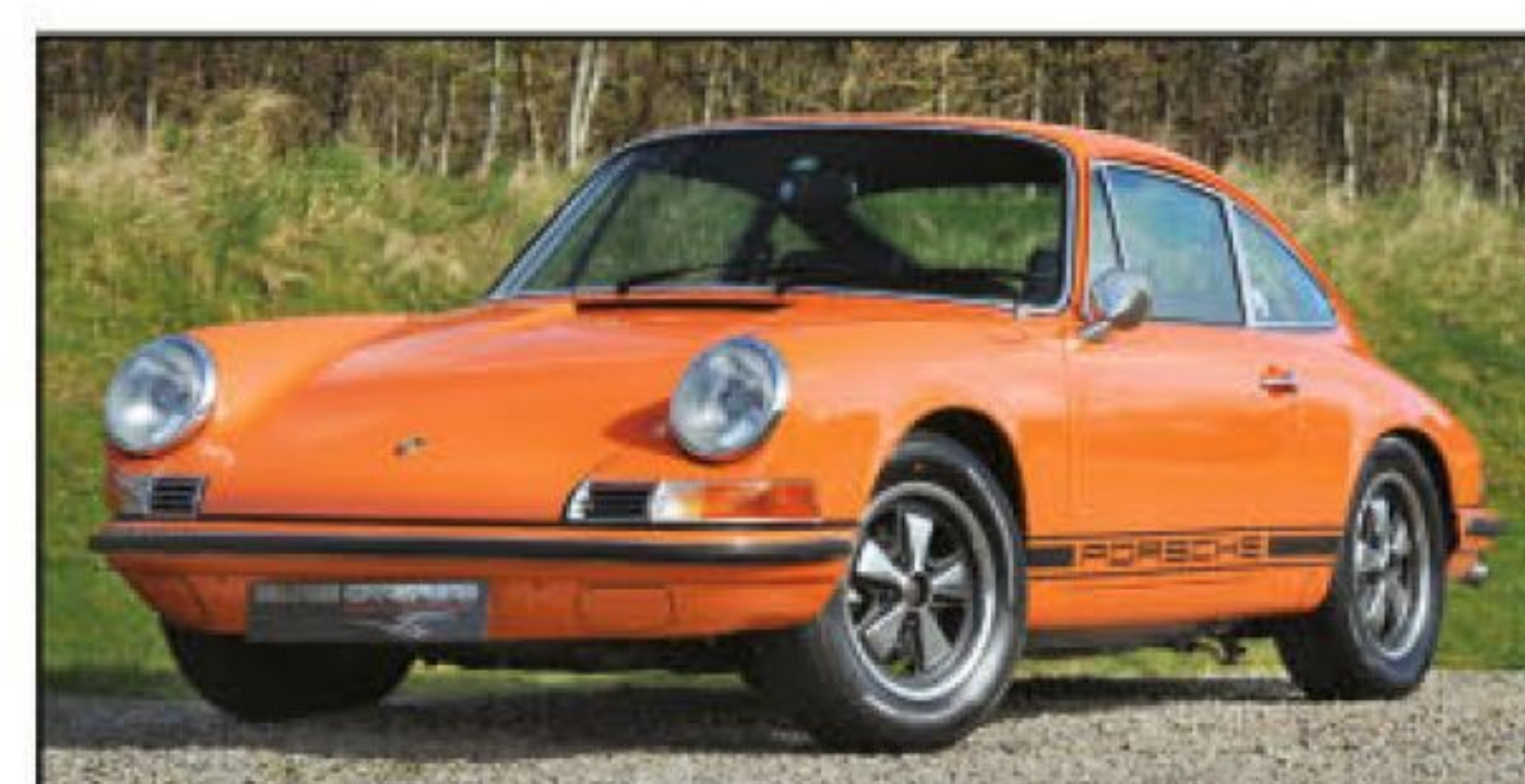
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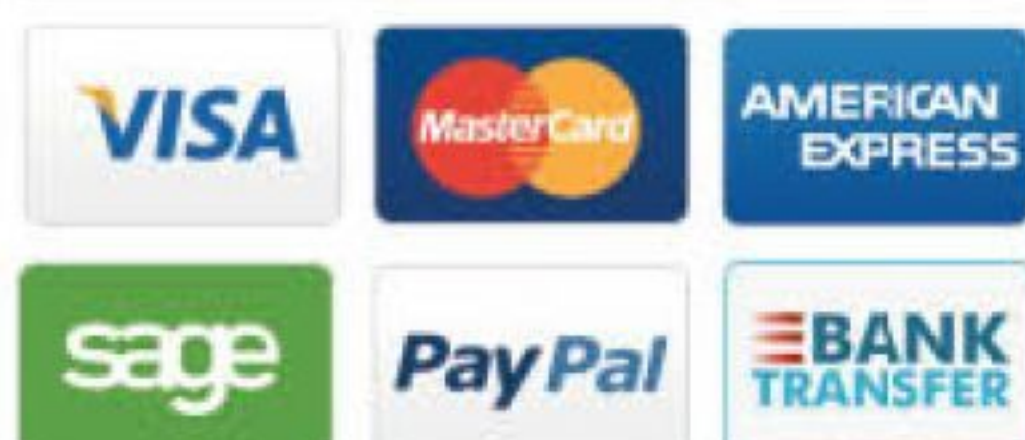
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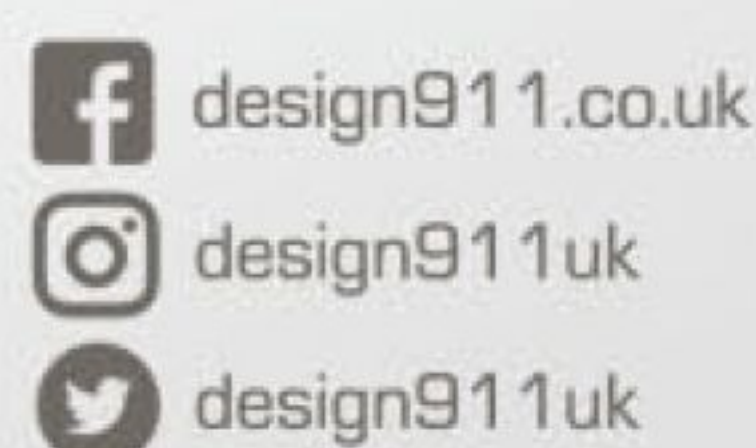
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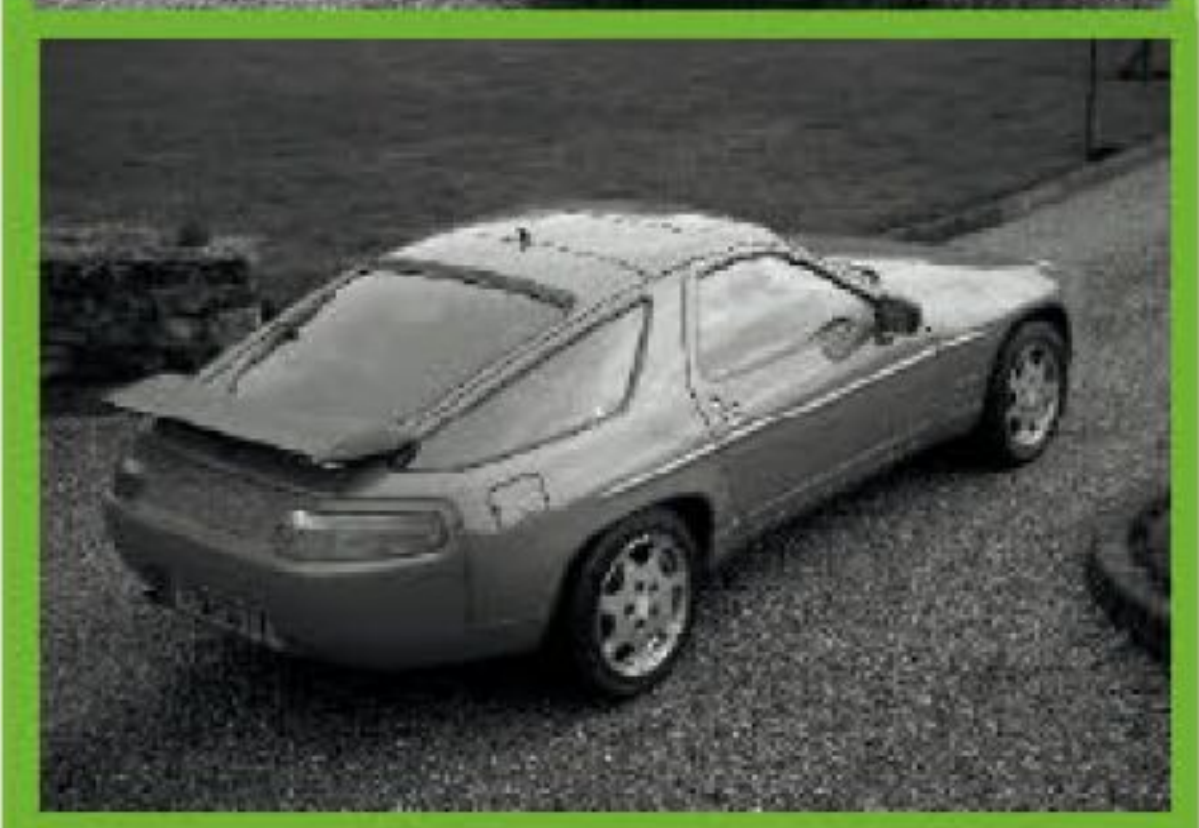
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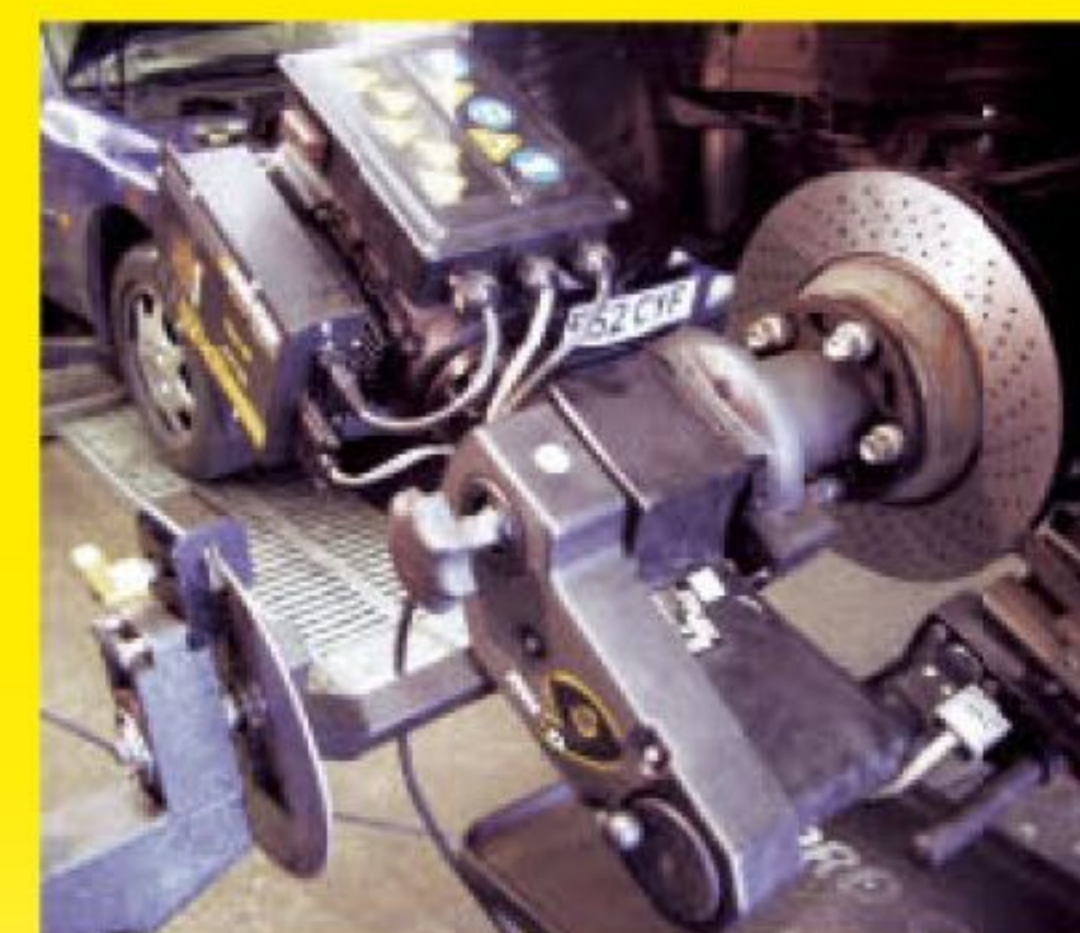
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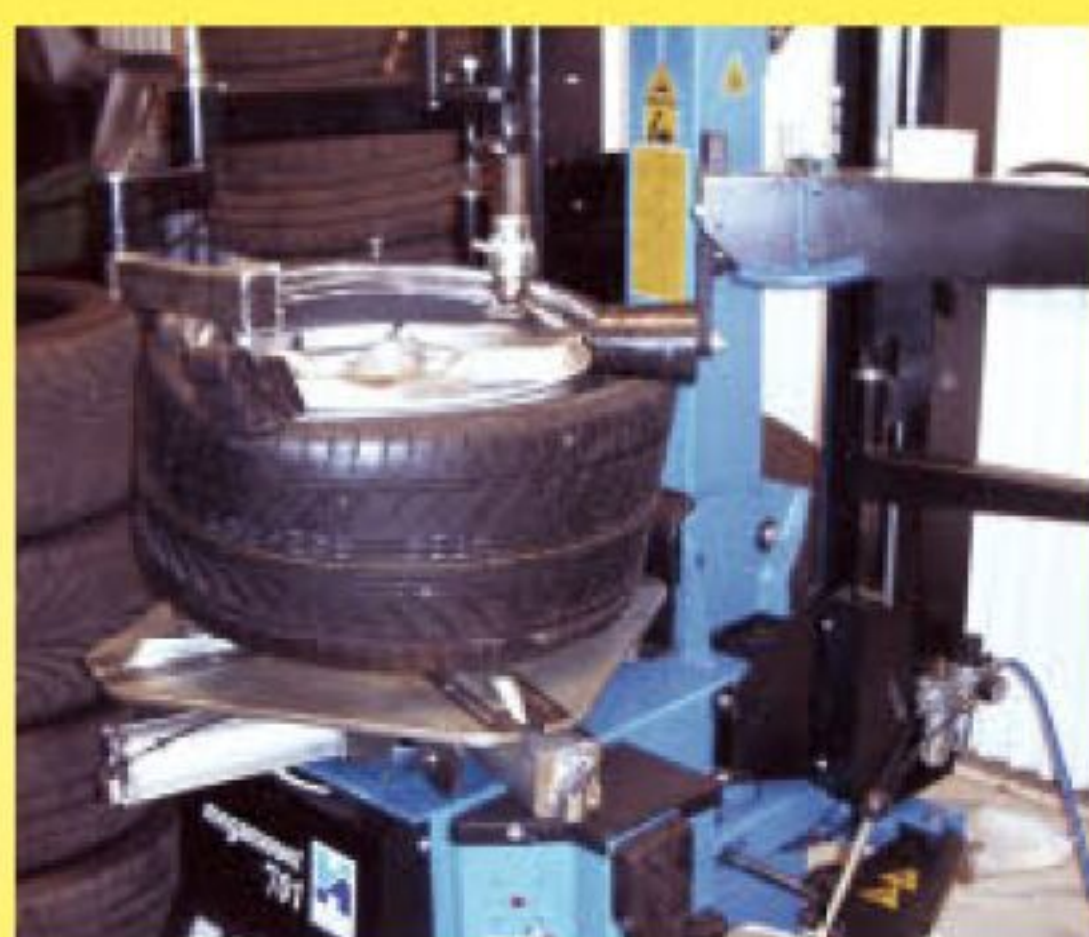
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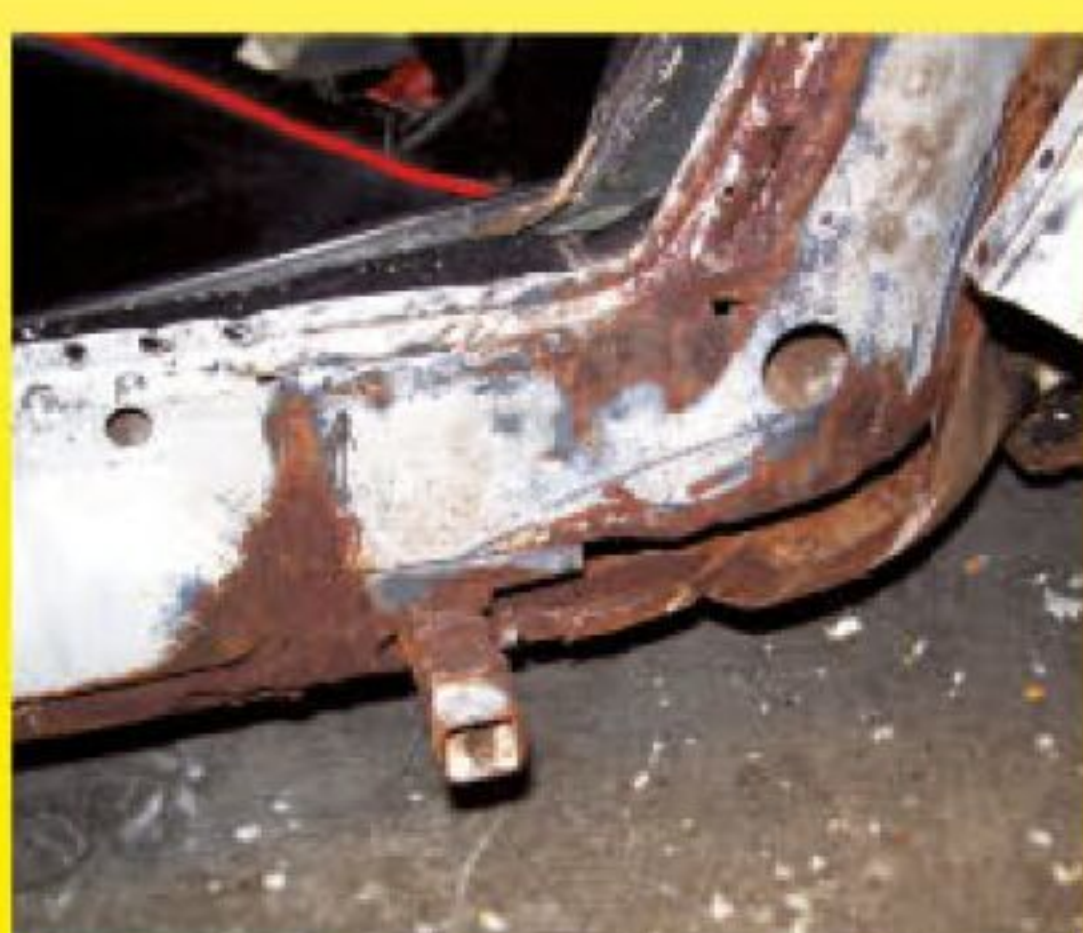
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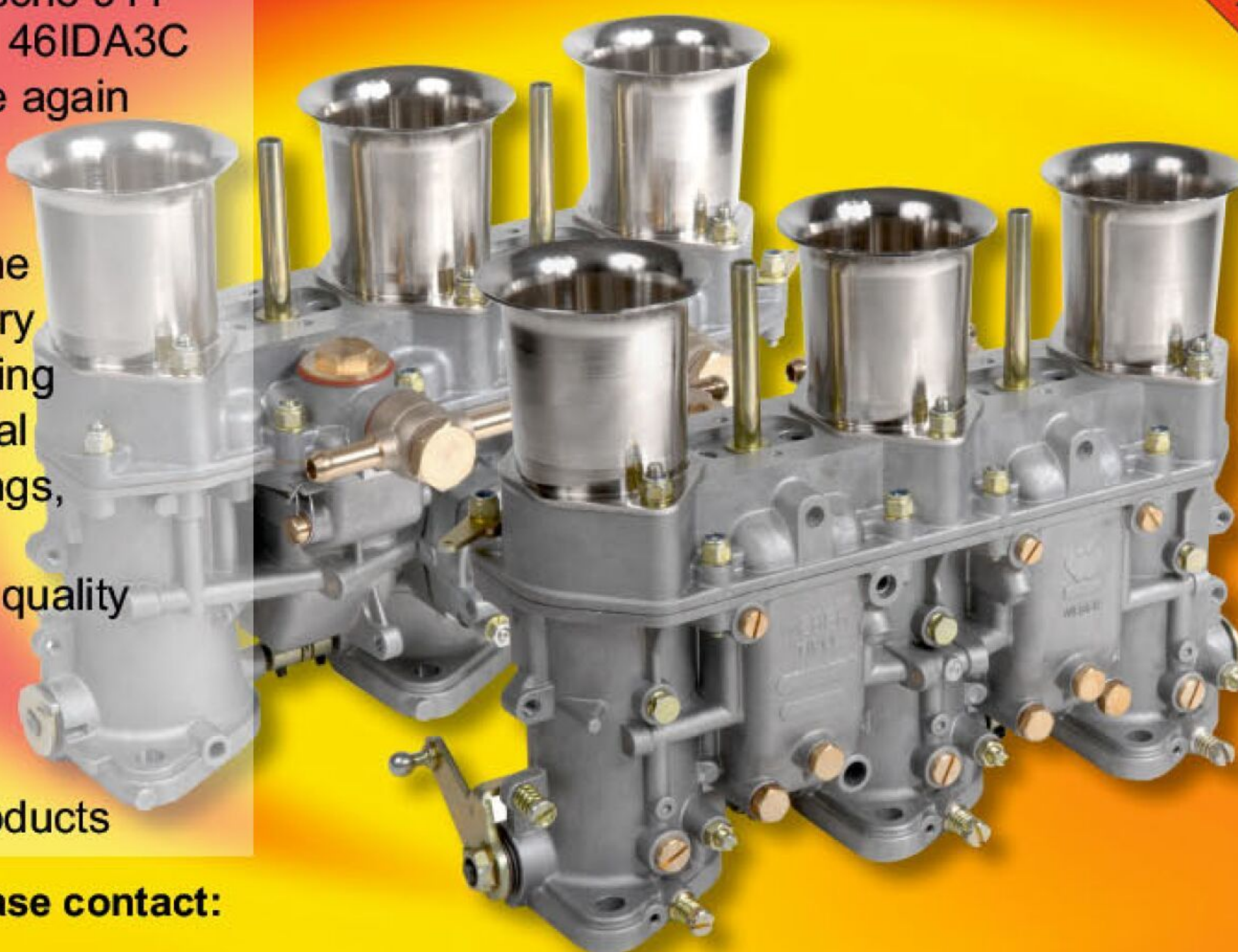
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The Big Porsche Quiz

We're hoping Total 911 might have enriched your knowledge of the Neunelfer over the last 200 issues, so we've decided to put it to the test with our quiz dedicated to Stuttgart's greatest sports car. Answers can be found along the bottom of the page, with one point awarded for each correct answer. Good luck!

GENERAL KNOWLEDGE

1. How many 991 Speedsters were built by Porsche?
2. Which was the first 911 Turbo to adopt twin-turbocharging? Excluding the 959, so we're looking for a bona fide 911 Turbo...
3. What's the factory option code for the 3.2 Carrera Turbo-look/Supersport?
4. Which was crowned the fastest car of 1987 in *Road & Track* magazine's annual 'World's Fastest' test, usurping Porsche's own 959?
5. The production 911 Targa first appeared in the 911 lineup in 1967. However, what was the name of the Targa prototype which Porsche produced at the Frankfurt Motor Show of 1965?



PEOPLE

6. Who designed the 993?
7. Who said "Racing is life, anything before or after is just waiting"?
8. The 2017 GTS British Legends Edition was built in honour of the Le Mans exploits of Richard Attwood, Nick Tandy and which other former Le Mans winner?
9. The dry-sumped flat six engine found in 996/997-based Turbo and GT cars is colloquially named after which famous Porsche engineer?
10. Who was head of 911 production at Porsche from 1989-2019? Clue, he was nicknamed 'Mr 911'?



GUESS THE YEAR

11. In which year did Porsche release the 930 LE (Limited Edition)?
12. In which year did Porsche Exclusive unveil the 997 Speedster, which was built to celebrate 25 years of the official Sonderwunsch department?
13. In which year did Porsche switch from short wheelbase to long wheelbase 911s? The wheelbase grew by 67mm to 2,271mm...
14. In which year did the 2.1-litre Turbo RSR compete at Le Mans?
15. In which year did Porsche build its one millionth sports car? Clue, this was a 993 Carrera built for the German police force...



FIRSTS

16. Which was the first 911 generation to feature Porsche Active Suspension Management (known as PASM for short)?
17. What was the first generation to switch to direct fuel injection?
18. The 964 was the first generation to feature a Tiptronic gearbox, but how many forward ratios did it have?
19. What was the first 911 generation to feature a boot popper on the key?
20. Which was the first 911 model to feature Porsche Ceramic Composite Brakes (PCCB)?



PORSCHE COLOURS

21. What colour was the fan shroud on the 2.7 RS?
22. What's the redline of the 991.2 GT3 RS?
23. Red, white, gold and blue were the colours of which famous livery adorning the works 953s at the 1984 Paris Dakar?
24. Put these Porsche shades of blue in order of when they first became available on the 911, from earliest to latest: Lapis, Miami, Gentian, Gulf
25. What colour was the last air-cooled Porsche 911 built by Porsche?



HEAD TO HEAD

26. Which is lighter, 2.7 RS Lightweight or 964 C4 Lightweight?
27. Which is heavier, 993 Carrera or 996 Carrera?
28. Which has more torque, 991 GT2 RS or 992 Turbo S?
29. Which of these 911 models is fake, 993 Speedster or 996 Speedster?
30. What came first, the Carrera 3.0 or the Carrera 4?



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