991.1 CARRERA GTS ULTIMATE BUYING GUIDE

Total 911

THE PORSCHE MAGAZINE

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THE EXPERTS' CHOICE

CARS TO BUY IN 2022

NEW 992 REVEALED

Porsche Design Targa special edition: first look

+

TECH EXPLAINED: 964'S ACTIVE REAR WING

ARE TIPTRONICS HARDER TO SELL?

PORSCHE MOMENT: 964 TURBO LAUNCH

REVEALED: THE PORSCHES TIPPED FOR GREATNESS BY MARKET EXPERTS THIS YEAR

40 YEARS OF PDK

How the double-clutch gearbox crossed from race to road

ISSUE 214

FUTURE DigitalEdition

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Welcome

We begin this month's issue with the announcement of a new, special edition Targa, the second such model for the 992 generation. Say hello to the '911 Edition 50Y Porsche Design', released to celebrate the golden jubilee of the design agency of Butzi Porsche, hallowed creator of the 911.

Limited to 750 units, the Targa is essentially a 992 GTS presented in black with Sport-Tex seat centre panels, alongside what Porsche describes as "numerous styling highlights inspired by the iconic designs of F.A Porsche". A case in point is the red second hand of the Porsche Design subsecond clock in the Sport Chrono Package, while the car's all-black appearance is a direct nod to the legendary Chronograph 1 design by Professor Porsche in 1972.

Admittedly, with such modest revisions this special edition falls rather short of feeling particularly special in comparison to, say, the 992 Heritage Design Edition Targa, though it's fantastic to see a direct tie-up between Porsche AG and Porsche Design. These are two iconic brands in their respective fields and which, of course, have direct links to the Porsche family. The half-century of Porsche Design is being celebrated with a special exhibition at the Porsche Museum on Porscheplatz, and is well worth a look if you're passing through.

Away from new 911s, our annual look at the cars to buy for the year ahead is a popular feature that's returned for 2022. As our experts have shown, there's a great deal of choice in the used marketplace currently, which means more good news for enthusiasts. New or old, there's a 911 out there for everybody!

"The car's all-black appearance is a direct nod to the legendary Chronograph 1 design"

LEE SIBLEY • Editor at large
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Total 911 Opening Shot

Photograph courtesy
Total 911 Archive

An impressive new dawn has arrived for Singer Vehicle Design and its classic restoration programme. As *Total 911* went to press, news broke that the California company's naturally aspirated, 4.0-litre flat sixes – modified versions of original Porsche engines – will now be built by, would you believe, Porsche itself. Specifically, the engines will be constructed by Porsche Motorsport NA at its headquarters at the Experience Center, Los Angeles. This is the greatest statement yet regarding Porsche's admiration for the work undertaken by Singer to reimagine its own 964-generation 911s.

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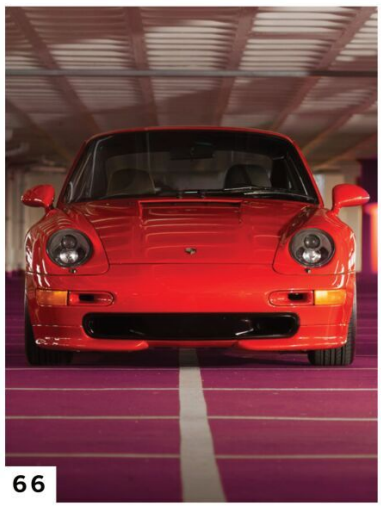
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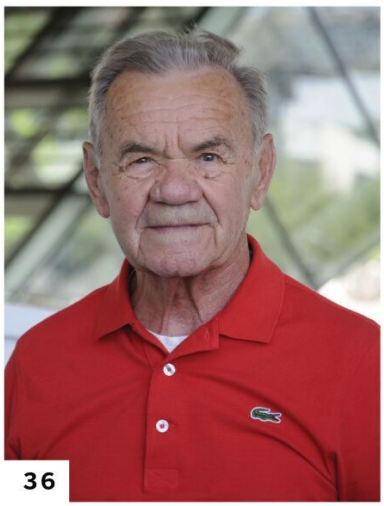
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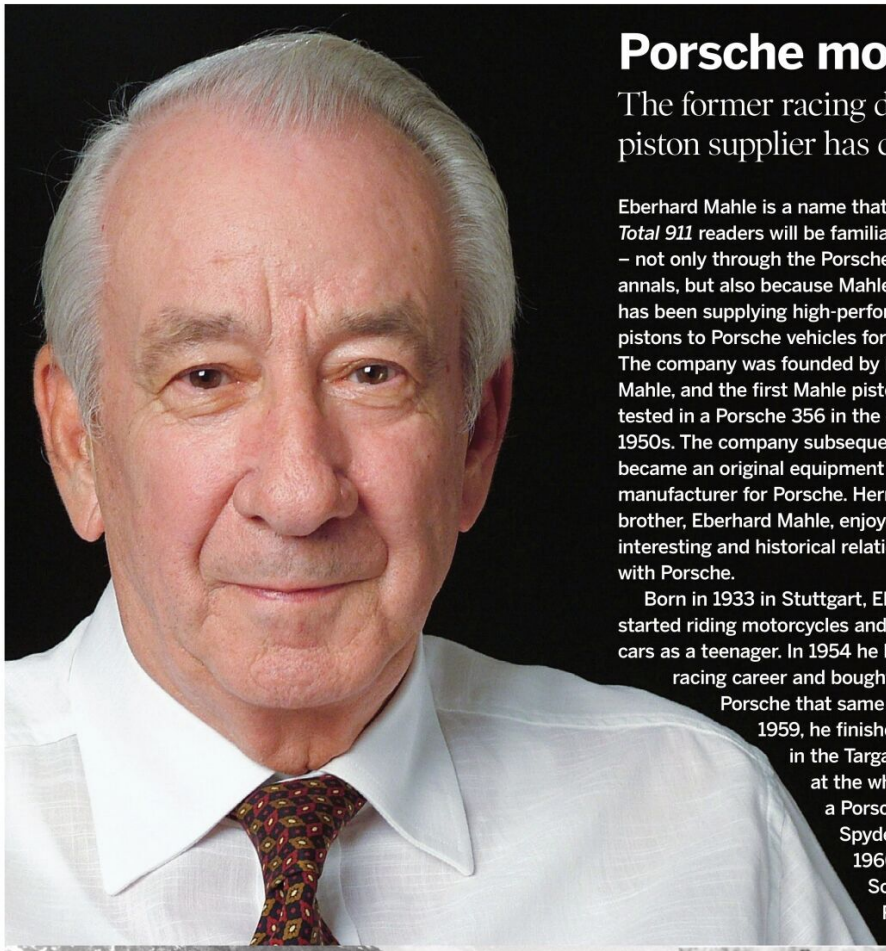
Update

Latest news, key dates, star products & race results from the world of Porsche



Porsche mourns Eberhard Mahle

The former racing driver and high-performance piston supplier has died at the age of 88

Eberhard Mahle is a name that many *Total 911* readers will be familiar with – not only through the Porsche racing annals, but also because Mahle GmbH has been supplying high-performance pistons to Porsche vehicles for 70 years. The company was founded by Hermann Mahle, and the first Mahle pistons were tested in a Porsche 356 in the early 1950s. The company subsequently became an original equipment manufacturer for Porsche. Hermann's brother, Eberhard Mahle, enjoyed a long, interesting and historical relationship with Porsche.

Born in 1933 in Stuttgart, Eberhard started riding motorcycles and driving cars as a teenager. In 1954 he began his racing career and bought his first Porsche that same year. In 1959, he finished second in the Targa Florio at the wheel of a Porsche 550 Spyder and in 1960 won the Solitude Rally in a Porsche 356 Super 90. By 1963, he had competed in around 210 races and rallies, driving to six overall wins and over 150 class victories.

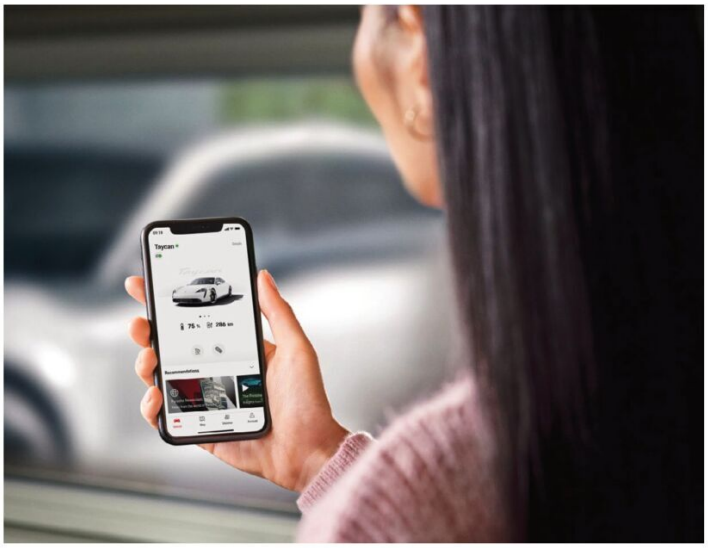
After recovering from a serious go-kart accident in 1964 that kept him in hospital for 18 months, Eberhard wanted to try racing a 911. He bought a second-hand 1965 911 2.0 with an uprated 165hp engine. Despite a marked power deficit to his rivals who were driving 300hp Fords and Ferraris, Mahle took on his first event at Rossfeld – a track with few bends – and finished third. Other tracks were better suited to the driver and his agile Porsche. "A good driver can compensate for any performance deficit on such tracks," he said.

In 1966 Eberhard became European Champion, having won regularly in the GT class. The championship saw him become the first driver to take an international title in a Porsche 911. "That was my greatest success," he recalled. "Especially because all the experts said you will never win it like that."

Eberhard Mahle passed away on 21 December 2021 at the age of 88.

Porsche launches My Porsche app

The 'one-stop-shop' digital tool is an improved prospect for both Apple and Android smartphones



Taking over from the *My Porsche Essentials*, *Connect App* and *Car Connect App* is a new digital platform for Porsche owners encompassing all three. The *My Porsche* app offers Porsche digital services direct to customer smartphones and will combine the full range of Porsche services and information in a single place. Over the next few months the *Porsche Charging* and *Porsche – Good to Know* apps will also be integrated.

Compatible with Porsche 911 vehicles built in 2016 onwards, the new app provides a connection between the smartphone and your Porsche, displaying vehicle information such as fuel level, current mileage, location and trip data. There's also the ability to remotely control functions. App users can also be assisted in contacting their dealer to make service appointments and even to pose questions about their vehicle. With safety and security in mind, should a vehicle unexpectedly move or drive faster than the speed limit, the app can alert users via push notifications. There's also the option to link with streaming services, digital calendars and to send destinations between the smartphone and your PCM navigation system.

911 is third best-selling Porsche of 2021

Flying in the face of global supply challenges, the 911 made a welcome return to the Porsche sales podium

Porsche Cars Great Britain saw a successful year of sales in 2021, delivering a total of 14,017 cars in the UK and Ireland. Despite obvious global challenges, Porsche sold a record number of cars worldwide in 2021, some 301,915 vehicles in total. This is an 11 per cent increase compared to 2020. Unlike other car manufacturers, *Total 911* understands that sheer demand for cars has been the main cause of any lengthened delivery periods over the much publicised semi-conductor crisis.

Of those cars delivered by Porsche GB, the all-electric Taycan topped the chart, accounting for over 4,000 sales alone. The Macan, which has historically been the best-selling Porsche for the market, placed second, with the 992 third overall in a year which gave birth to the latest 911 GT3.

911 RSR prepares to go for gold

Two factory Porsche 911 RSRs will be on the driver line-up for 2022's World Endurance Championship

Porsche has set its sights on racetrack glory this year, with a pair of 911 RSRs entering the FIA World Endurance Championship (WEC). A slightly revised driver line-up will feature over the championship's six races. Gianmaria Bruni and Richard Lietz will once again drive the No. 91 RSR, while in the sister car Kévin Estre will swap seats with Michael Christensen in the No. 92. The pairing took class victory at Le Mans three years ago as well as taking title victory in 2018/2019.

The first race of the new WEC season takes place on 18 March at Sebring, Florida, USA, while in the summer the two 911s will tackle the historic 90th running of the 24 Hours of Le Mans. There the driving team will be bolstered by support from two further Porsche factory drivers: Frédéric Makowiecki and Laurens Vanthoor.

News in Brief

Chronograph Race watch

New to the official Porsche shop is this striking Chronograph Race watch. The silver face features a polished number dial with red details and the Weissach RS logo. It also features a screwed-on crown, push button at the 12 o'clock position and both a rubber and replacement textile strap. It costs £545.00 and you can purchase it at **shop.porsche.com** (Porsche item number WAP0700090NRAC).

Playmobil 911 GT3 Cup play set

Perfect for younger Porsche fans is this new 911 GT3 Cup 2.0 play set from Playmobil. It comes with a mini replica of the 991 GT3 Cup car, which has working headlights and a removable roof, giving access for the driver figure (included). The set comes with a wheel gun and fire extinguisher, too. It costs £49.99 – find it at **shop.porsche.com** (search for Porsche item number WAP0408020NPMG).

Total 911
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Views

The very best of your Porsche opinions

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The art of driving

Dear Sir,

I have just read your issue which "celebrates the merits of stick shift" or what I would call manual gearboxes [*Total 911* issue 209]. I was, at last, enjoyed to see this form of gearbox referred to as an "engagement" with the art of driving.

The advance of technology and the onslaught of 'driver aids' is all very well, but there are those among us that delight in the perfect upward – or downward – gear change, sometimes facilitated by the heel and toe method.

This has nothing to do with the traffic light drag or the occasional track day facilitated by the DSG. It has everything to do with the enjoyment and satisfaction of working with the car's engineering design – in harmony. I was disappointed to see that your top 10 did not include the 996.2, which is the perfect analogue performance car.

I covered 50k miles in my car (which was a replacement for an F355) and it never failed to entertain both with PCCB braking and the manual gearbox. I'm also fortunate to have owned one of the first 964 Carrera 4s, which was devastatingly fast across country, and three 911s – all manuals.

What now? A Porsche Cayman S (the best yet – sorry!) and as a day car the Mustang Bullitt (manual of course). Great magazine...

Very kind regards,

Gordon Macpherson

We completely agree that a manual gearbox feeds nicely into the idea of driving as an 'art'. PDK generally takes away the margin for error, and so there is an argument that hustling a manual gearbox is indeed an art form, when one gets it right.

As for the 996.2, while it is a fine sports car and the last 'basic' 911 with no PASM, Sport button etc, the shift itself wouldn't be classed as one of the best of all time within a 911. Hence why it wasn't included in our top ten, as some examples we've tried could be quite notchy, particularly when cold. That said, the shift was improved over the 996.1 in this regard.

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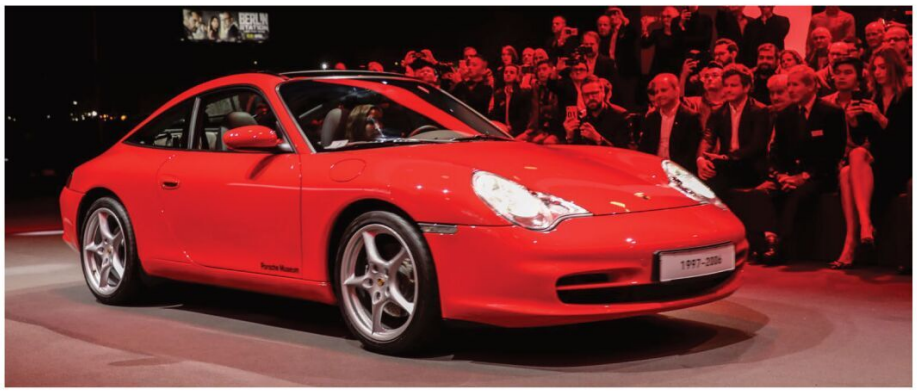

996 Carrera article?

Dear Sir,
As a keen and avid reader of *Total 911* I was pleased to see back in June reference to an article on 996s, and some subsequent issues have alluded to the fact 996s will be featuring in the 'next' issue, including issue 212 in December. I've just received issue 213 and again cannot see any promised article featuring the 996?

You've guessed it: I own a 996 and have spent a small fortune making it something quite unique and special. I would therefore appreciate some 'air-time' within *Total 911* to this model, because while attending the Brands Hatch Porsche event in the summer it was clear that there are numerous 996 owners out there with cherished cars.

The 996 historically received bad press, although popularity and prices now indicate that this is changing and I strongly believe well-maintained versions such as mine are robust, reliable and above all 'fun' cars to drive.

Look forward to your comments on when you plan to feature the 996.
Jon Clinch

Thanks indeed for your email, Jon. Good spot on the 996 feature! We had a really cool 996 group test organised for as soon as one of the cars was out of the workshop. As is often the way with these things, the car spent a lot longer in the garage than anticipated. And then, when it was finally out, another car readied for the shoot had a gearbox failure. Very bad luck (for the owners chiefly!), but I decided to postpone the piece until this calendar year where we'll go bigger and better to celebrate 25 years of the 996. Stay tuned!

In praise of the Carrera 3.0

Dear Sir,
I'm puzzled by the two-star rating given to the Carrera 3.0 in Data File. I've owned many different 911s including a 993 RS and 996 GT3 RS, as well as older models including both 3.0-litre and 3.3-litre 930 Turbos. My current collection includes a 1973 RS, a 1989 Speedster and a 2019 Speedster, so I think I can speak with some authority. The Carrera 3.0 is a fantastic car which, like most good Porsches, is more than the sum of its parts. The engine is a peach with a distinctive sound and the car feels light and alive. Performance is perfectly adequate and in non-Sport guise it's a beautifully simple design. For all that it gets two stars while the lowly (and slower) 911 of similar vintage gets two and a half. Baffling.
Trevor Cartner

Thanks for pointing this out to us, Trevor. The Carrera 3.0's two-star rating was a misprint, we have since upgraded it to 2.5 stars, though perhaps a further test drive would be of benefit.

Ask the expert

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

Scott Gardner
Job title
Technical director, Bahnsport
Porsche experience
15 years

Dear Sir,
I have a 1978 SC, which needs an engine rebuild, so I'm thinking of upping capacity to eke out some more power. It's an expensive move, so what are the pros and cons in your view? Is it worth it?
Alec Little

Decisions need to be made with care during an engine rebuild process. Do you keep it original? Upgrade the internals? Change the capacity? The 3.0SC engine is a lovely sweet spot in the air-cooled era and makes you want to rev it out to enjoy its full range – I'd be inclined to keep the capacity the same and retain its originality, and look at other upgrades for it such as performance exhausts. There are lots of options to upgrade that don't have any downsides other than extra costs and loss of its authenticity.

If your car is already modified then it would be a great route to explore if you want some added power and torque. However, it's easy to get carried away. Think about what you use you car for. Is it a show piece, a casual drive out, or a Sunday morning car that gets driven hard on those cold, crisp mornings? All of these can influence the route that you'll eventually go down. Good luck with the rebuild!

'Just' a 996?

Dear Sir,
Just sat on my lunch at work reading your magazine's 'Living the Legend' section, and your column about your 996. When you say "it's just a 996", what's wrong with the 996? It's a brilliant car which many magazines are now starting to say. The ugly duckling is turning into a swan. There's so much love for the 996 now that surely no Porsche owner should say "it's just a 996"?

Be proud of what you own. We pay out god knows how much to buy these cars and look after them. Moreover, it's the feeling they give you, the smile on your face when you drive them. That's one thing money cannot buy.
Stewart

You're right Stewart, it's not 'just' a 996, it's a fabled 911. Perhaps I shouldn't be so self-deprecating in regards to my 996 in 2022.


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PORSCHE

CARS TO BUY IN 2022

Now in its eighth year, our annual focus on the Porsche marketplace for the year ahead identifies the models the experts are tipping for good news in 2022...

Written by **Kyle Fortune**

We're entering the third year where the world's still coming to terms with a global pandemic. Predicting what's going to happen next is, arguably, a fool's errand. What is certain though is that people are still buying cars, taking the attitude of 'why not?', and 'life's too short'. If the topsy-turvy world we're living in has done one good thing, it's challenged people's perceptions and shifted mindsets. The result is plenty of buyers looking to fulfil dreams – usurping previous caution – and buying cars that they've long promised themselves.

With financial returns elsewhere not performing particularly well, and less need for mundane daily car use and the associated costs of them because of home working, coupled with fewer foreign holidays, there are many with money to spend. And cars are still seen as a safe place to put money – and an enjoyable one, too. As nice as a healthy bank balance is, there are greater joys to be had from owning something tangible, and if that happens to be something that delivers thrills when you're using it, so much the better. Because many people have moved out of cities and into houses with garaging, there's now the chance to put something in it.

And what's better than a 911? Not much else, as most readers will no doubt agree. Throw in a new car market that's all over the place due to chip shortages and the legacy of shutdowns, and the marketplace for cars is a shifting landscape. Even so, we've taken our annual look at how 911 sales are doing, tapping into the extensive knowledge of our proven team of experts in the field, and looking to highlight some trends and opportunities in the ever-changing world of 911 sales. One thing's for certain: there will always be choice, with Porsche announcing that in 2021 it delivered 38,464 911s to customers – more than it's ever done in a year. This is an impressive achievement given the circumstances, and means more 911s to pick from in years to come...

BEST-VALUE BARGAINS

We highlight the models that offer a lot of car for the money when compared to other 911s at a similar price point

There are differing ways of approaching value, as our experts demonstrate, but they largely come to the same consensus with one model being repeatedly mentioned by all. Paragon's Jamie Tyler says, "The best value cars are the ones that lose the least money, or possibly increase in value over time."

We're not necessarily talking inexpensive then, with the Paragon team suggesting that any Porsche sporting a GT or GTS badge can be considered good value, because while you'll spend a decent amount on your initial outlay, the eventual return (should you ever wish to sell it) will be substantial. That said, Tyler's quick to pick up on any smaller-engined Carrera too. As the base model, any Carrera is the foundation for all the differing 911s spun off it, and Porsche rarely takes liberties engineering on the core model in the range.

Simple, unfussy Carreras are echoed elsewhere by our experts in the value class. This is because they're often overlooked for either more powerful S models or other derivatives and, in most cases, unjustifiably. There's a huge amount of love out there for the 997 Carrera among our group. Phil Raby, of Philip Raby Specialist Cars, loves the looks and drive of the 997.1 Carreras. Jonathan Franklin of Jonathan Franklin Cars also picked up on the 997 Carrera, saying: "There are known issues with them, but we know the checks and remedies, and at around £25,000, they're an absolute bargain.

Jonathon Ostroff, from Hexagon Classics, is another who's quick to identify the demand for the base 3.6-litre 997 Carrera, saying they're so often bypassed for the more powerful versions, yet they're extremely sweet to drive, with ample power and fine handling, and modern enough to be a useable proposition day-to-day should you desire. Franklin agrees, suggesting that with the swell in interest in 996s of late, the 997 has been overlooked a bit, and looks like the better value proposition against the 996, highlighting its better build quality and styling.

Franklin says: "A 997 3.6 is really, really nice to drive. In fact it's a beautiful car to drive. Look at the market for 964 C2 coupes. I think the 997 C2 is much the same. People will, and are, starting to seek them out, and there aren't that many out there that are stock, have sensible mileage and have been properly looked after." He adds it's not a car that he sees as a means of getting you rich, but a good one will serve you superbly as a car to enjoy. Furthermore, if it's properly looked after, it's unlikely to ever lose you any money. Raby goes so far as to say many consider the 997 as the last 'true' 911. Strong sentiment there, and not without merit too, with the 997 Carrera being a real favourite among our assembled pool of experts – and rightly so.

Our value runner for 2022 has to be the 997 Carrera then. The experts are largely in agreement that it's a car to seek out if you want a usable, enjoyable 911 at an attainable price. With the eulogising here, don't expect those prices to stay so affordable as the market starts to wake up to what it's missing out on and good ones get harder to find. So, if you're looking, we'd suggest you start moving on actually buying, before everyone else does.

BELOW Our experts are unanimous in their appreciation of the 997.1 as a great-value 911

BELOW Aside from the obvious 'GT' contenders, our specialist panel have indicated the 997 Turbo is an ever-popular purchase

HIGHLY SOUGHT-AFTER

Sure to be a safe bet and a popular purchase for the year ahead

"Everyone has an opinion on their favourite 911, or the best one," says Jonathon Ostroff, but even so there'll always be some models that will always be sought-after and coveted. No more so in recent years than the GT models and GTS cars. All our independents agree that since their introduction these have been rock-solid places to put your money, with every one of them immediately mentioning them when asked.

Whether that's value or a safe bet depends on your standpoint. Yet it's difficult to deny that anything with the letters 'GT', be it followed by an 'S' or a '3', or in the slightly more rarefied sphere with a '2', and joined with those other two evocative letters of 'R' and 'S', is a buy you can make with confidence because the market is strong. Many mention the 997 Carrera GTS manual Coupe as the embodiment of this, with Phil Raby likening it to the Holy Grail, though he's quick to add that you shouldn't rule out a PDK version because it's such a good transmission.

As a keen watcher of 997 GTS prices since driving it on its launch, it's been frustrating to witness that to all intents and purposes it's never really depreciated, and the best are well into the appreciation financial curve. Depressing perhaps for those among us who might have hoped to acquire one at the bottom of the market, because there's never really been a bottom of the market.

That GTS magic hasn't been concentrated on just the 997 model either, with subsequent 991s also finding a lot of favour among buyers. According to our experts, the combination of GTS-specific elements within its lengthy equipment list makes it a highly desirable purchase to a sizeable tranche of 911 buyers. Being the top model in the Carrera line-up does it no harm either, because most typically aspire to the best, most expensive choice in the line-up. Raby says: "The 991.1 GTS is a cracking car, too, as is the Gen2. I just don't get the snobbishness over the Turbo engine cars."

Up the focus and bringing it back to natural aspiration, and Jonathan Franklin also picks out the GT3 as a safe buy. He highlights both the 997 and 991 models as ones to go for, although he's also quick to mention the 997 Turbo as something to consider. He's not alone here, with Raby also mentioning the Turbo in his choices in this category, loving the performance and capability. Franklin recently sold a 997 Turbo that he drove daily, and immediately regretted it. The GT3's a bit more specialist, appealing to a different buyer – or at least one with differing intentions and expectations. If you're after a banker that you can use regularly, the Turbo's a compelling choice, although both Raby and Franklin say that the blown car could also fit into one of our following categories.

The team at Paragon echo the sentiments of our experts around the GT3 and GTS models as ones where you'll be secure in spending your money: "absolute dead certs," says Jamie Tyler, especially if the specification is special or there's an interesting PTS (Paint to Sample) colour involved. Tyler also highlights air-cooled cars as being solid performers in relation to being a safe bet. Yes, those air-cooled cars do move price-wise, but it's a slight adjustment (either way) occasionally, rather than seismic revisions. In the air-cooled sphere, both Franklin and Raby mention the 3.2 Carrera as a solid choice.

MONEY-MAKERS

These are models that specialists believe will appreciate handsomely in either the short- or long-term

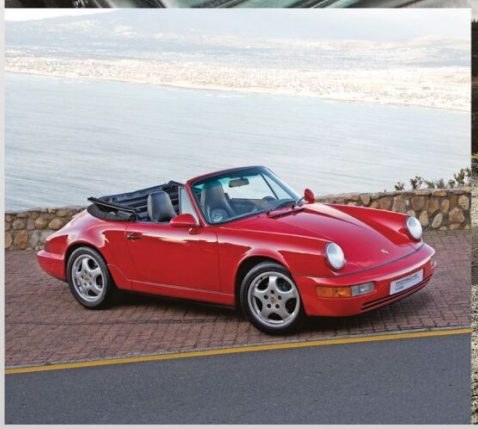
It's a mark of the genuine enthusiasm among our assembled experts that talk of appreciation is primarily in relation to elements of the drive – the feel, the engagement and the joy that buying and, crucially, using a 911 will bring you – rather than in the financial sense of the word. But, hands up, and unapologetically, we're talking here of cars that might appreciate in value. However, as with everything here we're going to throw in a proviso, like the small print or hastily read tail-end in financial adverts: investments may go up as well as down. Is investment a dirty word in relation to cars? Perhaps, but it's all part of the market and, looked at rationally, there's a decent argument that can be made. The glitter of the blue-chip investment cars at the top of the marketplace do little to harm the values of those below it – and everyone can benefit from that.

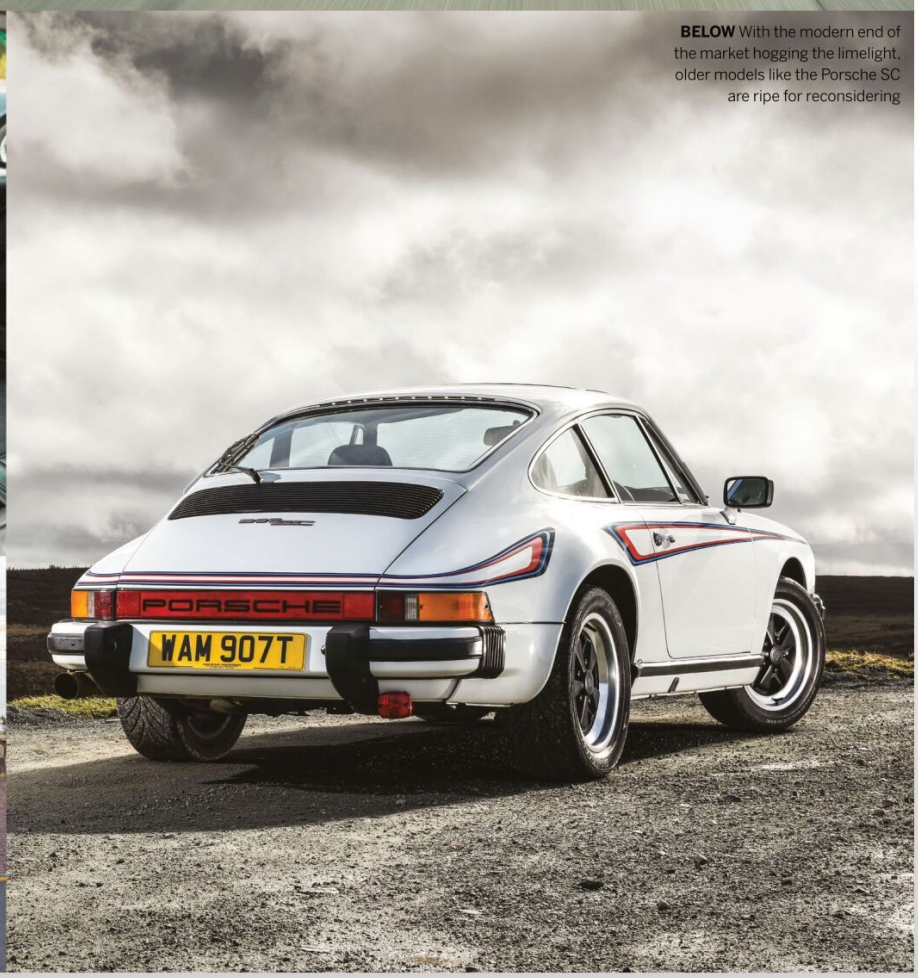
We'll keep it pretty brief, though, because outside those with access to quick, silly-overs flipper cars like 992 GT3s/Tourings/Turbo Ss in the crazy new car marketplace at the time of writing, there are few 911s that are likely to see meteoric price rises in the coming years. Think slow and steady gains with some though, and there's a bit more to pick from.

Paragon's Jamie Tyler suggests that the time is right again for the 993 Carrera, having been overlooked in recent years, with buyers snapping up 964s instead. Prices are on the rise as a result with the very finest, low-mileage cars being very strong propositions among collectors. Jonathon Ostroff concurs, while Phil Raby thinks that air-cooled money will be in the 911 SC, pointing out its relative scarcity and how enjoyable it is to drive. For water-cooling at an attainable level then, Raby highlights some opportunity with the 996 Carrera 4S, having witnessed prices first soften and now start a turn for the better.

Both the 996 and 997 Turbo models, either manual or Tiptronic/PDK, are all slowly on the up because unmodified, reasonable mileage cars are becoming increasingly difficult to find. Jonathan Franklin says in relation to serious appreciation it's a case of finding cars that aren't run of the mill, but as Jonathon Ostroff states: "Buyers are savvy." So too are sellers today, with owners of special cars tending to know their value and pricing them accordingly or, too often, somewhat optimistically. The collective opinion, then? Buy because you want it, not because you want a return. However, buy right and you can do both. As Franklin says: "For classics – proper classics – prices will continue to firm up. There's nowhere else to put money safely and you'll get a better return in the garage than in the bank."

BELOW The widebodied 996s have been singled out for modest investment potential, providing they are low miles with a great spec





BELOW With the modern end of the market hogging the limelight, older models like the Porsche SC are ripe for reconsidering

THE FORGOTTEN FIVE

The models that people haven't really been talking about of late, but shouldn't be overlooked or discounted

In our informed world, no 911s are 'forgotten', but like the 993 Carrera, there are a few cars that are overlooked. As trends shift, other cars take prominence, with the effect that some drop out of buyer's consciousness. They're all worth considering because there's no such thing as a bad 911, just different ones. The feeling among our experts is that with all the focus on the air-cooled marketplace on 964s, its predecessors – the SC and 3.2 Carrera – have seen a corresponding drop in interest.

That's wrong, and Jonathan Franklin sums it up perfectly: "An SC or 3.2 Carrera is always worth having, but they've been overlooked recently. At the price point they're at, in relation to other (non-Porsche) classics out there, they're in a completely different league, be it their engineering, their performance or how they drive." This is solid advice that's pretty much echoed by all our experts, with many saying that the 1970s cars haven't been shining so brightly of late, thanks to all the interest at the more modern end of the marketplace.

Turbos come up regularly among our experts when discussing cars that buyers might have been missing of late. The 996 Turbos are mentioned by Paragon's Jamie Tyler, while Franklin and Phil Raby both champion the 996 and 997 Turbo models. Jonathon Ostroff says that there's more interest now in 996/997 Turbos, as people come to appreciate their incredible performance and compact dimensions in relation to the current models and usability. That they're unencumbered by the plentiful tech of the new models while offering modern amenities, comfort and shocking pace is another motivating factor among buyers. Keeping with the Turbo theme, Tyler champions the 930, making a case for it for a number of reasons, not least its historical significance to the company – remember, the first Turbos were homologation cars. Furthermore, the fact that its supercar contemporaries like the Ferrari F40s, Testarossas and the Lamborghini Countach – the cars it shared space with on posters in the 80s and early 90s – are all in a significantly higher price bracket. That alone makes it look a bit of a bargain.

The 991.1 in its various guises gets a mention by many, too. It sits in that strange fallow period that afflicts previous generation models for a while: the buzz around the 992 has seen the 991 falling out of favour, but incorrectly so. Tyler is quick to pick up on 991.1 Carreras, seeing them a very usable, desirable, fast and capable daily, which is something all our experts are in agreement with.

Rather than individual models, each of our specialists highlights body, LHD or transmission types that have traditionally been out of favour among 911 buyers – often unfairly. LHD cars, once regularly and easily sold back to Europe, are difficult to sell abroad now thanks to Brexit, meaning if you're prepared to sit on the 'wrong' side of the car you'll save a decent amount of money – in the UK, obviously. As to body types, Raby comments: "Air-cooled Cabriolets are undervalued especially as, typically, very few owners take their old cars out in the rain. Targas have seen a resurgence in interest and pricing as a result thanks to the 991 Targa effect, but Cabriolets have a better roof than the Targas." He's quick to concede that a Cabriolet isn't as pretty with the roof down, but fit the tonneau cover and that helps, and anyway, he says: "You can't see it when you're driving it, and you'll have plenty of fun."

Ostroff's in the same roof-down camp: "Porsche charges more for a Cabriolet when it's new, but they're less money when used, which is unusual in the marketplace. Among the other high-end marques, it's the open models that are typically the most desirable." With 911s the opposite is true and all our experts agree that's an opportunity. All say you shouldn't rule out Tiptronics or PDKs or, even in Raby's case, the Sportomatic, which he thinks is a quirky talking point and relatively rare, too. Tyler says of the Tiptronic: "In terms of build quality and reliability they're brilliant. Yes, it's not a good gearbox if you're going to be doing track days, but if you live in the south-east of England and spend a lot of your time stuck in traffic it's brilliant: you can still make it engaging and fun if you want it to be. Typically, the bigger engine cars/Turbos suit the gearbox more, so don't underestimate the Tiptronic gearbox."

The fact there are so many options available in this category, taking into account both budgetary and generational considerations, only highlights the potential in the current Porsche marketplace. There may be some 'hot' new 992 models incoming this year, but 2022 is also ready to present you with a wealth of opportunity in the used Porsche marketplace too – so long as you're looking in the right places and buying appropriately...

THE DOS AND DON'TS

Our experts have offered their tips on the cars to buy in 2022, so here's the best of their advice on *how* to buy

Don't buy the cheapest, it's always a false economy, you'll end up paying more in the long run

PHILIP RABY, PHILIP RABY CARS

Do have a proper inspection done

JONATHAN FRANKLIN, JONATHAN FRANKLIN CARS

Do regularly start it and get it properly warm – better still, drive it

JONATHAN OSTROFF, HEXAGON CLASSICS

Do look for cars that have been dry stored, and do so yourself

JONATHAN OSTROFF, HEXAGON CLASSICS

Do buy it because you want it. I only ever buy cars I love, because I think if I love them, someone else will

JONATHAN FRANKLIN, JONATHAN FRANKLIN CARS

Don't buy as an investment, use them. That's where their true value lies

Do look for dealers and specialists who have their own workshops, because they'll have a greater understanding and ability to assess the condition of their cars

JAMIE TYLER, PARAGON PORSCHE

Do use your 911 after you've bought it, otherwise what's the point?

PHILIP RABY, PHILIP RABY CARS

Don't risk a car without service history and provenance – they're vital to the value of 911s

JONATHAN OSTROFF, HEXAGON CLASSICS

Do buy the very best car you can, and stretch that budget – it'll pay off in the long run

JAMIE TYLER, PARAGON PORSCHE

Do approach a 911 purchase with a different mindset. There are all manner of ways of buying. Explore finance – you really could buy your 911 for less than you'd pay monthly for a run-of-the-mill saloon or hatchback

JONATHAN FRANKLIN, JONATHAN FRANKLIN CARS

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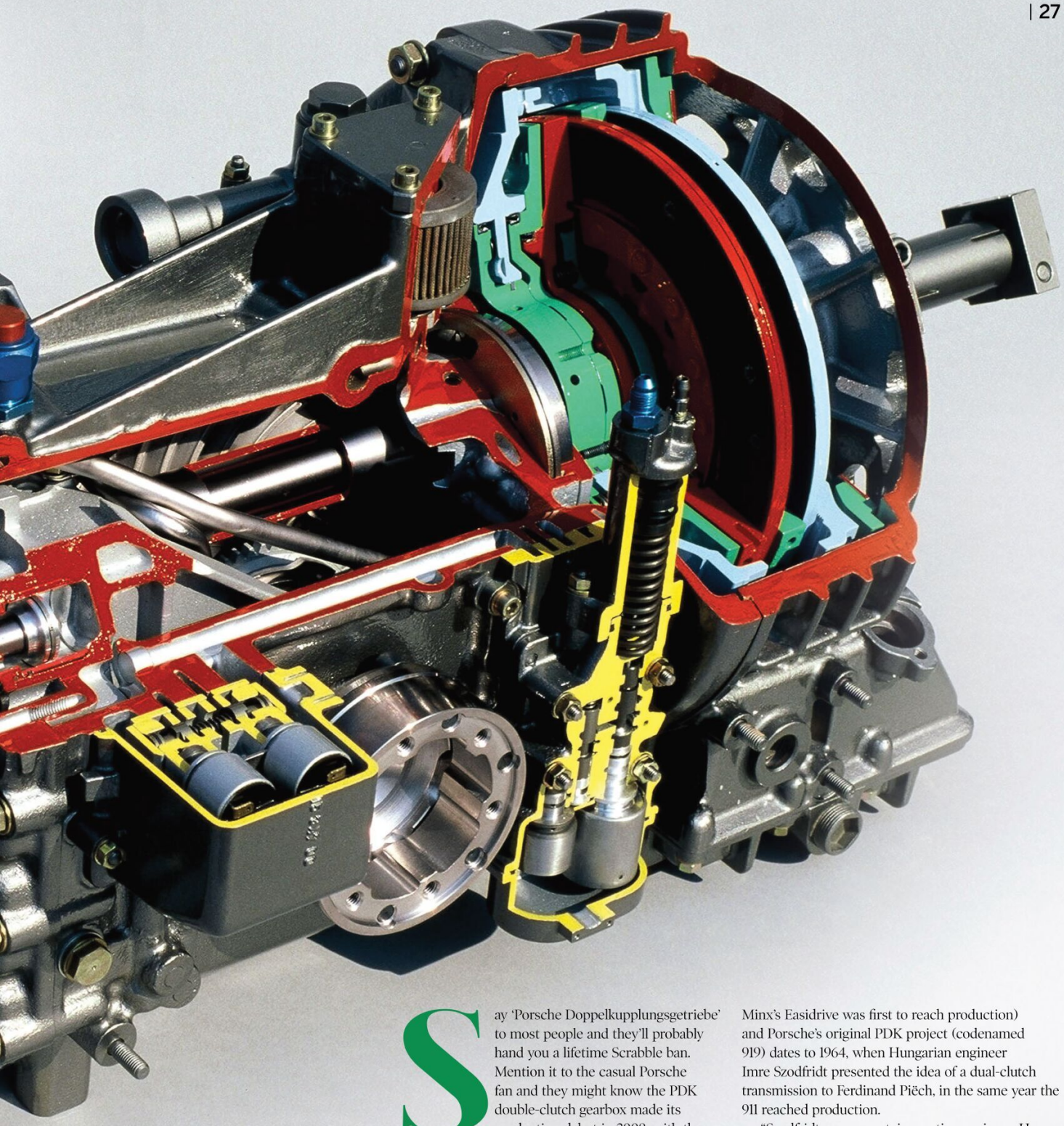
The History of PDK

Porsche's groundbreaking double-clutch technology celebrated its 40th birthday in 2021. Discover how it's evolved from race to road cars over the four decades

Written by **Ben Barry** Photography courtesy **Porsche**



Say 'Porsche Doppelkupplungsgetriebe' to most people and they'll probably hand you a lifetime Scrabble ban. Mention it to the casual Porsche fan and they might know the PDK double-clutch gearbox made its production debut in 2008, with the 997-generation 911's mid-life facelift (where it replaced its predecessor's Tiptronic automatic). The more knowledgeable might tell you that Porsche blooded PDK technology on its 956 Group C race car in the early to mid-1980s.

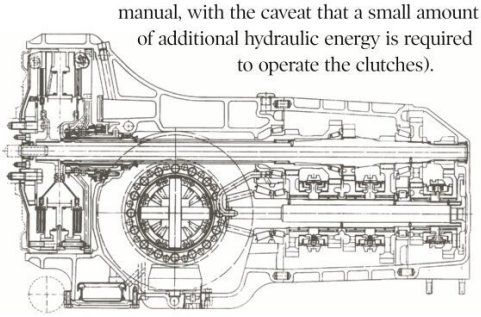
Both statements are true, of course, but they don't tell the complete story. In fact, other engineers and manufacturers experimented with dual-clutch transmissions as early as the 1930s (the 1961 Hillman Minx's Easidrive was first to reach production) and Porsche's original PDK project (codenamed 919) dates to 1964, when Hungarian engineer Imre Szodfridt presented the idea of a dual-clutch transmission to Ferdinand Piëch, in the same year the 911 reached production.

"Szodfridt was a great, innovative engineer. He pushed the PDK project very much, and long before us he had already developed and built a dual-clutch transmission," explains PDK development engineer Rainer Wüst, who took up the project in the late 1970s (and later worked as head of chassis development at Weissach until 2009). "His big challenge was there were no electronics [nor series-production electrohydraulic valves] available at that time. So he tried to handle all of this mechanically

– similar to motorcycles today – with gate shifting and cam discs."

Szodfridt's innovative technology was promising but ultimately unrefined in its shifting quality, so it was quietly put to one side. That could have been the end of the story, but in 1979, with the oil crisis of 1973 still in the collective consciousness, the German Federal Ministry of Research and Technology invited manufacturers to develop their vision of the 'Vehicle 2000'. PDK became a key pillar of Porsche's experiments.

"We decided to compare all the available transmission technologies of that time, between CVT, manual and also automatic transmissions, and came to the conclusion that the dual-clutch transmission was a really promising technology for the future," recalls Wüst, who led a team to investigate the possibilities under the watchful eye of advanced development boss Helmut Flegl. Then, as now, PDK was viewed as the best of both worlds, uniting the precision and efficiency of a manual transmission with the convenience of an automatic (Wüst describes PDK efficiency as almost as good as a manual, with the caveat that a small amount of additional hydraulic energy is required to operate the clutches).

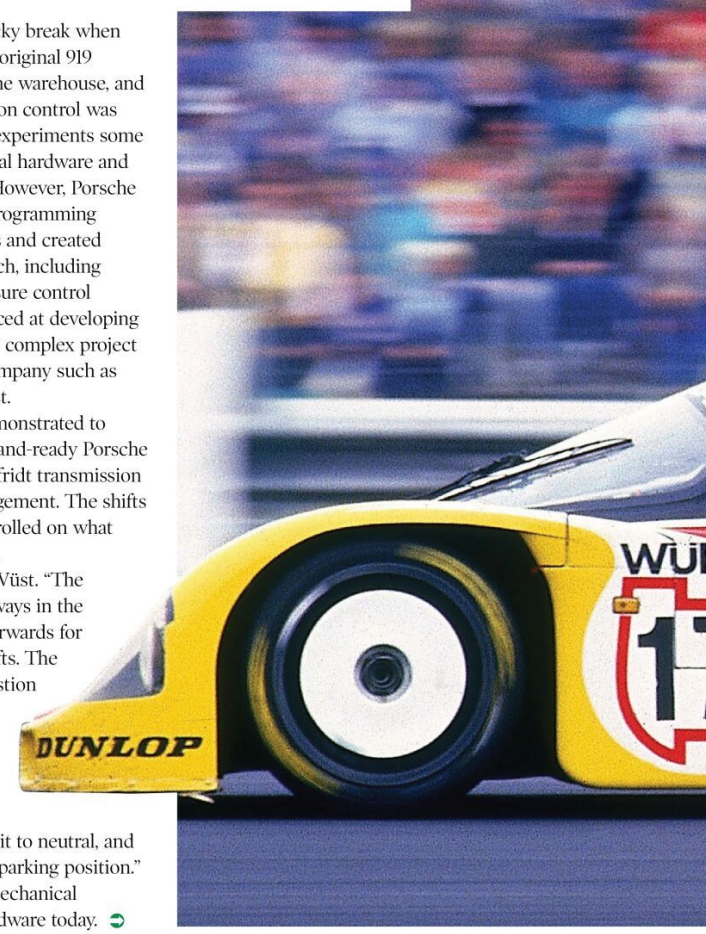


The development team got a lucky break when they were able to locate two of the original 919 prototype transmissions in a Porsche warehouse, and by then Bosch Motronic transmission control was available, unlike during Szodfridt's experiments some 15 years prior. Much of the additional hardware and software was developed in-house. However, Porsche engineers constructed assembler programming languages to control the electronics and created other bespoke hardware from scratch, including actuators, solenoid valves and pressure control valves. "Porsche was very experienced at developing transmissions, but this was a highly complex project and quite a big effort for a small company such as Porsche at that time," explains Wüst.

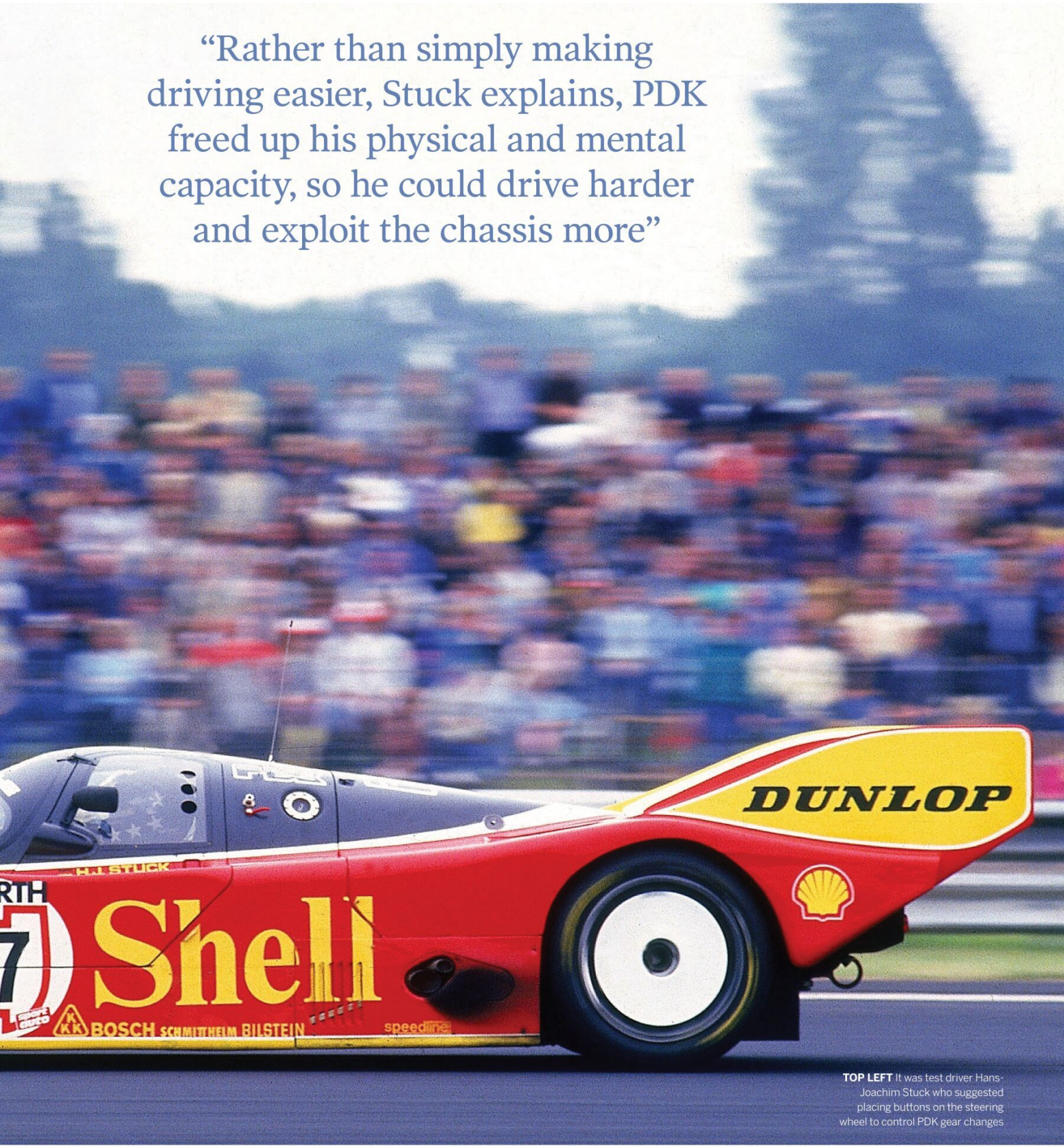
PDK was initially tested and demonstrated to management in 1981 using a rough-and-ready Porsche 924, fitted with the five-speed Szodfridt transmission at the rear axle in a transaxle arrangement. The shifts were either fully automatic or controlled on what appeared to be a manual gear stick.

"It was a kind of joystick," says Wüst. "The lever was held with spring force always in the middle position, and you pushed forwards for downshifts, or to the rear for upshifts. The shift direction was actually a suggestion of Jacky Ickx, so your hand followed the vehicle deceleration or acceleration during the shift movement! If the lever was moved to the left, it switched to automatic mode, a push to the right switched it to neutral, and right-forward was intended for the parking position."

Beneath the surface, the basic mechanical principles were much like PDK hardware today.



"Rather than simply making driving easier, Stuck explains, PDK freed up his physical and mental capacity, so he could drive harder and exploit the chassis more"



TOP LEFT It was test driver Hans-Joachim Stuck who suggested placing buttons on the steering wheel to control PDK gear changes


PDK

Essentially two gearboxes in one, PDK uses shift forks like a manual gearbox to select each gear crisply. It removes the clutch pedal like an automatic, but uses two separate clutches inside the transmission (initially dry clutches, switching to wet clutches for production): one to control odd gears and reverse, and the second clutch for even gears. Both clutches connect the selected gears to the engine via two separate output shafts. This enables the next gear to be pre-selected, much like a driver slotting a gear but keeping the clutch depressed – the key difference being that drive can still flow to the wheels because another gear is selected.

A far more presentable 944 Turbo followed, with period press footage showing a woman at the wheel and a male voiceover stressing PDK's ease and convenience. Yet with R&D boss Helmuth Bott keen to prove the technology in motorsport, Porsche began experimentations with the 956 Group C racer from 1983.

Living just 125 miles away from Weissach in Garmisch, works driver Hans-Joachim Stuck was better placed to carry out testing than colleagues such as Derek Bell and Jacky Ickx, and so developing PDK became a key part of his contract, which he signed at the end of 1984.

"I was really happy about it – I like driving, I like racing and I like testing. These 1000s of kilometres of testing were an important part of my life," recalls the 1986 and 1987 Le Mans winner.

Stuck would leave the pits using a clutch (just like paddleshift racecars today), then control the five forward speeds with a gear lever to the right of the steering wheel, much like a 917, but without the clutch, and by simply pushing the gear lever forwards for downshifts and pulling it back for upshifts. Later, at Stuck's suggestion, two buttons appeared on the steering wheel, both arranged within reach of the right thumb: the upper button for upshifts, the lower button for downshifts.

"From the first lap I said, 'Oh, that's wonderful' because you can concentrate on driving, especially keeping your hands on the wheel in the later stages [of development]. There was a lot of downforce through fast corners and [you had to make] big steering force, so this was one big advantage. The second advantage was no more mis-shifting, because that could be expensive if an engine fails. And third, the most important one, was a lot of gain in lap time because normally when you go off the throttle the turbo boost goes down." Rather than simply making driving easier, Stuck explains, PDK freed up his physical and mental capacity, so he could drive harder and exploit the chassis more.

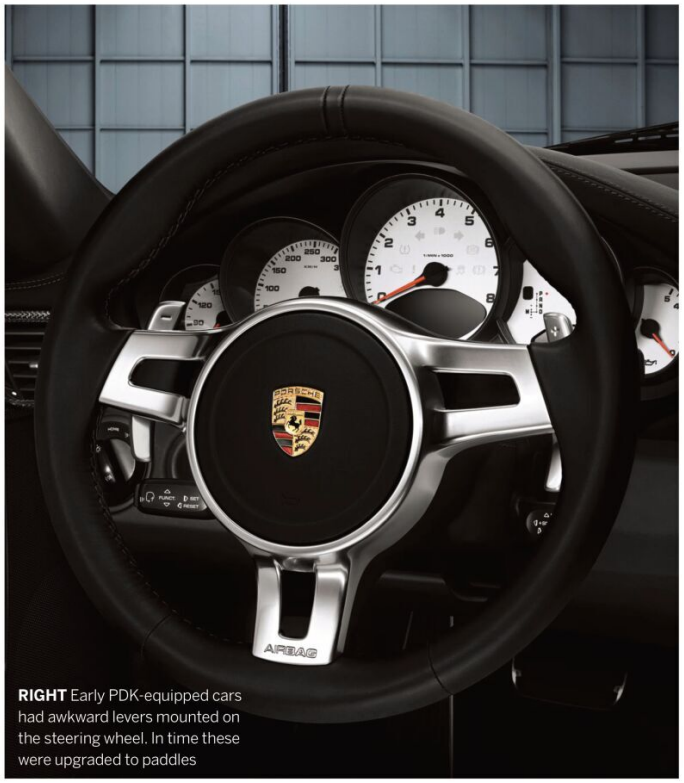
It wasn't all plain sailing, though. There was initially a 40kg weight handicap (approximately five per cent of the 956's overall weight), which dropped to a still-considerable 25kg later in development, and there were countless reliability issues: oil seeping on to the clutches, problems with synchronising the two clutches, and recurrent failures. A PDK-equipped 956 first raced at round eight of the 1984 World Sportscar Championship, but only by Monza 1986 did the PDK system run without problems in the updated 962. The 962 didn't just finish the 360km race, however. Hans Stuck and Derek Bell won it outright, and from then into 1987 PDK proved both reliable and faster than its manual sibling.

Porsche also supplied a dual-clutch transmission for the Audi Quattro S1 E2 (the ultimate short-wheelbase be-winged Quattro) in world rallying, where success came much faster. Walter Röhrl won on the car's first outing at the Semperit Rally, Austria in November 1985.

The next logical step was to transfer the technology to the road. However, the Porsche 969 – a planned successor to the high-tech 959 successor, which would have introduced PDK to Porsche road cars – was scrapped. Rather than PDK, Porsche instead introduced the Tiptronic ZF fully automatic transmission on the 964-generation 911 in 1990. The economic context of the time no doubt explains why, with Porsche sales sliding from around 40,000 units annually to just 15,000 in 1989.

"It was a bit of an up and down [time], I've got to be honest," reveals Wüst, "because there was a time that not only Porsche, but the entire automotive industry was suffering quite heavily, economically speaking. And that was the time when I almost lost faith myself... fortunately, in the 1990s, things got better and then [PDK] actually turned into reality."

Ultimately, however, it wasn't Porsche but Volkswagen that brought a six-speed dual-clutch transmission to the mass market, with the Mk5 Golf R32 quickly followed by the Mk5 GTI. It was branded DSG, for Direkt-Schalt Getriebe, or Direct Shift Gearbox. "This is my personal view, but certainly for series production development of PDK you need to invest a lot of money, and that can only be done by



RIGHT Early PDK-equipped cars had awkward levers mounted on the steering wheel. In time these were upgraded to paddles

a major player such as Volkswagen," explains Wüst. "Ferdinand Piëch was convinced PDK was the future, he asked Volkswagen to develop it and they also developed the wet clutch, and after Volkswagen had kind of blazed the trail, the other suppliers followed suit. After that, all kinds of sports cars were equipped with [dual-clutch transmissions], but that was only possible after Piëch had taken the fundamental decision for Volkswagen."

Currently director for alternative powertrain concepts at Porsche, Christian Hauck helped bring PDK technology to production with Porsche, initially working under Wüst for three years from 1998. "The decision was taken five years earlier [before series-production of PDK in 2008]," says Hauck. "We were discussing a new powertrain and drivetrain concept for the sports cars and the Panamera, which was a brand new car. We picked up the idea of the dual-clutch transmission, it was an easy decision, but there were still lots of challenges, lots of problems to solve."

Hauck has helped develop PDK throughout series-production. He's worked through the controversy of the original, flawed rocker-switch interface that was soon dropped for paddleshifts (the rocker switches were in a similar position on the steering wheel to today's paddleshifts, but the driver could pull either rocker switch towards them for a downshift, or push either away from an upshift), and helped prove PDK could actually make the GT3 experience more blisteringly intense (letters to the editor, please).

Today, around three-quarters of all 718 and 911 models are equipped with PDK, rising to as much as 100 per cent for other model lines. Asked how much shift times have improved, Hauck counters that the first-generation was already very fast, and that bigger gains have come from comfort and convenience. PDK continues to evolve to this day.

"We're now developing the third-generation of PDK, and when you look in the recent past, we already see lots of development: the shape has changed, the number of gears has changed [from seven to eight], and we have included the e-motor for the hybrids as part of the transmission. It's using the same oil for actuation of the clutches, so it's continuously in development."

However, torque convertor automatics have made significant gains during PDK's lifespan, and even BMW M cars are switching from dual-clutch technology to torque convertors because their vastly improved performance now makes it harder for engineers to justify the increased cost of a dual-clutch system. Will Porsche follow the same path?

"For us [PDK] still has advantages," confirms Hauck. "One thing is launch control. Regardless of how good your torque convertor is going to work, you're never going to have a launch control possibility. Regarding efficiency, some transmissions are getting very close to PDK, but they're not as good as PDK yet, and thirdly one very important thing for us is that we have the possibility to change gear ratios for every single gear in the gearbox, so we can really make it suitable in the perfect way to every car. High revs are also not really possible with automatic transmissions – 6000rpm is maybe the limit, but with a PDK you can also go up to 10,000rpm if that's necessary. A GT3 with 9,000rpm and a torque convertor wouldn't be possible."

Electric cars will eventually consign PDK to history, but Hauck says conventional combustion-engine cars and hybrids will continue to use PDK for "10, 15, 20 or even 25 years". He steadfastly rules out Porsche switching to other two-pedal transmissions, confirms they'll continue with eight ratios for PDK, and envisages "one, two or three" more evolutions of the technology, as efficiency and refinement continue to be increasingly important for hybrid applications.

It's all a long way from Imre Szodfridt in the 1960s, or Hans-Joachim Stuck pounding a 956 Group C racer round Weissach in the 1980s, but every PDK-equipped Porsche owes a debt to those earlier experiments that all began four decades ago. 911

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THE BIG INTERVIEW

Valentin Schäffer

Although known affectionately as "Turbo Schäffer" for his work on the turbocharged 917s, it was a smaller engine that was his favourite, as the famed engineer reveals...

Written by **Glen Smale** Photography courtesy **Porsche Archive**

Valentin Schäffer started as an engine mechanic with Porsche in 1955, aged just 24 years. The Hungarian-born technician quickly showed an aptitude for hard work and a desire to solve problems – attributes that cemented his future not only with the company, but also with his peers. His early work saw him involved in the development of the four-cam four-cylinder engine that powered the Porsche 550 A Spyder, as well as the eight-cylinder engine for the Formula One 804 Monoposto.

Valentin, who worked at Porsche for 34 years, has just celebrated his 90th birthday. But the humble engineer never saw work as a bore. In fact it was quite the opposite, because the visionary engineer would frequently spend Sundays at the workbench in an attempt to extract a few more horsepower from an engine.

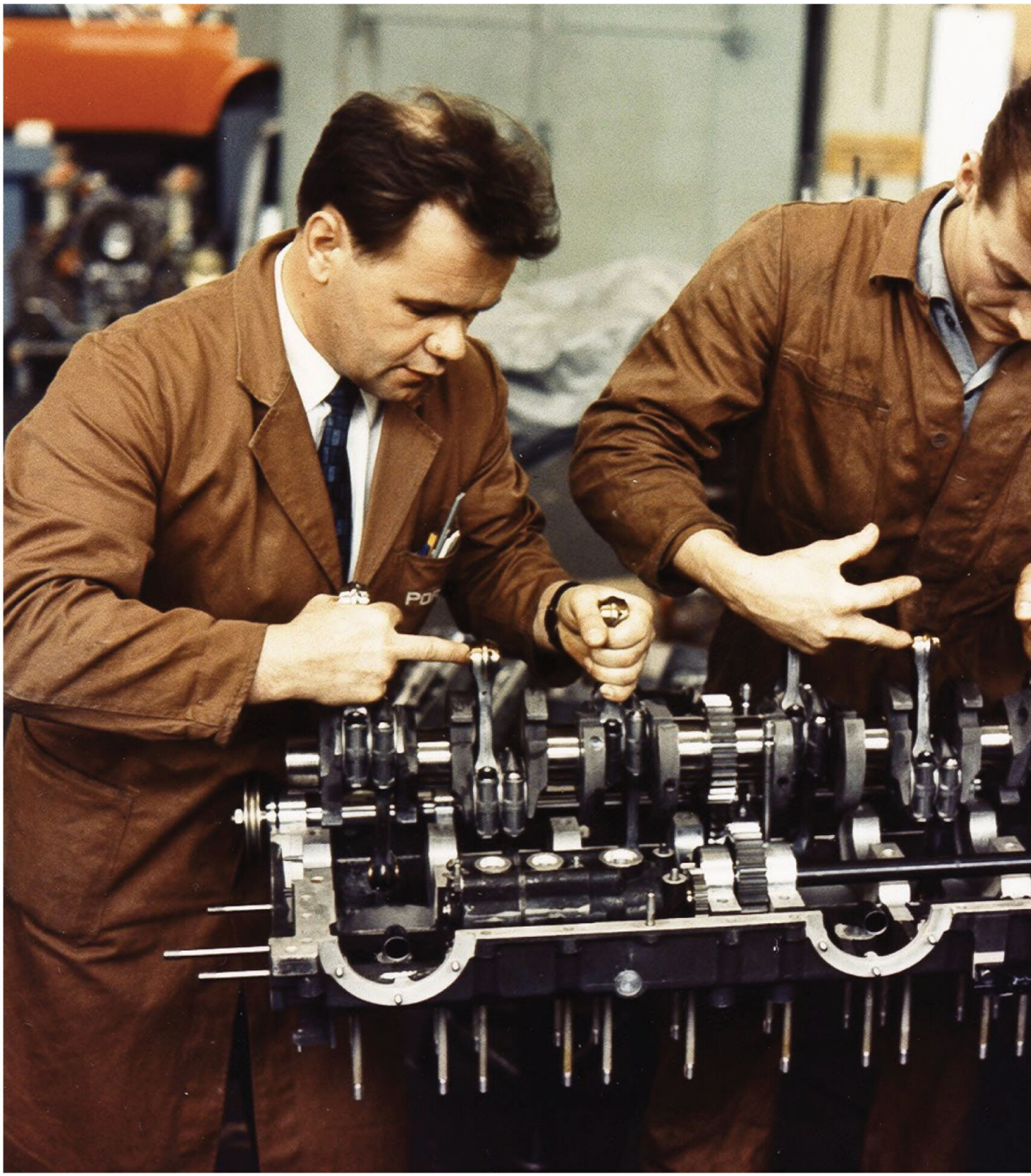
Although he officially retired in 1989, Valentin remained closely associated with the company, serving it for another five years, and returning frequently thereafter to Porsche in response to interview requests from the media. Here he shares some of his special memories and achievements during his three decades with the company.

In the beginning, Porsche stuck with its concept of smaller engines and lightweight race cars. But how could Porsche hope to remain competitive and threaten the bigger players?

That was easy: we were trying to save weight all the time, and so we always looked at where else we might reduce weight. As a result, we made our cars very light with only around 250hp, but we had a lot of torque in our engines. About half the time we raced at less than full acceleration, so we had to have more torque to make it easier to overtake our competitors. With more torque the drivers didn't have to change down through the gears so often, and so we were able to pass our rivals more easily. This was our advantage.

Which was the best engine in the 904, because you could use the four-, six- and eight-cylinder engines all in one car?

It was the Type 771 (two-litre eight-cylinder), which at this time produced almost 270hp. This was the strongest engine for hill-climb races, and for about four or five years we used this engine. But ➲



ABOVE Gerhard Küchle and Valentin Schäffer during the final assembly of the engine for a Porsche 917 (1969/70)

we were testing all the time, so we were able to constantly improve this engine. This was the best engine. It actually had the highest horsepower, and it even had a little more horsepower than the 2.2-litre eight-cylinder engine.

In 1966 the 906 was introduced with the Type 901 six-cylinder engine. Can you expand on the decision to use this engine and not the proven 771 eight-cylinder racing engine?

The 906 used the 901/20 engine that was fitted with carburettors, and also the 901/21 which had an injection pump. When the young Ferdinand Piëch came to Porsche in 1965, he worked on the 906, but he preferred the 901 engine to the 771. In the mornings we would start working together on the dyno, and he said to me that he would like to run the 906 at Le Mans with the six-cylinder engine, and not with a 771. The 901 engine was used in both the 906 and the 910, but later we ran the 907 race car mostly with the 771 2.2-litre engine in the long-distance races.

> "When I made the 917 turbocharged engine, everybody called me "Turbo Schäffer". The whole world knew me by this name"

One of the 907s completed two 24-hour tests in Florida in December 1967, and we said afterwards, "Okay, let's also run this car in the '68 Daytona race, we have enough drivers." All three cars finished one-two-three [The test car referred to here was the #51 Porsche 907-011, which finished third in the hands of Jo Schlesser/Joe Buzzetta]! For the hill climbs, we used very light material, mainly titanium. It is unbelievable – nobody knew this at the time, but I used aluminium exhaust pipes. They would last for five minutes – just long enough for the car to run up the hill – and when they came back down, it was all cracked. But at this time, we did everything to save weight.

It's not well known how important the four-cam Type 916 experimental engine was in 1967, and the role it played in the later eight- and 12-cylinder engines. Can you expand on this?

At first Mr. Piëch asked another engineer from the production department to develop a four-cam six-cylinder engine, but he said it would take six or seven months. Then he came to me and asked how long it would take, and I said five weeks, so he told me to make it.

We only had the one production crankshaft available which had a 66mm stroke, and there was no time to make up a different one. I wrote down what I needed, and we used a lot of parts from the two-litre 906 (Type 901/20) engine, because Porsche didn't have a bigger engine at that time. Mr Piëch wanted a four-cam six-cylinder engine that was exactly half of the 917 4.5-litre engine, because he wanted to know how much horsepower it could produce. So I fitted different pistons and cylinders from Mahle, increasing the engine capacity to 2.25-litres.

I had two guys with me and together we built one engine in our race shop. When we put it on the dyno to test it, we found that it produced 245bhp. It was a proper race engine, with different intakes and no

BELOW Celebrating the tenth anniversary of the Porsche 956/962 on 9 April 1992 in Weissach. From left to right: Fritz Spingler, Valentin Schäffer, Peter Falk, Gerd Schmid, Helmut Schmid (behind), Hans Mezger, Norbert Singer, Horst Reitter and Eugen Kolb

filters, just like a 906 engine. The camshafts were so heavy – I think each camshaft weighed about 3kg – so we made different camshafts for it that were hollow inside; they were bored out to reduce the weight. It was a good engine for its time, and later we fitted it to the 911R. I remember that in Mugello, Italy, Jo Siffert drove it and he said at the time it wasn't much better than a normal engine, but the engine hadn't been tested on the road.

In the end we built four or five engines, but then nobody needed this engine because we moved up to the three-litre capacity, so I gave the 916 engines to the rally shop together with all the papers that I had. When I retired from the factory, new people who had never been in racing came into that department, and they said we don't need these papers anymore, we want to make a fresh start. So today there's nothing left in the racing department about this engine: no papers or drawings!

The 908 had a three-litre, eight-cylinder engine in 1968. The increase in power from the 908 to the 917 was the largest year-on-year power increase yet.

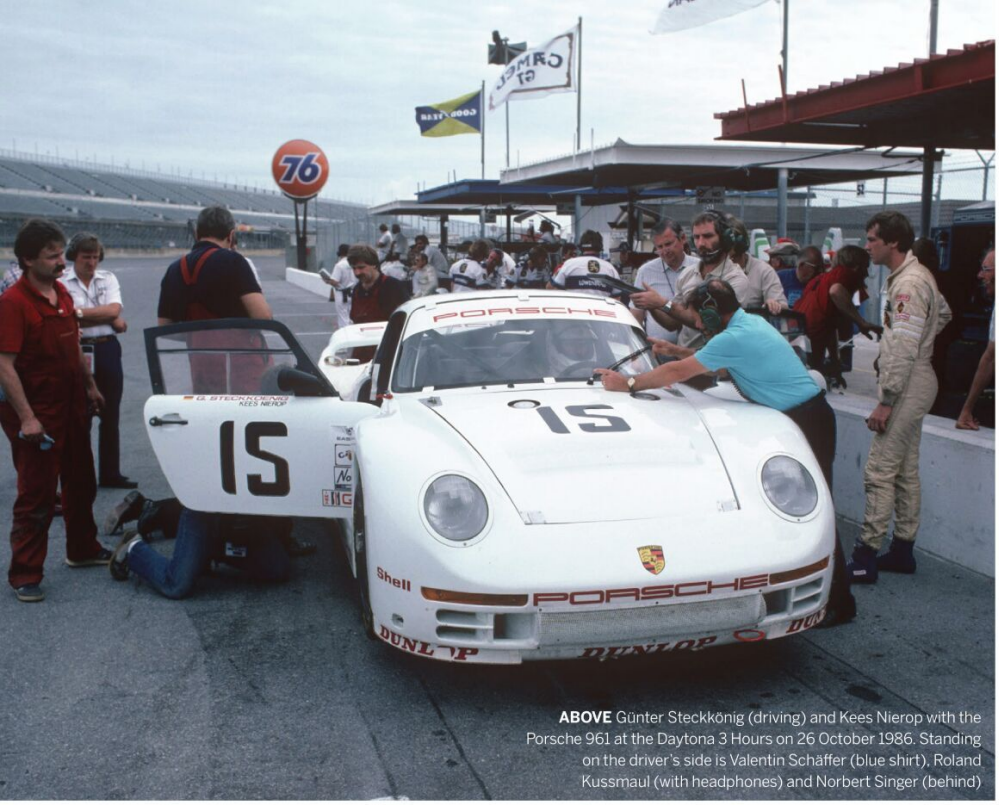
The development each year was driven by the regulations and when they changed for the 1969 season, Mr Piëch said we no longer have an advantage. The 908 was a good race car – it was perfect, really – but the three-litre engine only developed 360bhp, and that wasn't enough, so he said he'd like to have a bigger engine. And so we moved up from the 908 to the 917 with a normally aspirated 12-cylinder engine. It was a very good engine with enough power, and the car was good, too.

You earned the nickname "Turbo Schäffer" for your work on the turbocharged 917s. Can you share how the turbocharged era began at Porsche?

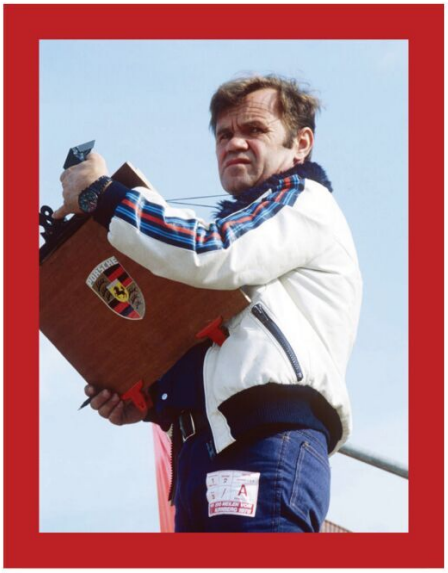
We first started testing with the turbo 917 with (Jo) Siffert here in Hockenheim, Germany. This was before (Mark) Donohue drove the car. We have a special Can-Am test track at Weissach, but at first the normally aspirated engines were much faster around here than the turbo 917. In 1971, I went to America 15 times for testing. I would fly over for half a month and we ran the 917 on the test tracks over there, and eventually we got it sorted out. Then, back in Weissach, we were also much faster than the normally aspirated engine and so finally they said we could take the car to America to race.

The car that we used for Donohue at Mosport was 917/10-011. This car didn't have an aluminium chassis, it had a lighter magnesium chassis. We weren't sure whether we should run this expensive car or not, because we knew it wasn't as strong as aluminium, but in the end we did.

The first race with the 917/10 was in Mosport (1972), and so we tested there for a week before the race. It was unbelievable: the record was 1:16.4 or 1:16.5 set by McLaren, and we did a time of 1:13.2, more than three seconds faster! We were fastest in qualifying but during the 18-lap race we had a problem. Donohue stopped in the pits suddenly and so I asked what the problem was. They replied there was no boost. I opened the hood and I saw that the (pressure-relief) valve was stuck closed. It opens



ABOVE Günter Steckkönig (driving) and Kees Nierop with the Porsche 961 at the Daytona 3 Hours on 26 October 1986. Standing on the driver's side is Valentin Schäffer (blue shirt), Roland Kussmaul (with headphones) and Norbert Singer (behind)



ABOVE With the cars loaded, the transporter is ready to depart for the 1964 Le Mans 24 Hours. Valentin Schäffer is pictured with Karl Dubies

BELOW Vasek Polak (left) leans into the cockpit of the Porsche-Indy Car (Interscope) during tests in Ontario in 1979. To the right of Vasek is Valentin Schäffer, with Danny Ongais behind the wheel

when you accelerate for the turbo to operate, giving you power, and closes when you stop. They didn't know what to do, so I said give me two hammers and I held one on one side of the valve and I hit the opposite side with the other hammer and it opened, and so I shouted GO! Donohue took off and he lapped the McLarens twice, and we finished second!

Roger Penske wanted to try for the closed-course speed record attempt at Talladega Superspeedway in Alabama in 1975, luring Mark Donohue out of retirement for the run. Can you share your memories of this?

The 5.4-litre engine was bigger for sure, but it wasn't as good; you couldn't push it too hard. Penske said he wanted to try for this world record on a closed race track with Donohue. They tested three times and every time they blew the engine. Donohue called me and sent me telexes at this time saying that they were having engine trouble, and asked what they should do. I said to him that they shouldn't use the 5.4-litre engine, but they should use the five-litre engine instead. They could use more boost without a problem because the cylinder walls were much thicker and stronger in the five-litre engine. Donohue thought that there wouldn't be enough power, but I told him that they could just increase the power by turning up the turbo.

This was when I started testing with an intercooler for the first time – we had never used intercoolers before. The main goal was to make it run cooler so that we could easily do six laps, otherwise nobody would be able to beat AJ Foyt's record. We were using 917/30-003 for the record run, then Donohue stopped on one of the testing laps and while I was looking at the engine, someone shouted "Fire!" And they pointed the fire extinguisher at the engine so it looked like there was a lot of smoke. You could see the fire, but we could still use the car. There was a little bit of damage but we polished it out, and so it wasn't a problem. We tested another two laps or so before Donohue set the record.

Which was the engine that you were the most proud of?

I think the best engine for me was the Type 771 two-litre, eight-cylinder injection engine. But when I made the 917 turbocharged engine, everybody called me "Turbo Schäffer". The whole world knew me by this name. They said 'he made the turbo'!

You worked with many different people at Porsche over the years. Who did you enjoy working with the most?

I worked with Norbert Singer for about 15 years or more, and we never had any difficulties. If there was a difference of opinion, we would just say, "Okay, you're right, we'll do it like that." I remember that he would say to me with a smile, "I will not go into your garden!" He was a good guy, and I worked very well with him.

Looking back on your time at Porsche, are there any moments that stand out for you?

Yes, I remember at Porsche they said that they would never change to water-cooling, our system is air-cooling! Something else they said at Porsche was that they would never make a diesel engine. But of course both of these statements have proved to be incorrect! 911

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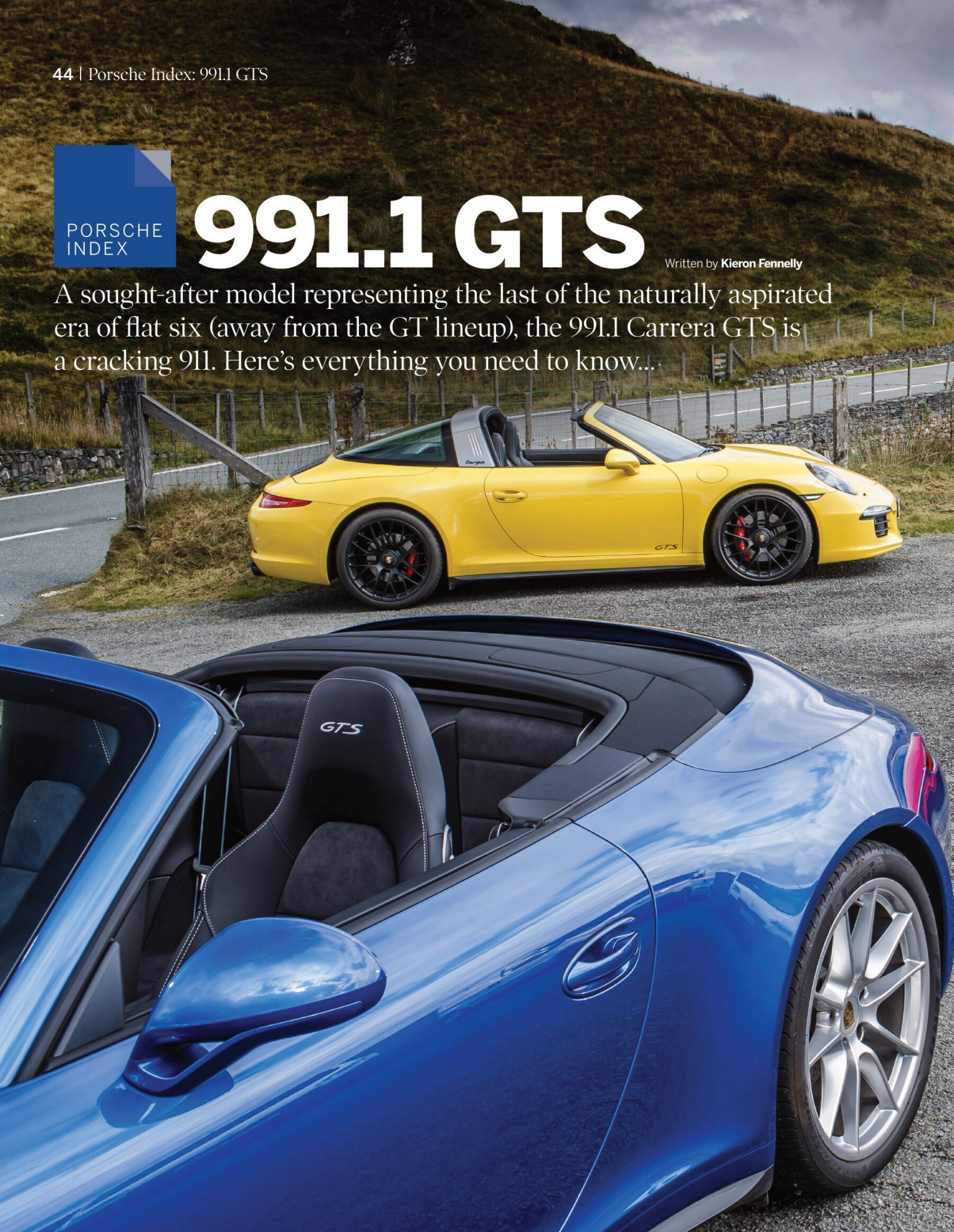
PORSCHE INDEX

991.1 GTS

Written by **Kieron Fennelly**

A sought-after model representing the last of the naturally aspirated era of flat six (away from the GT lineup), the 991.1 Carrera GTS is a cracking 911. Here's everything you need to know...



HISTORY AND TECH

In the modern era (as opposed to the early years when it appeared on the 904, and later as a version of the 924) Porsche brought back the GTS badge fleetingly on the run-out 997, giving an intriguing view, or preview, of what looked suspiciously like a new sub-group. Porsche's intentions became clearer with the 991.1 GTS in 2014: evidently 'GTS' was becoming a category in its own right.

911 project manager August Achleitner described GTS as "corresponding to customer demand for a sporty yet comfortable Porsche." In terms of price and performance the GTS slotted neatly between the Carrera S and the GT3. Porsche made the GTS all the more attractive by endowing it with options which, if all specified on the Carrera S, would have come to significantly more than the list price of the GTS. It was as deft a marketing move as you could imagine and soon enough all Porsche model ranges were sporting a GTS version.

Introduced in 2012, the 991 was effectively the second-generation water-cooled 911. A new chassis with a longer wheelbase and wider track led to better handling – in particular a reduced tendency to understeer and a more refined ride. The only major 'carry over' from the 997 was the 9A1 3.8 engine of the 997.2 Carrera S. First seen in 2008, the 9A1 engine family was much praised. Lighter and torsionally stiffer than the M97, the completely re-engineered flat six would go on to exhibit none of the frailties of its predecessor. Rated at 400bhp in the 991 Carrera S, on the GTS Porsche's optional Powerkit was standard. This increased maximum power to 430bhp and widened the torque curve through enhanced induction (old-school polishing of the ports coupled with a specific aluminium manifold) and modifications to fuel mapping. As a Tequipment extra for the Carrera S, Porsche charged UK customers a breath-taking £9,800; one option that Carrera S buyers could not have, though, was the GTS's standard Carrera 4 widebody.

The early 991's seven speed manual lacked the easy precision of its six-speed forebear, making it all too easy to wrong-slot the lever. One correspondent even claimed that "the labyrinthine linkage that converts the PDK-based manual's non-sequential stack to a conventional 'H' pattern" was responsible. Whatever the reason, Porsche was not deaf to the critics and by the time of the GTS launch two years later, it described the gearchange as having been "shifting-force optimised" and certainly there were no complaints this time.

WHAT'S IT LIKE TO DRIVE?

As might be expected, the latest 911 – the fruit of almost 15 years' experience through the 996 and 997 – offered more neutral handling and a more sophisticated ride. The first impression of the 991 is of the more opulent and spacious cabin, the Alcantara steering wheel and seat inserts differentiating the cockpit from lesser 991s, and the driver finding themselves significantly further from the windscreen than before. The 991 is an altogether bigger Porsche, and sitting lower and further from the glass, the view out is more constrained. Those mirrors, parking sensors and other aids to visibility will need to be called on.

Underway, the ride is smoother with less of the choppiness of the earlier, shorter chassis. Tyre roar – a long-time Porsche failing – is still present from the rear and this seems to a particular problem in Britain with its harsh road surfaces. While the GTS's electrically assisted steering feels different and lacks some of the feedback of its hydraulic predecessors, Porsche had been working hard to refine the new steering mechanism since its original introduction two years earlier. Like the revisited five-across-the-top gearshift, it simply takes minor acclimatisation.

Few will complain about the performance of the GTS: road testers were all of the opinion that although it added only 30 more horses, the Powerkit's changes to induction were apparent in the way the flat six raced over the final 1,500rpm to its 7,500rpm climax. Overall, the GTS presented an intelligently judged compromise between the practicality of the Carrera and the demandingly ballistic nature of the GT3.

BELOW The optional Powerkit increased maximum power to 430bhp, giving a strong pull right through the rev range

THE VALUES STORY

The 991 GTS first appeared on Porsche's UK price list in autumn 2014 at £91,098 when the 991 Carrera S was pitched at £83,500 and the base Carrera £73,500. By that time the GTS 'sub-brand' was already seen as something of a value-for-money package.

Coupled with the enthusiastic reaction of the magazines to the new 991 variant, GTS residuals remained strong, especially when the model was withdrawn after barely two years (to be replaced after a gap by the 991.2 turbocharged GTS). Fully specified GTS Coupes with all-wheel-drive, PDK and (stage two) PASM – none of which was part of the stock GTS package – would have retailed at over £100,000. Yet a measure of the 991.1 GTS's perceived exclusivity was that by 2018 (the low-point on the depreciation curve) even these six-figure 911s barely fell below £80,000. They've since climbed back steadily, a tendency which was discernible long before the current general increase in used car values.

Six years since the last 991.1 GTS left the showrooms, they're offered in the £75,000-£90,000 bracket. Virtually all feature PDK and so to take a typical example, a 30,000-mile 2015 C2 with the double-clutch offered at £80,000 shows a remarkably strong residual value for a mass-production 911 originally costing £95,000 seven years ago.

MARKET RIVALS

Taking a nominal £75,000-£90,000 bracket, the would-be GTS buyer has other worthwhile 911 options.

991.2 GTS

The first 3.0 turbo GTS 911 has twin blowers and produces 450bhp. The greater torque spread over the naturally aspirated car is noticeable, but for purists seeking that wild, intoxicating rush to the red line, perhaps less appealing. Portsmouth OPC has a rare 2018 manual 3.0 C2 at £88,000.

997.2 Turbo

The best of the 'post-Mezger' 997 Turbos fall into the £70,000-80,000 category. At this price expect an impeccable, low-mileage 2011 example from a reputable specialist such as Cridfords or Steve Bull. A fast, endearingly classic 911 and the last 911 Turbo with a manual gearbox option.

997 GT3

The final analogue 911, at around £100,000 for a high-ish mileage example, the 997.2 GT3 is a serious driver's car. More demanding than a 991 GTS and more weekend hobby than everyday 911, like most specially produced 911s the GT3 is probably the better investment.

992 C2S

The 992 C2S is both faster and marginally more economical than the naturally aspirated 3.8 GTS. 2019 C2Ss are still at the top end of 991.1 GTS pricing, but will depreciate rather more quickly than the more special and individual GTS.

DESIRABLE OPTIONS

The GTS, of course, is already handsomely specified, but even so Porsche left quite a shopping list of possible extras, top of which is the £2,900 PDK, which three-quarters of buyers specified. Other options were the Sport chassis combined with the Aerokit. Here, ride height was lowered by 20mm as opposed to the 10mm of the 'standard' PASM. PDCC (adaptive anti-roll bars) is another track-oriented option. Other attractive accessories were largely cosmetic such as extended cockpit leather or carbon fibre inserts in the doors, and a fascia panel and bespoke door threshold plates. A sliding roof was also available.

ABOVE The GTS interior package was popular and adds real sporting intent

ABOVE The 991's cabin is a great place to be, and tends to stand up well to wear and tear over time

BUYING ONE

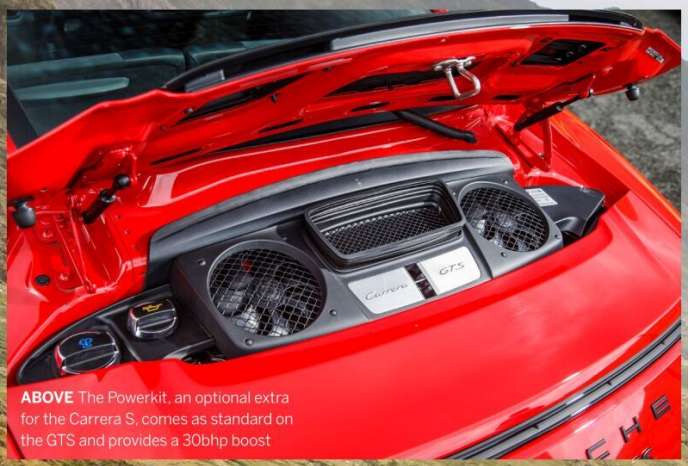
Wes of Northway Porsche reveals, "If a customer comes in for a 997.1, we always try to steer him towards the 997.2 and if his starting point is the 997.2, then we try to get him to spend a little more and look at the 991. It's much better built than the 997." Northway sees several examples regularly and reports for instance that suspension arms, which after seven or eight years would require replacement on the 997, are still fit for service on the 991, and the geometry is less likely to go awry – both signs of a better resolved chassis.

The 3.8 engine of the C2S and the GTS behaves itself and Northway has seen cars reach 100,000 miles largely trouble-free. While Northway reports no experience of bore-scoring on the 9A1, this engine does have peccadilloes that affect all versions, from the 2.7 of the 981 to the 3.8 GTS. Variocam solenoids fail, while a coolant system performance light can illuminate meaning that one of the seven sensors around the head has failed or corroded. Neither fault materially affects the performance of the GTS and in neither case is the replacement part expensive, but both faults involve workshop interventions. Another coolant fault is a minor weep that can occur at the junction between aluminium and plastic piping.

Bodily, one fault Northway has occasionally encountered is water ingress. The cause is mostly to be found beneath the door thresholds. The 991 uses much more aluminium than its predecessor and the sill comprises three panels rather than one piece. Inadequate sealing allows water to accumulate inside the sill and get into the cabin. Northway's solution is to dismantle and reseal the sills. Damp carpets will manifest themselves by causing the cabin to mist up. If a buyer finds any evidence of moisture, in a Coupe this is probably the cause.

Otherwise, the usual checks apply: evidence of regular oil changes and service intervals are vital; many six or seven-year-old 911s will not be on their original pads and discs. If they are, this £1,000-plus expense needs to be reflected in the asking price. Tyre wear should be even across the tread and tyres all of the same reputable make – a sure sign of proper maintenance. Batteries last about eight years – an example with a replacement will save subsequent outlay. Cabins are well finished, and only the flattened nap of the Alcantara seats betrays heavy use.

RIGHT The GTS includes SportDesign wing mirrors that offer better aerodynamic qualities over standard mirrors



ABOVE The Powerkit, an optional extra for the Carrera S, comes as standard on the GTS and provides a 30bhp boost

INVESTMENT POTENTIAL

No mass-produced 911 will do anything other than depreciate. The 991.1 GTS has in its favour an attractive specification and relatively low production numbers – this has played a role in the GTS's strong residuals. The going rate for a 2015 example is usually a good £20,000 more than a C2S of the same vintage. Enthusiasts will often seek out the manual version: more demanding to drive, but for some more satisfying. These are rare – potentially accounting for fewer than 10 per cent of RHD cars, and experience with the 997.2 suggests that demand for the manual will see it commanding a slight premium over the more common PDK model.

"GTS branding has created a distinct identity, distinguished externally by its own handsome wheels and mildly flared rear body"

TOTAL 911 VERDICT

Leaving aside the 964 RS, which was essentially a homologation model, since the 993 C2S Porsche has developed an impressive record of producing competitively priced special and subsequently sought-after editions. The GTS category has turned this into a regular feature and it works particularly well on the 991. In the case of the 991.1, GTS branding has created a distinct identity, distinguished externally by its own handsome wheels and mildly flared rear body. Internally, the tasteful application of Alcantara endows the cabin with a discreetly sporting individuality. Powerkit notwithstanding, the owner also knows they have the last naturally aspirated 911 (outside the specialist realm of the GT3 and derivatives). The question is whether the GTS is worth £20,000 more than the equivalent, but faster-depreciating Carrera 2S. After all, when behind the wheel these models are very similar and only Porsche fans will tell them apart. On the other hand, those old maxims, "nobody needs a Porsche" and "always buy the best you can afford" also spring to mind.

★★★★½

Gunther Werks Speedster

Gunther Werks presents its second creation based on Porsche's 993, the Speedster – so what's it like?

Written by **Kyle Fortune** Photography by **Ted7**

We begin with coffee in Starbucks off Highway I-10 at Desert Hills Premium Outlets, Palm Springs. It's out of necessity rather than choice – I'm here for the wi-fi, not the burnt, bitter, black coffee. Like many others whose names are shouted out by the baristas, I'm killing time before 'work' starts, though unlike most of them, I can't wait to get going. There's a transporter heading this way, and in the back is Gunther Werks' new Speedster. Not a bad day at the office, then.

A quick recap in the unlikely event that Gunther Werks has passed you by. Based in Huntington Beach, California, Peter Nam's company takes 993s and applies current engineering methods, materials and expertise to them. Think of it as a continuation; the idea being to project the 993's timeline to today, as if Porsche was still building air-cooled 911s and injecting them with some GT3 and RS DNA.

Total 911 has followed the company's journey since its earliest days, finding a Facebook post on a 993 group back in 2017 showing a headlight design that piqued our interest. That eventually led to the world's first drive in the 400R – the Gunther Werks 993 Coupe prototype – back in issue 162. More recently, in issue 213 we revisited the Gunther Werks Coupe, discovering what four years of obsessive development has created for 25 lucky customers. In short, it's an incredible car that lives up to the company's aim of building the world's best 993.

Gunther Werks said it would only build 25 Coupes and, despite plenty of requests from eager buyers for more, it's stuck to that tiny production number. Nam did concede back in 2017 that he had 'ideas' for other models, and in August 2021 the Speedster was first revealed at Quail, as part of Monterey Car Week. Like the Coupe, the Speedster will be limited to a build of just 25 cars, with production ramping up in 2022 as the final Coupes are delivered. Like the 400R that became the Coupe, **Total 911** is the first to drive the Speedster prototype that's heading down the I-10 while I regret my poor coffee choice.

Forget what you've heard about American roads. I spent my youth convinced the country was criss-crossed by grid-pattern routes, but even America's can-do attitude must concede to topography at times. Around the mall and its expansive car park is exactly the sort of easy, unimaginative road layouts that could be laid out by an Etch a Sketch, but off that, heading west from nearby Banning, is the SR-243. This road scales Mount San Jacinto and the State Park, joining up with the Palm to Pines road on Route 74.

These roads are so good that Porsche used them on the 997 GTS launch. It's a mix of every conceivable bend, camber, crest, compression and anything else that's tricky – and fun. As brilliant as that is, it's quiet, too, with the certainty being of next to no traffic. Driving nirvana, then, and we've the promise of quite the car to enjoy it.

Having spent some time in the Coupe a few days earlier and seen the Speedster at Gunther Werks HQ at the same time, anticipation is high. Yet as the Speedster rolls out of the transporter in the car park, it's difficult not to be blown away by the execution all over again. Like the Coupe, the Speedster's body is constructed from carbon fibre, painted in Cannes green with yellow Porsche scripting on its flanks matching the yellow leather highlights inside. That's yellow like the solid lines I shouldn't cross while I explore Route 243 in it later, with amber orange tones like Porsche's Bahama yellow, rather the brightness of, say, Speed yellow. And it works very well indeed.

Naturally, you can pick whatever colours you want, inside and out. You can even specify a naked carbon Speedster.

BELOW The cabin remains draught-free, thanks in part to a glass screen between the humps behind the passenger and driver's heads

ABOVE The cabin has been given a modern overhaul though it remains recongisable to the 993 era it hails from

BELOW There's storage space behind the driver and passenger, accessed via lockable lids

"The Speedster is able to deliver a torsional figure that's 50 per cent stiffer than a stock 993 Coupe"

Model Gunther Werks Speedster
Year 2022

Engine

Capacity 4.0 litres
Compression ratio 11.0:1
Engine spec Air-cooled 4.0L RS crank, custom Mahle pistons, custom forged conrods, twin plug, coil ignition, individual throttle bodies with high flow injectors, Motec ECU running dual-switchable maps, double oil coolers, GT3-style carbon plenum, lightweight Li-ion battery
Maximum power 430hp at 7,800rpm
Maximum torque 427Nm at 6,500rpm
Transmission Six-speed G50 manual gearbox with bespoke ratios, a single-mass flywheel, uprated single-plate clutch and a carbon clutch differential with 40 per cent locking

Suspension

Front Bespoke specification JRZ electronically controlled remote reservoir damped suspension with hydraulic nose lift, lightweight RS spec uprights, ball-jointed and solid mounted throughout with adjustable tie rods and a front strut brace
Rear Bespoke specification JRZ electronically controlled remote reservoir damped suspension, ball-jointed and solid mounted throughout with adjustable tie rods

Wheels & tyres

Front 11x18-inch; 295/30/18
Rear 13x18-inch; 335/30/18

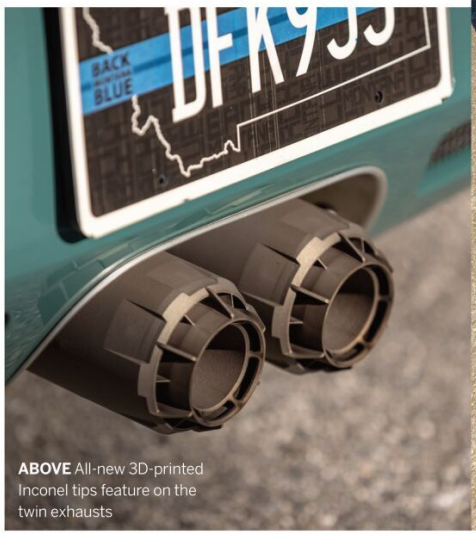
Dimensions

Width 1,911mm
Weight 1,256kg unladen

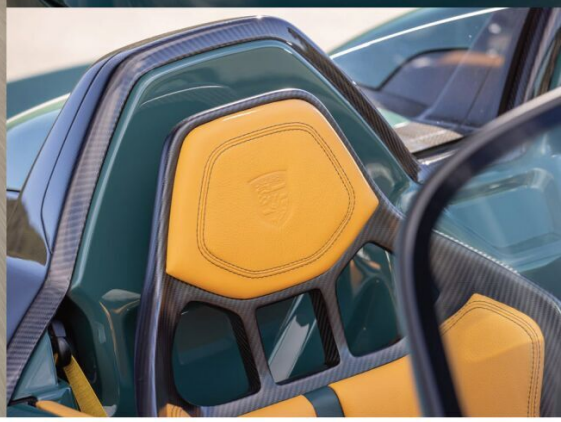
Performance

0-62mph Not tested
Top speed Not tested

ABOVE The Speedster will produce well over 400bhp at around 7,800rpm



ABOVE All-new 3D-printed Inconel tips feature on the twin exhausts



Doing so adds a not-insignificant cost to your Speedster: naked carbon takes significantly longer than a painted carbon body because of the need to exactly match the weave along all its joins.

Not that any increase in price is likely to concern buyers, but the added wait might. Pricing is similar to the Coupe, so there's a starting price of $675,000 but think usefully north of $850,000 with a few choice options. That number has done little to quell demand. Indeed, before a single production model has been built, Gunther Werks has sold them all. So if you're reading this thinking, "Yes please!" you're too late.

Gunther Werks employs the same talented team that built the Coupe to create its Speedster, so it's no surprise that the flat six out the back is the same specification. No bad thing, either: Rothsport Racing's Jeff Gamroth builds the 4.0-litre air-cooled engine and it's a masterpiece. It uses an original casing but everything else is custom, with billet barrels and a crank that rotates forged conrods topped by unique Mahle pistons. There are equal length stainless steel headers, coil-on-plug ignition and a GT3 plenum, while the fuel injection system and throttle bodies are his own design. Controlling all that is a Motec engine management system with a bespoke tune, while the exhaust is a valved lightweight setup with a Sport Mode that ups the tempo and switches the map for even greater response.

Like Porsche itself, Gunther Werks quotes its figures conservatively, simply stating a 400+hp output, but the reality is you can add about 30hp to that. That peak power is produced at 7,800rpm, where the red paint on the white rev-counter starts, with maximum torque of 447Nm coming in a bit earlier at around 6,500rpm. For an air-cooled engine punching out in excess of 100hp per litre it's remarkably civilised, idling steadily and quietly. It feels so immediate and crisp in its response, and so lacking in internal inertia, that it's impossible to resist the temptation to give the accelerator exploratory blips after starting it. The reward for doing so is an immediate, rousing flare of revs that's racer quick but road-car civilised. You'll need some revs heading off, with a light flywheel if you're not judicious with the clutch, because it's easy to stall. Keep that in mind and it's easy enough – this demand alone underlining that for all the Speedster's obvious beauty, at its heart it remains very much a driver's car.

Like the Coupe, there are a few compromises. Arguably necessary ones, given Gunther Werk's goals with the car, but they're factors that need consideration. Most obviously is the turning circle: the significantly widened front axle has 11-inch wide front wheels, with a 295/30/18 tyre. Unlike the Pirelli P-Zero Corsas of the Coupe, Gunther Werks has specified a Continental ExtremeContact Sport tyre on the Speedster, choosing these over the Pirellis because there's both greater potential supply and slightly softer sidewalls, which are beneficial to the ride quality and suit the Speedster's character better. It's tested these tyres on the Coupe and found them to be beneficial there, too. The rear wheels are 13-inches wide, with a 335/30/18 tyre.

The Speedster prototype here rides on a conventional five-lug hub with 18-inch Gunther Werks T-6061 forged aluminium three-piece wheels, although there's the option to specify it with a set of lighter centre-lock forged magnesium wheels with Dymag carbon-fibre barrels. This would drop the wheel weight by around half, to a little over 7kg in each corner.

Behind the standard or optional wheels are Brembo GT six-piston callipers grabbing a 335x32mm slotted front disc, with the rear axle featuring a four-piston Brembo GT calliper with 345x28mm slotted disc. Those hang off a suspension setup specified by Gunther Werk's chassis expert Cary Eisenlohr, of Eisenlohr Racing Products. The standard setup features a bespoke KW coilover system, but the prototype is running the optional JRZ electronic setup that everyone specifies, with the system monitoring the dampers 1,000 times a second to provide the best response. Naturally, there are differing setups – be it the default, Comfort or Sport – although each setting will maximise comfort and make adjustments when it senses it's required. It's controlled by an app on a smartphone, which feels a touch unnecessary. A simple dial, like the one Gunther Werks makes for the lights, with those three settings would arguably suit the analogue, old-school appeal of the Speedster better.

While the turning circle is a consideration at slower speeds in tighter spaces, it's not an issue on the road. Here the steering is wonderfully communicative. That wide front axle and the not-inconsiderable contact patch on the road produces huge stability and confidence when turning in. There's a quickness to the nose that's agile without being too 'darty', the weighting of the steering is nicely judged, and the feel through the Gunther Werks carbon-fibre hollow SportDesign Edition steering wheel is spot on.

The wheel itself is fantastic to hold: the thumb recesses above the spokes are perfectly positioned, and its girth, while visually giving the impression of thickness, doesn't feel like it in your hands. Instead, it conveys a light and thinness that's entirely in keeping with the intent of delivering sensation.

Indeed, the whole interior is a tactile delight. It's a fine mix of leather, matte carbon fibre, metal and paint – an example of Gunther Werks building on, rather than robbing the Speedster of its classic 993 character, which is a neat trick to pull off. If I'm splitting hairs, and I were one of the 25 buyers, I'd perhaps ask for a more discreet solution for the housing of the sport button for the exhaust. Its prominence fore of the gearstick isn't helped by the slightly lacklustre button itself. I'd also want a simpler, thinner, bezel around the dials. These are tiny details, of course, and ones that I've no doubt Gunther Werks would happily revise should it be required. And that's an enormous part of the Speedster's appeal. Each car is individually specified and will be unique to its owner, thanks to Gunther Werks having a commissioning suite at its Huntington Beach HQ.

Yet for all its configurability and fine execution, at its core Gunther Werks has always been committed to the cause of providing an engaging driver's car. Being a Speedster helps; there's no weather protection, so the steeper raked carbon-fibre windscreen surround with its screen from a 964 Speedster lacks any means of having a hood, however rudimentary, attached to it. Similarly, there are no side windows, though the fitment of a small piece of glass between the double-bubble humps behind the passenger and driver's heads does keep the cabin remarkably draught-free at speeds that are the right side of legal. Above that, I couldn't possibly say, but I'd imagine it'd be absolutely fine deep into three figures.

The 993 Cabriolet's underpinnings might have been commendably stiff three decades ago, but drive one now and you'll realise how far things have come. Any concerns that the structure might reveal compromises, particularly given the focus of the suspension, are answered by Gunther Werks' extensive work on strengthening the platform. To do so the team sought out the skills of Trevor Harris. The race engineer has an incredible CV covering car design for every discipline, from Pikes Peak racers to F1 and Can-Am cars. With his input the Speedster is able to deliver a torsional figure that's 50 per cent stiffer than a stock 993 Coupe. Numerous elements assist here, including the double-skinned sills, and a frame and rollover protection bar filling the void behind the rear seats. What makes that all doubly impressive is the fact that the Speedster weighs 45kg less than the Coupe, with a kerbweight of 1,156kg. That's without the optional lightweight wheels, which would reduce the weight further.

That stiffness is obvious by the wheel and body control on offer when driven hard on the route above Palm Springs. Here the Speedster's taut responses feel contemporary rather than compromised, creating an appealing mix of analogue thrills, sound and feedback with a composure that's deeply impressive. With the noise of the flat six reverberating around the hills as it's repeatedly and enjoyably wrung out to its redline, the sounds emanating from it are as intoxicating as the physical forces it creates. The pedal spacing is nicely judged for my size nines, the brake pedal's reassuring firmness and huge retardation giving a solid platform to blip the throttle for downshifts, with the gearstick being precise through its lengthy movement. A shorter travel would up the ante: the gearstick's movement is long as opposed to long-winded, so if a bit could be removed it'd suit the ferocity and immediacy of the engine's response just that little bit better.

Regardless, as a whole it's difficult not to be blown away – again – by Gunther Werks. The Speedster is every bit as engaging as the Coupe, only more so. It's compromised as a result, but that's something to be celebrated. It's elemental, with the experience of being open adding so much more to the drive, though, admittedly, limiting the opportunities to use it. Speedsters are always special, occasional-use cars, and the Gunther Werks is no exception. Its mix of classic connectivity, feel and compactness, with huge air-cooled character and contemporary performance is incredibly compelling, and pretty much unique among cars you can buy today. 911

LIKES

- **Greater level of connectivity; visceral and aural thrills thanks to the open top**
- **Impressively stiff platform, agile handling with fine control**
- **Old-school character, modern build quality, and an engine that needs to be experienced to be believed**

DISLIKES

- **Gearshift would benefit from being a touch shorter in its throw**
- **Some of the interior buttons fall slightly short of expectations and a button for suspension modes would be preferable to a phone app**
- **Turning circle needs management in tight spaces**

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TECH

FIFTY YEARS OF PORSCHE TURBOS

This year marks the 50th anniversary of Porsche's first application of forced induction. Total 911 charts the early days of the Turbo...

Written by **Kieron Fennelly**

The principle of supercharging, either mechanically or using turbines, goes back to the early years of automobile engineering. Between the wars, forced induction was usually achieved by a mechanical supercharger running off the crankshaft. Dr Porsche had designed Mercedes-sixes with superchargers during his stint at Daimler-Benz in the 1920s, at a time when forced induction through turbocharging (an even older technology) tended to be confined to big, slow-running marine diesels.

Once it became a manufacturer, during its first 25 years Porsche generally obtained more power by increasing capacity: the production flat four had reached two litres by 1962 and competition engines reached 2.2 litres and eight cylinders. When the 2.0-litre flat six of the 911 was designed, it was intended to leave sufficient margin to reach three litres (ultimately it would reach 3,741cc).

Hans Mezger's fellow designer on that engine was Ferdinand Piëch. When Piëch became technical director in 1966, his quest to make Porsche world sports car champions led to the 3-litre flat eight of the 908, which came so close to winning at Le Mans in 1969. Knowing that Porsche still didn't have the vital performance edge, Piëch had already hatched his ultimate weapon: the 4.5-litre flat 12 917. Still regarded by many as the greatest sports racer ever devised, the 917's dominance over two seasons would be so comprehensive that the FIA would ban it.

The 917 represented a huge investment for Porsche. To amortise some of its costs the company looked to the only open-formula race series for which

the 917 would still be eligible: the North American Can-Am, where for several seasons the 8-litre McLarens had ruled the roost. With tacit support from Zuffenhausen, Jo Siffert had been driving a 4.5-litre 917 in the series since the latter part of the 1969 season. The Porsche wasn't quick enough to trouble the V8s: clearly there was no substitute (as the locals would say) for cubic inches.

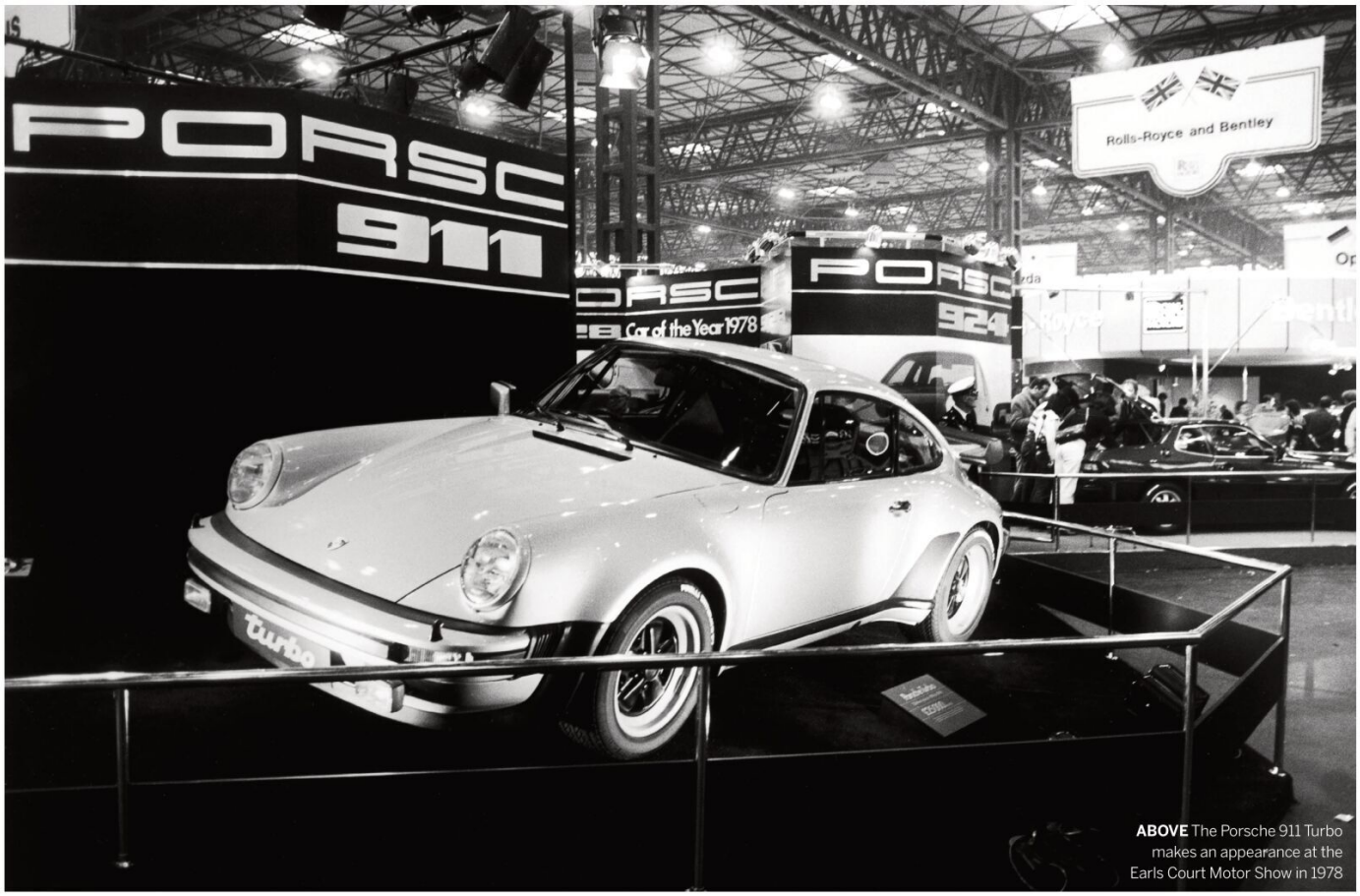
Piëch had Mezger draw up designs for a larger engine and eventually four versions between 6- and 7.2-litres were built. These were 16-cylinder affairs and although on the bench they yielded at least the 800+bhp that Lola, McLaren and others were getting from their Chevrolet blocks, for once cubic capacity would prove not to be the answer. The flat 16 was a long engine (so long in fact that Mark Donohue who tested a 917 so-fitted said you could hear the front of the engine start before the back) and its length entailed much work to the rear of the 917's chassis. This upset the handling balance – plain to see when both Donohue and Willi Kauhsen tested the car at Weissach – and sounded the death-knell of the flat 16 before it had turned even a competitive wheel.

This failure brought a note of urgency to the situation. Piëch had allocated a considerable budget for the flat 16 project without consulting Ferry (he was apparently not apprised until sometime afterwards, when his nephew had already left the firm). It was following the failure of the flat 16 that at the end of the 1971 season when Porsche, now fully committed to the Can-Am championship, would turn to turbocharging. Although it took many weeks of trial and error before Porsche was able to control the boost of turbocharging, once this was mastered the 917 running at a boosted 900-1,000bhp had enough power to see off even 9-litre versions of the Chevrolet engine. Once again Porsche would make itself unpopular with its dominance, and it withdrew after comprehensively winning the 1972 and '73 championships.

Meanwhile, there had been developments in the business structure of Porsche AG. Following the family agreement in 1970 to withdraw from management of the firm, the most significant change was the arrival at – or rather the return – to Porsche in 1971 of Ernst Fuhrmann. Initially, his role was technical director, but by 1972 he was managing director of the company. A mechanical engineer, the Viennese Fuhrmann had originally joined Ferry in 1947 at the time of the Cisitalia project. Fuhrmann's subsequent claim to fame at Porsche was the quad-cam flat four, which provided the basis of the company's racing triumphs for more than a decade.

A keen motorsport fan, Fuhrmann had been impressed by the 917's victories in America – some of which as the new boss he was able to witness first hand. He wasn't alone in the company in being disappointed that after the ban on the 917 in Europe, Porsche no longer had a first-division racing presence. Worse still, in the German championship, the 911T was being out-run by Cologne Capris and other larger-capacity competitors. Fuhrmann saw that Porsche needed a new top-level racer to maintain its reputation. He also thought that the 911 would eventually have to be superseded, but its successor (the 928) would take several years to develop. In the meantime, turbocharging a production 911 for homologation purposes might even create a new halo production model.

Forced induction wasn't new at Porsche. In his quest to leave no technology unturned, Piëch had ➲



ABOVE The Porsche 911 Turbo makes an appearance at the Earls Court Motor Show in 1978

BELOW The Porsche 917, with its 4.5-litre flat 12 engine, enjoyed great success in motorsport

"Fuhrmann saw that to maintain its reputation, Porsche needed a new top-level racer"

begun investigations of this route in 1969. Valentin Schäffer was despatched to Eberspächer in Esslingen to obtain a couple of turbochargers. This project required some discretion: another of Eberspächer's customers was a certain Michael May, a Swiss motor engineer whose turbocharged Capris built at his Esslingen workshop were making a name for themselves. Schäffer said that he had to pretend the turbochargers were for a motor cycle he was building. At Zuffenhausen, the turbos were duly shoehorned into the engine compartments of a 911 and a 914, but the experiment went little further. Piëch had more pressing priorities, above all winning Le Mans in what would probably be his last opportunity, and the turbo project cars were pushed into a corner.

Partly because he'd been absent from Porsche during its gestation and development (from 1957 to 1971 he had worked at piston ring maker Goetze) Fuhrmann had a slightly more dispassionate view than many of the 911. But it was the company's only model: it needed greater competition success and wider appeal. He soon encountered some of the inherent Porsche complacency he remembered from his earlier stint, but now, as now the man in charge, he could give the orders.

A competitive 911 to give Porsche customers in group 3 more chance of beating the Fords and BMWs was a start: he had Gerhard Berger strip and lighten a 911T, which would be homologated as the Carrera 2.7 RS at a mere 975kg. When Porsche's salesmen told him there would insufficient consumer interest in the 500 cars required for homologation, he flatly overruled them. In the event, Porsche had to scramble to build 1,590 examples before production of the F series ended, still far from meeting demand.

Fuhrmann's approach was similarly direct when he decided to disinterre Piëch's still-born turbo project. Porsche technicians informed him that there was simply no room in the 911's engine bay for a turbocharger. Their protestations would be waved aside. "Find room," he instructed them.

By mid-1972, the Can-Am 917s in the hands of Donohue and Follmer were the class of the field. The now 5 litre flat 12 tolerated the stress of turbo charging, even under qualifying conditions when boost was increased to yield 1,100bhp. Fuhrmann felt confident enough to tell Porsche chronicler Jerry Sloniger, "You don't have any problems supercharging a healthy engine except for lag. Finding the trick which reduces throttle lag is the whole goal of our turbocharging work." He then said emissions were no worse from a blown engine and because the exhaust was routed through the turbocharger, the engine ran far more quietly. Hinting at what he had in mind, he added, "I wouldn't exclude putting a turbo charger on our road cars sometime."

Indeed, Fuhrmann was eager to drive one and fresh from his success of resolving the lag on the Can-Am 917, Schäffer was deputised to oversee construction of the first road-going Porsche 911 Turbo. It used the 2.7 engine and tests at Weissach revealed, among other data, a reliable 250 horsepower, significantly better than the 210bhp of the naturally aspirated 2.7. Fuhrmann felt that despite evident throttle delay and a chassis that would require work to handle the additional horses, they had a basis for a production car of which they would need to build only 400 for homologation. His own aspirations were higher than that.

The time during the summer of 1973 seemed right: Michael May's Capri conversions were proving very popular. He would eventually sell over 4,500 and BMW was known to be developing a turbo-charged sports car. At the Paris Show, Porsche presented a mocked-up 911 Turbo: it had the flared arches, wider wheels and spoiler of the forthcoming 3.0 RSR, while under the engine cover was apparently a turbo flat six (in fact a wooden model) but the entire presentation was convincing. Visitors lapped up Porsche's claims of 280bhp and 160+ mph.

Development of two turbo 911s, one a stripped-out racer, the other a luxurious sports car, would steam ahead until a sudden squall threatened to derail everything: the Arab oil embargo that followed the Six-Day War of October 1973 threw governments into panic and the motor industry into reverse gear. Blanket speed limits of 100kph appeared in Germany and even lower elsewhere (a mind-numbing 50mph in the UK) while the Dutch went one better by shutting their motorways completely on Sundays.

Meanwhile, manufacturers curtailed their ambitions drastically: Mercedes abandoned its plan to introduce a 6.9 litre saloon; BMW scrapped its turbo project, making an instant orphan of the 1,500 2002 Turbos it already had built for homologation; boutique manufacturers Jenson, AC and Iso Grifo weren't alone in going to the wall. At Zuffenhausen, Fuhrmann came under pressure from a conservative Porsche establishment to terminate the turbo project that had already cost three million deutschmarks. To his credit, he resisted.

Launched in the midst of the downturn in 1974, the 911 Turbo was, as is now well-known, a proverbial sensation and it discovered a market among the super-rich who have never seemed to be affected by state of the economy. Envisaging sales of 500 turbos in 1975, Porsche had more than doubled this before the year was out and demand wouldn't slacken. The 911 Turbo, a critical money-earner for its maker, was set on a course that no other high-end manufacturer would attempt to follow for many years.

Among the mass manufacturers, several would experiment with a turbo model. Saab's Turbo 900 was thought a reasonable attempt and did much for the image of the independent Swedish marque; in the late 1980s Ford's turbocharged Sierra Cosworths set performance benchmarks such as a 0-60mph that was almost in 911 territory. But until the 21st century and the mass adoption for environmental reasons of turbo-charged petrol engines, Porsche – both on the track and on the road – was seen as *the* turbomasters. Thank Ernst Fuhrmann for that. 911

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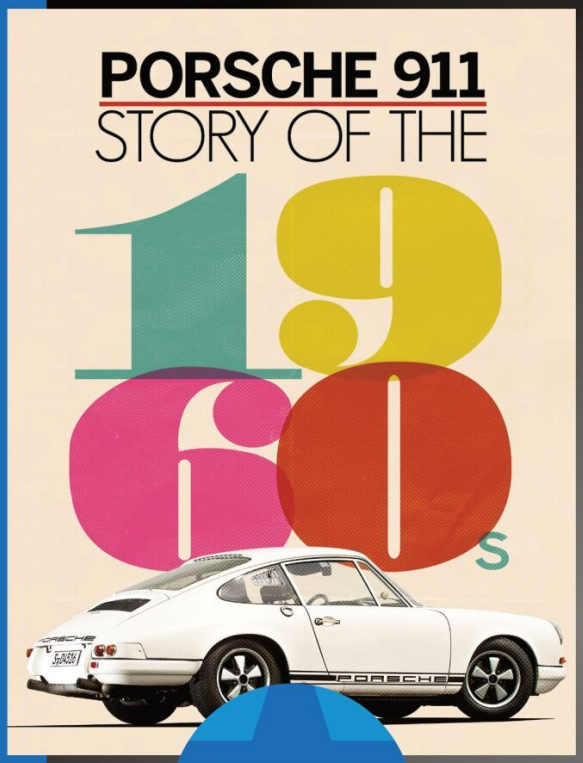

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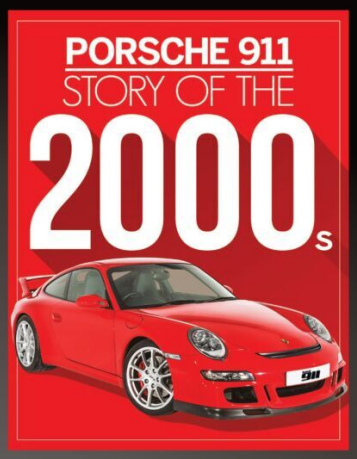

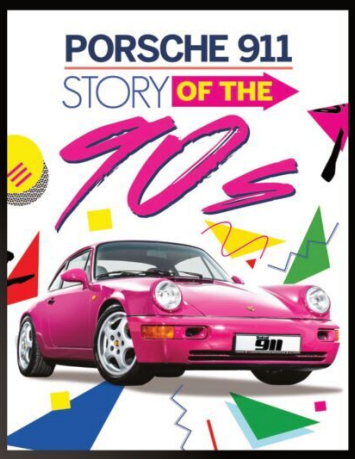

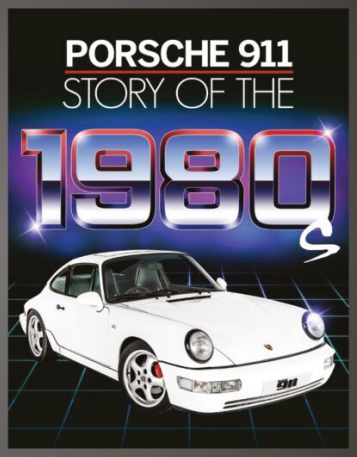

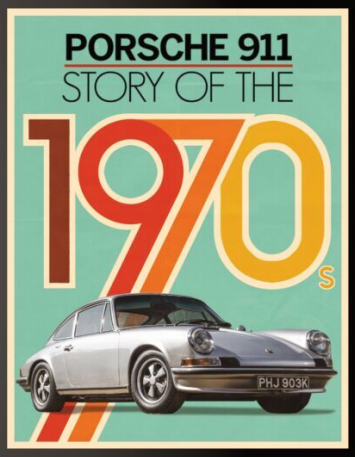

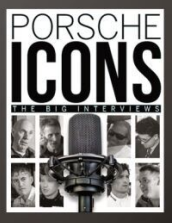

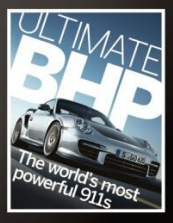

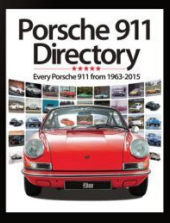

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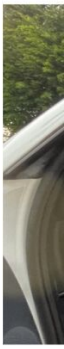
Living the Legend

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



Anthony Coyne
Fort Lauderdale, USA

@mr_coyne

Model	997.2 CARRERA S
Year	2009
Acquired	FEBRUARY 2021

If you're reading this, then it's likely you already own a 911 and will have a good idea of their capability. You may also have purchased a copy of this fine magazine if you're considering buying one. For anyone venturing into sports car ownership, a Porsche makes a compelling proposition – especially as a second car. But what about as a daily driver?

I've been pondering this very question myself of late. Yesterday I spent almost 14 hours in the car (850 miles). It's used to buy groceries from Whole Foods five minutes down the road (I can almost hear you thinking, "Tut-tut, not short trips"), I take the dog to the beach in it, and home again covered in sand. Almost every mundane task imaginable is thrown at this Carrera S. It now has almost 105,000 miles on it, and by the time these words appear in print it'll likely have risen a couple of thousand more.

Daily driver-ing a 911 of any flavour isn't easy. Sure, if you're a singleton about town looking to attract your next bedfellow then it may work well, but as soon as there are two or more of you, the practicality issues creep in. It takes commitment and perseverance.

Space is the main issue. The back seats are constantly used for luggage, and in my case that means securing luggage away from the dog. Luckily it's a dog, because a small child – at least one of talking age – would complain at having to sit on top of a bag, or having the view from the window obstructed. This week I had to make one trip without Renée and Alfred because there would have been no room for us all and the microwave I collected. In fact, there was barely space for me and the microwave which I had to un-box to fit in, and drive with it propped on my arm to stop it pushing the PDK gear selector into top gear (or park). In a manual this would have been impossible, so to all you haters out there, keep that in mind when you're next dismissing "autos" as devoid of involvement. Sure, we PDK drivers can't heal and toe, but we can carry a 30-inch microwave oven.

It doesn't end there. This load lugger thinks it's a Transit van. A chainsaw hitched a ride home this week, and my bike even fitted (sort of) a few weeks ago. However, it must be said that it was

finally beaten by the lawnmower – a more practical vehicle had to step in and collect that particular device.

Given the mileage being covered, the reality of hurricane season, flooding and snow, and a house renovation – a 911 simply can't do the job. Or perhaps more fairly, it can't do all of the jobs. Back in October a proper daily driver was ordered, but the global supply issues mean it's unlikely to arrive until the end of April. It's always exciting to get a new car, and I'm excited about the SUV that's incoming with its ventilated nappa leather captain's seats and heads-up display. However, having put up such a good fight daily-ing less-practical vehicles for so many years, a small part of me (the deeper-thinking side), knows it's not just a new car/truck that's arriving – it's middle age.

Lee Sibley
Poole, UK

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

Which characteristic of a sports car is most important to you? Is it that rush of acceleration that follows a prod of the accelerator, deft directional changes, or the throaty sound of an engine and/or exhaust? All are important of course but for me, sound is perhaps more important than ever.

I've said before that 300hp is the sweet spot for road driving in a sports car, so outright power isn't of high concern. Sure, science-bending handling is key to the fun, but the idea of a stunning flat six soundtrack is, in the case here, the most rewarding aspect of driving for me. Particularly as governments and other lobbyists are doing their utmost to silence this particular avenue of enjoyment.

The problem with my 996 is that its soundtrack has delivered only disappointment rather than decibels in three years of ownership. Out of the box (excuse the pun), the 996.1's factory silencers ensure mine is the quietest water-cooled 911 generation, with only the early 992s and their gasoline particle filters giving it a run for its money as king of the quiet 911s.

I've long wanted to do something about this to enhance my 911 ownership experience, which led to the purchase of a pair of Dansk Sport mufflers back in 2019. This again led to dissatisfaction: though they delivered a gruff note, the 996 was arguably quieter than it was stock. I made it my mission in 2021 to correct this sorry mess, with the purchase of an exhaust system that would deliver handsomely on both volume and tone while still enabling me to participate in track days with up to a 102dB noise limit. I'd even arranged for a group test of different aftermarket exhausts, which I featured on my YouTube channel (search 9WERKS TV), with nine different options selected according to budget and setup.

While entirely subjective, the result was shocking: to my mind the best bark, as well as bang for your buck, came not from a full exhaust setup costing thousands, but a simple Gundo hack for a couple of hundred quid. This essentially involves welding an additional 1.5-inch pipe connecting the two pipes of the muffler. It creates a much deeper and louder sound than stock – similar or better than PSE.

I had this done at Wrightune at the end of last year and, honestly, I'd put it right up there with one of the best mods I've ever had done to my 996. The car now boasts a bassy growl at lower rpms, building to a bellowing shriek past 4,000rpm. Every push of the gas pedal is met with the unfiltered noise of a traditional flat six soundtrack, exactly as it should be. Better still, it's not overbearing when cruising, which is another key aspect to get right when choosing your exhaust.

Again, in terms of noise preferences this is all entirely subjective stuff, but regardless the Gundo hack has to be the very best value mod you can do to your 996, or any 911 for that matter. What do you think of the sound? Check it out for yourself by visiting my YouTube channel.

Ron Lang
Ashland, USA

@ronlangsport

Model	911S 2.4-LITRE
Year	1972
Acquired	2018
Model	930 3.3
Year	1982
Acquired	2020
Model	964 CARRERA 2 REIMAGINED BY SINGER
Year	1991
Acquired	2016
Model	993 TURBO
Year	1997
Acquired	2015
Model	996 GT2
Year	2003
Acquired	2021
Model	997.2 GT3 RS
Year	2011
Acquired	2015
Model	991.2 C4S
Year	2017
Acquired	2016
Model	991 GT3 TOURING
Year	2019
Acquired	2021

With the arrival of the colder and wetter months it's time to survey the 911s and determine if any more extensive repairs and/or refurbishment might be due. One hopes that there are no needs in the garage, but inevitably something stands out.

The 1982 Euro 930 turbo has been a delight to own and drive. It now has over 75,000 miles and has never been painted, nor has the drivetrain previously been out of the car. There is comfort based on the extensive documentation and owner records that accompanied the car when I bought it.

Other than an up-sized K27 turbocharger and an ANDIAL intercooler, the car is pretty original as it approaches its 40th birthday. And I like this car enough to enjoy it for a few more years: good power, handling, and brakes are housed under that paint-to-sample tangerine shade. That bright colour always puts a smile on my face and often with a chuckle or two as well.

However, when I first got the car, I noticed some hesitation and notchiness in the gearbox, particularly when upshifting to third gear. And the clutch pedal feels heavier than one would expect.

So the project for this winter is a gearbox rebuild. The drivetrain has already been removed from the car and the transmission is off to the specialist repair shop. With the end-of-year holidays, the shop hasn't opened it up yet to report on its findings. It won't surprise me if it needs at least one synchro, a shift fork and some fresh bearings. Hopefully, the gears themselves are in good shape, but this is to be determined.

And while we're there... you know how this story goes. It'll get a fresh clutch and flywheel. And some assorted oil leaks will be addressed, some fresh spark plugs installed and no doubt some more things will be found to be done by my trusted technicians (thank you Aaron and team!).

There's the possibility of a five-speed conversion for the stock four-speed 'box. And while I'm tempted to go in that direction given the performance improvement that will result, I've decided to keep it as a four speed. Yes, it's a very wide ratio gearbox, with second gear good to 70mph. A tighter set of ratios would be nice but perhaps out of character for the car, which I think deserves to be preserved in its original state as much as possible.

The wide ratio is really not much of a performance issue. The engine produces a lot of torque across a wide powerband, kicking in at about 3,000rpm and redlining at 7,000rpm. Although I haven't dyno'd the engine, it feels (for what that's worth) as though it produces at least the 300hp from its original spec and perhaps a little bit more with the larger turbo/intercooler package.

I had the gearbox in my 1997 993 Turbo rebuilt a few years ago with excellent results. I'm hoping for the same for the 930, with many sweet shifts to come next season and beyond.

Andy Brookes
Poole, UK

@993andy

9WERKS Radio

Model	**993 CARRERA**
Year	**1995**
Acquired	**SEPTEMBER 2018**

I told you about my first round of modifications to the 993 last month, but I couldn't leave it there – I wanted to take it a bit further. I've always loved a Ducktail spoiler and was very fortunate to find a second-hand one for sale already painted in Guards red, which bolted straight on.

I then started looking at wheels. The Cup 2s are a great wheel, but do look a little small in the 993 arches. A friend lent me his 18-inch Cup 2 replicas to see if I was happy with how an 18-inch felt on the car. I was sold with the looks and was happy with the feel, so the search was on.

I found a set of BMW E28s in Merseyside that I took a shine to. I drove all the way up there to pick them up, ignored the advice I had read about the need to check for cracks in the magnesium, and bought them home. Upon fitting them to the car I noticed three cracks in one of the front wheels. Oh dear. It's true what they say, then!

The seller of the wheels very graciously agreed to give me a refund – a close shave. I then spoke to Jay from Wheel Pros about what wheels he had available for 993s. Fortunately, he'd just decided to sell the Rotiform NFNs that he'd been running on his 964, and so I snapped them up. And that was my wheels sorted.

I've always found the front end of the 993 Carrera wanting. It's way too soft, especially now that I had the Ducktail. I needed more chin! I could have gone with a Turbo front bumper, but I'm in the minority of not being a fan. I'm also not that keen on the RS bumper corners – I wanted something more OEM plus.

I found the TECHART Aerokit bumper corners to be the perfect item and I purchased these from my local Porsche dealer, undercutting all the online retailers. I also found some pictures of a bumper that I hadn't seen before with a different grill feature. Lots of searching and posting on Instagram enabled me to find out that it was also a TECHART part, which replaced the standard grill on the Carrera bumper.

I called TECHART, and was told it went out of production many years ago. My hopes were dashed. A few months later a friend sent me a message to say that he'd found stock of the part in Poland and the seller had them listed on eBay. Woo-hoo! I had these parts and the wing mirrors painted by my paint guy Simon at Wheel Works Auto Refinishing.

The last modification for 2021 came about after seeing photos of a wonderful G body Targa that's based on the East Coast of the US. It has stripes (yellow, orange and red) that lifts what is otherwise a plain white Targa and gives it a fun vibe. That was the first inspiration.

I then saw the logo for Radwood on a hat. Radwood is a show in the US that celebrates 1980s and 1990s cars and culture. That kick in the stripes would ape the shark fin on the rear arch. Lastly, the BB Targa with the Polaroid stripes inspired the stripes across the Ducktail. I set my guys at Standout Signs the task of bringing my idea to reality, and what a fine job they did. I love the silly stripes as they've been termed. What's next?

Peter Wilson
Adelaide, Australia
@peterwilson_oz

Model	930 3.3
Year	1980
Acquired	2011

Another month and another great motoring event in Adelaide. This time it was the 2021 Adelaide Rally, which is a multi-day road rally event held on closed roads in the Adelaide Hills. We're gifted to have such great driving roads so close to our city, but the normal speed limits are claustrophobic (especially in a performance car) and ruthlessly enforced. The Adelaide Rally solves this problem for the lucky entrants and also enables use of both lanes of the roads, which are often narrow and unsighted.

The rally has a number of categories, from full competition classes for both classic and modern machinery, through to "touring" classes with pace cars, for a spirited drive but not requiring helmets and roll cages. Several of the touring classes were dedicated to sportscar marques including Porsche, Lamborghini, Ferrari, BMW and Mercedes/AMG.

I didn't enter this year due to car reliability concerns and lack of spare time, but had made plans to catch up with the event a couple of times. One was a street party in the city centre after the second day of racing, and the other was a short competition stage specially optimised for spectators that happened to be a short walk from my house.

The street party was a great opportunity to get up close and personal to the machinery as the drivers enjoyed the many restaurants and al-fresco dining of Adelaide's Chinatown and Central Market district. There were a couple of Porsche 356s and stock 911s in the touring events, but many more exotic 911s in the competition classes including 996 GT3, 991 GT3 RS and 991 GT2. Among the classic 911 race entries were a Carrera 3.0 RSR replica that I'd seen previously at the Mallala circuit and a 2.7 RS lookalike.

Between the Friday street party and Sunday spectator stage I took the 930 for a drive to visit a friend on the other side of town. The traffic was terrible, so I decided to return home via the Hills roads – always an enjoyable option. This time, however, I repeatedly ran into road closures due to the Adelaide Rally.

It wasn't really an imposition as I just had to divert on to alternate roads and the enjoyable drive just got longer. At one stage I ended up in the queue of Lamborghinis and McLarens awaiting the start of a stage. I'm not a Lamborghini expert, but the car in front of me was huge, spanning fully from the verge to road centreline. It would have been a challenge to thread through the narrow roads if they hadn't been closed to oncoming traffic. Even more amazing was the noise at idle and heat haze emerging from the engine cover. My 930 isn't quiet or economical, but this Lambo must have been causing a local fuel shortage and environmental disaster simultaneously!

After extricating myself from the start line queue and continuing my backroads drive home, I promised that I'd get the car sorted and enter the event next year.

The spectator stage was also enjoyable because the organisers had selected a stretch of road with an elevated bank and footpath on one side. Safety barriers and large trees made this a safe viewing area with great views of the cars as they sprinted from Aldgate to my town of Stirling. It was a good opportunity to hear the cars at full noise and get some pictures, even though it wasn't a particularly demanding piece of road for either the cars or drivers.

I've made the suggestion to editor Lee that a driver's guide to the roads of the Adelaide Hills may be an interesting **Total 911** article and useful to readers who travel here after the world wakes up. Stay tuned for it sometime in 2022!

Natalie Stratos
London, UK

Model	**911 SC TARGA**
Year	**1982**
Acquired	**NOVEMBER 1994**

My Targa is still being looked after at the garage so there was no driving around London over the festive period. Instead of taking the roof down and getting my beautiful tree in the back of the Porsche as I do traditionally every year, I had it delivered. Unlike Keanu Reeves, who strapped a tree to his Porsche Carrera 4's roof with string.

The actor was slated by Porsche enthusiasts, but I love that he did that. A car can be beautiful if imperfect and also needs to be practical, in my mind. I've moved home in my childless years and managed it with all my stuff in the Targa (with the roof off). I've delivered the weekly stock of clothes for my shop in Selfridges stacked high, I've dropped off building equipment for my brother's company, and of course an array of dogs for my dog business have been ferried around in the Targa. I would always encourage a convertible Porsche for any prospective buyer, even if the older models leak. The break in the line of the side-profile of my Targa is more beautiful with the targa roof incorporated.

I contracted Covid mid-December so managed to watch all of Netflix. I was enjoying *Yellowjackets*, but when I saw that Juliette Lewis's character drove a Porsche I enjoyed it even more. When she opens the boot to produce a rifle it still impresses that there's no engine at the front of the car. It still surprises people when I load shopping in it. One of the reasons I loved *Californication*... David Duchovny drove a Porsche that was always dirty and slightly bashed-up, just like mine. It gave the car so much more individual character, but I guess for Porsche lovers it would be a disgrace.

So what car to drive while mine was still in car hospital? My friend has a Ferrari 2012 California and let me drive that around town with her by my side at first. Then she let me loose in it. It's such a different beast to my manual Targa. For a start it's longer and not as nippy as the 911. In my Targa I can manoeuvre in London traffic with ease. The Ferrari is more of a cruiser in my hands. Maybe I'm just more nervous of pranging it. Her Ferrari and my Porsche have taken many trips together, vying for attention. I'm biased, but I think my car gets way more love and appreciation. However, they do make a beautiful couple.

Hopefully, I'll soon get back behind the wheels of my beauty of a Targa 911.

Nick Jeffery
Surrey, UK

@npjeffery

@npjeffery

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

If you're chasing maximum acceleration and top speeds, there are plenty of other cars that can deliver that kick for less cash. However, that ignores what Porsche is about, and what the older models offer in terms of driver satisfaction.

The GT3 is a case in point. Each new generation is quicker and more refined that the previous one, but does that make it "better"? Every time I get in my GT3 I'm blown away. That 3.6-litre Mezger engine in the rear is a special motor, from idle all the way to the 8,400rpm redline. Like most race car engines, it possesses an uneven idle, the revs constantly ebbing and flowing as it begs to be driven.

The steering wheel is free from buttons or paddles. The thickness of the wheel is spot on and the overall diameter perfect. The gearbox falls perfectly to hand and it doesn't take long to find the optimum seating position. The view from all angles is perfect, while the proportions and footprint are modest by modern standards, the size perfectly suited to our British B roads. And that's all before you turn a wheel in anger!

It's not all good news, though. The gearbox can be obstinate when cold and the clutch is insanely heavy, which makes driving in traffic an often unpleasant experience. It's noisy too. Wind and tyre roar are the order of the day matched only by the howl of that motorsport-derived flat six screaming out back. On standard dampers the ride is firm. Activating the PASM only makes things worse.

Yet it's the challenge and intensity of the driving experience that keeps you coming back for more. A 997 GT3 isn't a car to relax in. Wrestling the steering across Britain's scarred tarmac, checking your throttle and steering inputs on every corner. Focusing on extracting every last ounce of performance without bouncing off the rev limiter, especially on the down shifts. It all goes to make up a scintillating driver experience unmatched by any other car I've driven – unless you're talking about other 997 and 996 generation GT3s, of course.

I have nothing against the 992 and 991 generations but, for me, they're just too big and too powerful for UK roads. They may offer quicker lap times around your favourite circuit, but most of my driving is done on the road, where the old school charm of the earlier generations shines through.

Ben Przekop
Mercer Island, USA

@benjaminprzekop

Model	**992 CARRERA S**
Year	**2022**
Acquired	**DECEMBER 2021**

After nine long months of waiting, we finally took delivery of our new 2022 911 Carrera S on 14 December at Porsche Bellingham. You can imagine the excitement we felt that morning as we made the 90-minute drive up to Bellingham from our home in Seattle, and that euphoria was only increased by the gloriously sunny weather that greeted us on our journey. It was almost as if the world was celebrating our new arrival.

After an uneventful if nervously excited drive, we found ourselves entering the showroom to see our new 911 for the first time. My wife Debbie and I were both speechless for a moment as we walked around the car, and then started sharing comments like "the Carmine red looks fantastic", and "the lines look so much better than in the pictures", and "the black full leather interior with chalk stitching was a perfect choice."

Next it was time to sign all the paperwork, which my sales consultant Daria Parks had ensured was prepared in advance, so that only took a few minutes. Daria and I then sat in the car for about a half hour while she walked me through several setup steps for things like the in-car Wi-Fi, Porsche Connect and satellite radio, as well as reviewing the controls and the myriad options of this latest version of Porsche Communications Management (PCM). She would have gladly spent much more time with us, but I knew from experience that the only way to really learn these things was to play with them on my own. Besides, it was now lunchtime and we were anxious to get out on the road in our new car and head to our favourite restaurant in Bellingham – Scotty Browns – for a celebratory meal.

Even though our gorgeous new 911 was parked in a quiet corner of their parking lot, we couldn't wait to finish our very tasty lunch and start our return trip home. Unlike the very sunny trip up in the morning, the weather began to turn as we headed south, and soon heavy rain started to fall.

As expected, a dash warning suggested we switch to Wet Mode using the Drive Mode selector on the steering wheel, and the system worked flawlessly to ensure that the prodigious power of this car wouldn't lead to any hydroplaning or lurid slides. We also discovered that on dry and very smooth road surfaces the Bose stereo sounded fantastic, but now with heavy rain and less-than-perfect roads, it was clear that this was no ultra-quiet luxury barge, but a serious sports car with a higher level of tire and engine noise. This endorsed our decision not to spec the car with the much more expensive Burmester system.

My overriding initial impressions were that, as expected, the ride was firm but not brutal; the steering, power and braking were incredible; and it would be equally at home on long trips or on a race track. Having owned nine 911s representing nearly every generation, I can confidently say that this is without doubt the best 911 Carrera produced to date, and I absolutely love it. What a wonderful, fantastic car.

Max Newman
Aylesbury, UK

@maxripcor
9WERKS Radio

Model 991.1 CARRERA S
Year 2013
Acquired SEPTEMBER 2020

I was chatting with Jamie Tyler recently, sales legend at Paragon Porsche. We were talking about my cars, trends in the used Porsche market, and the idea of 'post-pandemic euphoria' which was seen following the Great Depression in the US during the 1920s.

That sentiment may account for some of the price buoyancy and sales activity we witnessed in 2021, and certainly accounts for the decisions I've made. My 991.1 C2S purchase in September 2020 was the result of a commitment I made to myself during the depths of the first lockdown. And it's a good job that I followed it through, because I probably couldn't afford it right now.

The subsequent sale of the 997 was by no means a certainty. But after nearly a decade in my care I was happy to move it on and try something new. The buoyant market in summer 2021 helped to ease the inevitable pain – as did the 991.

The 991 is fantastic, but it's almost too fast on the road sometimes. One of the things I enjoyed about the 997 was the level of performance available – something in the region of 340bhp in my C2 with the Paragon remap, IPD plenum and so on. It's perfectly suited to my local roads. I felt you could really enjoy the engine through its entire rev-range without going ridiculously fast. The 991 at 395bhp sometimes feels on the wrong side of that.

I don't think it's the PDK shifting adding to the impression of speed which makes the difference, either. I enjoyed a great blast back from the gym in our BMW 335i a few days ago. I was in Sport mode and using the paddles on the ZF eight-speed auto box. It has a "mere" 302bhp but again it could be driven hard and very enjoyably, without appearing antisocial.

I didn't plan on buying a Macan in late summer this year, although I've wanted one for many years. Following the sale of the 997 I set out to buy a 4x4 for the winter (a Skoda Yeti in fact), but having realised that everything is expensive I thought I may as well go big and get what I really want. Those buying trends again. I'm pleased with it, even though it's a diesel. At least it's a six-cylinder diesel.

Adding the Macan enables me to represent Team Porsche with even greater regularity, which in turn has made me wonder if I could justify a slightly less-usable 911. Should I perhaps have kept the 997? I don't think so, but I still dream of owning a 993C2 or 997.1 GT3. However, each time I think about spending any money I find myself reverting to the quintessential 911 all-rounders. The 991.1 C2S fits the bill perfectly. A 991 GT3 with folding seats and no cage could be the answer, but remains beyond my reach.

Porsche Centre Leeds lent me a 718 Boxster S 2.5 for a week in September. It opened my eyes to the brilliance of the Boxster package, and introduced me to the joys of open air motoring. I enjoyed it so much that I wonder if I should sell the 991 while the market remains strong, if I can secure an order on a new Boxster GTS 4.0? Heresy in these hallowed pages, I hear you cry! An older Boxster to replace the BMW 335i instead, perhaps...?

James McGrath
Minneapolis, USA

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Auto Amateur
AutoAmateur

Model 996.2 CARRERA
Year 2002
Acquired 2020

It's been quite a month for me as far as my Porsche world goes. After three years of a tremendous ownership experience, I decided that it was time to move from my 991.

Why? Honestly, if you'd asked me a couple of months ago if I would sell my 991, I would have told you a firm "no". I spent a lot of time tailoring that car to my own vision of how a 991 should look and perform. The Soul Performance headers and valved exhaust systems, the addition of factory PSE functionality, carbon fibre trim, leather interior trim with red stitching to tie into the red seat belts I installed, the refurbishing steering wheel, the Sports Design front bumper, the 991.2 rear tail lights, the Moshammer duck tail spoiler... and many more. It wasn't just my Porsche 911, it was *my* Porsche 911.

However, I felt I'd reached the end of my journey with that car. I had no more modifications I wanted to make, I had taken it on several 1,000-plus mile road trips over the course of the year. Short of tracking the car, which would take a heavy toll on the car, it was time to start a new adventure with a new car.

The question now is what's next? Before I talk about my longer-term plans for my Porsche ownership story, I have an unfinished chapter whose ending still needs to be written: my 996 project car.

Some of you may remember I bought a 2002 996 C2 in 2019 and made a series of Project 996 videos about its restoration on my YouTube channel. My friends, Patrick and Steve, and I spent the best part of six months transforming this tired beauty into a fresh new vision of the 996. We replaced the broken transmission, replaced the brakes, powder-coated the brake calipers, replaced the fluids and filters, and installed new Fuchs-style rims with brand new tires.

Arguably the biggest modification was the full-custom paint job, taking what was a relative neutral silver 996 covered in dings and hail damage, and transforming it into an aqua-blue stunner. Every panel, seam, jamb, engine compartment and sill... you'd never know it was ever any other colour. We named the colour Sharkskin Blue (and before Porsche announced its Shark blue with the release of the 992 GT3) in honour of Patrick's business – Sharkskin Design and his unrelenting passion for the colour blue). Unfortunately, the transmission broke (again!) and we discovered an alignment issue with the engine. In short, the pandemic hit and the project got shelved on the far side of my garage while my attention returned to my 991.

Before I can think about my "new" 911, I feel obligated to complete the 996 project car: getting it back on the road with a new lease of life, and on to a new owner who'll enjoy it for the next 100,000 miles. So this is the game plan for the next couple of months. I have a 996 transmission en route from California, I have my eyes on a newly rebuilt 996 engine from a well-known 911 shop in the US and a few other surprises in store for the new owner. Roll on the 996!

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Data file
Full specs, ratings and market values of every Porsche 911 model can be found beginning on page 76

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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 2022 Q2 will be April. The review for 2022 Q1 was January.

Ratings

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

(O series) ★★★½☆

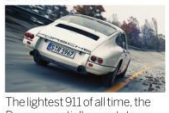
911 2.0-litre 1964-1967

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

(A series) ★★★★★

911R 1968



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.

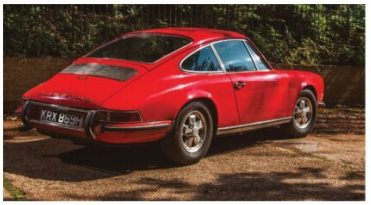
Production numbers	19
Issue featured	94
Engine capacity	1,991cc
Compression ratio	10.5:1
Maximum power	210hp @ 8,000rpm
Maximum torque	152Nm @ 6,800rpm
0-62mph	5.9 secs
Top speed	152mph
Length	4,163mm
Width	1,610mm
Weight	800kg
Wheels & tyres	
F	6x15-inch; 185/70/R15
R	7x15-inch; 185/70/R15

(C & D series) ★★★★½

911S 1970-1971

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) ★★½☆☆

911T 1970-1971

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

★★★★☆

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**

(A series) ★★★★☆
911S 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 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 series) ★★☆☆☆
911T 1968

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 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) ★★★★½
911S 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) ★★★½☆
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) ★★★★½
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	6x15-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.

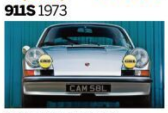
Production numbers	1,590
Issue featured	145
Engine capacity	2,687cc
Compression ratio	8.5:1
Maximum power	210hp @ 6,300rpm
Maximum torque	255Nm @ 5,100rpm
0-62mph	5.8 sec
Top speed	152mph
Length	4,163mm
Width	1,652mm
Weight	975kg (Sport)
Wheels & tyres	
F	6x15-inch; 185/70/R15
R	7x15-inch; 215/60/R15

(F series) ★★★½☆
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.

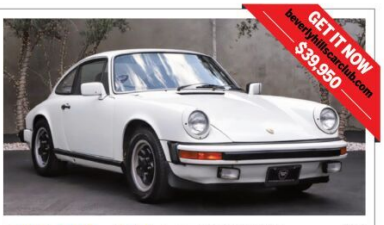
Production numbers	4,406
Issue featured	144
Engine capacity	2,341cc
Compression ratio	8.0:1
Maximum power	165hp @ 6,200rpm
Maximum torque	206Nm @ 4,500rpm
0-62mph	7.5 sec
Top speed	137mph
Length	4,163mm
Width	1,610mm
Weight	1,077kg
Wheels & tyres	
F	6x15-inch ATS; 185HR
R	6x15-inch ATS; 185HR

(F series) ★★★★½
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

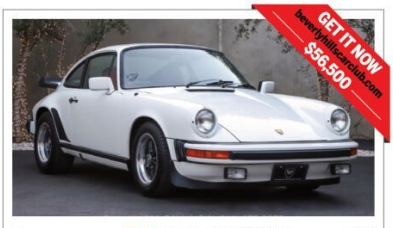
From 1974, Carrera name was given to range-topping 911. Essentially the same engine as previous year's RS for all markets except USA. Whaletail available from 1975.

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



★★☆☆☆
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
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

★★★½☆
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**

▲ ★★★☆☆
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
Width	1,840mm
Weight	1,450kg
Wheels & tyres	
F	8x17-inch; 235/45/ZR17
R	9x17-inch; 255/40/ZR17

Speedster 1989

Carrera 3.2 with a steeply raked windscreen and hood and stripped interior. Porsche claim the hood was not designed to be 100 per cent watertight.

Production numbers	2,274 (for both wide and narrow-bodied)
Issue featured	128
Engine capacity	3,164cc
Compression ratio	10.3:1
Maximum power	235hp @ 5,900rpm
Maximum torque	284Nm @ 4,800rpm
0-60mph	6.0 sec
Top speed	148mph
Length	4,291mm
Width	1,775mm
Weight	1,220kg
Wheels & tyres	
F	6x16-inch; 205/45/VR16
R	8x16-inch; 245/60/VR16

3.2 Clubsport 1987-89

Removing 'luxuries' sliced off around 40kg of weight. Revised engine management gave a higher rev limit of 6,840rpm. Suspension uprated 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
0-60mph	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	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

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 Carrera 4 1989-1993

Heavily revised bodywork with 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

(C & D series) 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; 235/40/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 2001-05

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 2001-03

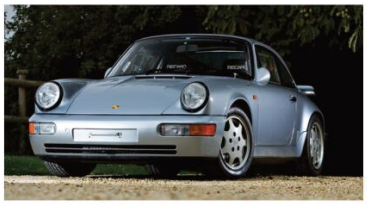
A lightweight, Turbo-bodied 996 with uprated turbocharged engine and suspension. PCCB was standard. Revised ECU later gave an extra 21bhp.

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.

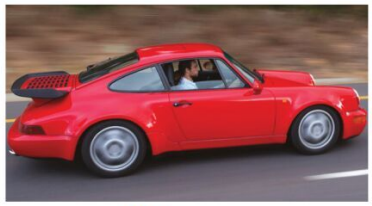
Production numbers	29,389
Issue featured	136
Engine capacity	3,596cc
Compression ratio	11.3:1
Maximum power	320hp @ 6,800rpm
Maximum torque	370Nm @ 4,250rpm
0-62mph	5.0 sec
Top speed	177mph
Length	4,430mm
Width	1,770mm
Weight	1,370kg
Wheels & tyres	
F	7x17-inch; 205/50/R17
R	9x17-inch; 255/40/R17



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.

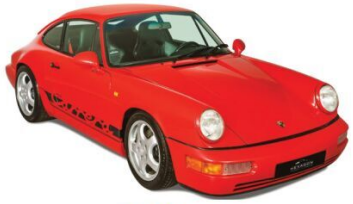
Production numbers	22
Issue featured	131
Engine capacity	3,600cc
Compression ratio	11.3:1
Maximum power	265hp @ 6,720rpm
Maximum torque	304Nm @ 6,720rpm
0-62mph	4.5 sec
Top speed	125mph
Length	4,275mm
Width	1,652mm
Weight	1,100kg
Wheels & tyres	
F 7x16-inch; 205/55/ZR16	
R 9x16-inch; 245/55/ZR16	



964 Turbo 1991-1992

This used the revised 964 bodyshell, 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	7.0:1
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	

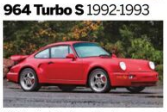


964 RS 1991-1992

120kg saved by deleting 'luxuries' and fitting magnesium Cup wheels. Power was boosted by 10bhp, suspension lowered by 40mm and uprated, 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	7.0:1
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	7.5:1
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	

993 Carrera 1993-1997

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	8.0:1
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; 235/40/ZR18	
R 11x18-inch; 285/35/ZR18	

993 Turbo S 1998

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	8.0:1
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; 225/40/18	
R 10x18-inch; 285/30/18	

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

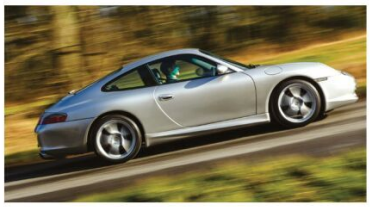
Four-wheel drive transmission fed five per cent of power in normal driving, increasing to 40 per cent when required. PSM used for first time, rolled out across the range in 2001.

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	

996 Anniversary 03-04

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

Are Tiptronic 911s a hard sell?

The PDK double-clutch automatic gearbox is so good, the decision between manual or automatic can be quite a dilemma for 911s from 997.2 onwards. But where does that leave models that have the previous incarnation of automatic technology, the Tiptronic models? Are they tougher to sell, and take up valuable forecourt space?

"In short, no," says Philip Raby, of Philip Raby Specialist Cars. "We had two in lately, both 996; a Cab and a Coupe. Both sold within 24 hours," he says. With many of our everyday cars being automatics, Raby thinks that familiarity with two pedals means owners are happy to go for Tiptronic 911s. Paragon's Jamie Tyler agrees. "There may have been a phase where they were unloved, mainly down to the introduction of PDK, but in recent times we have found a resurgence in the popularity of Tiptronic cars," he says, reasoning that may be because of the shortage of good manual 996/7 stock.

Don't think owners are making do, though. Raby highlights that budget does play a part, but also makes the point that Tiptronic gearboxes are solid, proven units, which bring other benefits to a 911 than simply the lower cost. "You know that a Tiptronic car won't have been thrashed, there's no clutch to wear; they're a good, solid option," he says.

Which brings us to something all 911s face today: traffic density. Whilst we may dream of the open road, Raby points out: "In reality, all driving involves stop-start traffic, so Tiptronic is more convenient, most of the time. Tyler also echoes this. "For people that are driving in and out of town it is superb, giving you the best of both worlds," he adds. "It is actually a good gearbox, and we sell lots of them."

"A 993 Tiptronic will always be a harder sell, and a manual will sell quicker," reveals Paragon's Tyler, but Philip Raby reminds us: "964 and 993 were relatively small production runs compared to water-cooled models, so we don't see the same quantity of Tiptronics in the 964 and 993."

As ever, there are no bad 911s, just different options to suit how you use them.

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 Carrera 2004-2008

★★★★★

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

997.1 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/R19
R	12x19-inch; 305/30/R19

997 GT2 2007-2009

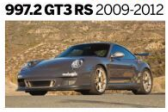
★★★★★

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

997.2 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 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

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.

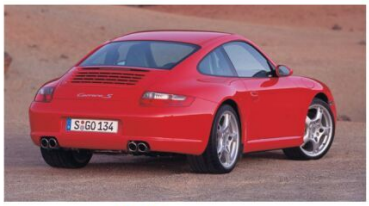
Production numbers	2,000
Issue featured	123
Engine capacity	3,800cc
Compression ratio	9.8:1
Maximum power	530hp @ 6,250-6,750rpm
Maximum torque	700Nm @ 2,100-4,250rpm
0-62mp	3.3 sec
Top speed	195mph
Length	4,435mm
Width	1,852mm
Weight	1,585kg
Wheels & tyres	F 8.5x19-inch; 235/35/ZR19 R 11x19-inch; 305/30/ZR19

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



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.

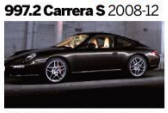
Production numbers	19,201
Issue featured	159
Engine capacity	3,600cc
Compression ratio	9.8:1
Maximum power	480hp @ 6,000rpm
Maximum torque	620Nm @ 1,950-5,000rpm
0-62mph	3.9 sec
Top speed	193mph
Length	4,450mm
Width	1,852mm
Weight	1,585kg
Wheels & tyres F 8.5x19-inch;235/35/R19 R **11x19-inch; 305/30/R19**	

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	3.3 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 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; 235/35/19	
R 11x19-inch; 305/30/19	

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 8.5x20-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

056 964'S EXTENDING REAR SPOILER

The 964 was the first 911 to utilise an active rear wing, but why is it there and how does it work?

The 964 model, introduced in 1988, may have given the appearance that little had changed over the previous G-series model. In fact that was partly true for the design, which maintained the existing shape and gave it a clean up, smoothing bumpers, and adding an engine undertray. I can recall Porsche Design supremo Anatole Lapine, who oversaw the 964 redesign, joking to me about the impossibility of redesigning the 911 shape, so worked under the car instead; hence the engine undertray.

His jests aside, the 964 was indeed a new model, and claimed to be 85 per cent so over the previous model. Many modern driving aids we take for granted on 911s originated from the 964, which saw power assisted steering, ABS brakes and four-wheel drive feature in a 911. However one debuting 964 feature wasn't added for technological advancement, but plain old aerodynamics.

In smoothing out the bodywork and adding the undertray, the drag co-efficient of the car dropped to 0.32Cd – almost half of the previous 911. Good news, but not in testing, when it was noted the wingless rear of the 964 generated lift at the rear at high speeds. To maintain the clean lines of the then-new car, a neat rear deck lid was created, featuring an integrated, automatically extending rear wing.

With this, at 50mph (80kph), a neat panel incorporated into the rear deck lid rose up, via a cable operated motor, to tame rear lift issues at speed. As the car slowed, and the wing was deemed unnecessary, it then lowered, automatically, at 6mph. Operated via a speed sensor, this meant the clean silhouette of the 964 was maintained until performance dictated extra aero was required. Should the owner wish, a dial on the centre console allowed manual deployment of the wing.

It was a typical Porsche solution, to a typically Porsche problem. Porsche Active Aerodynamics (PAA) may just be one more acronym on a spec list today, but don't dismiss its importance, engineering thoroughness, nor origins. Like so much Porsche technology, the original concept is a historic one, born purely from a need for ultimate sports car performance.

★★★★☆

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

★★★★☆

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

★★★★½

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**

★★★★½

991.2 Carrera 4 2016-08

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

★★★★½

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

★★★★★

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

★★★★★

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

★★★★★

991 Speedster 2019

Limited-edition special from Flacht 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

★★★★½

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@ 2-5,000rpm
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 R11.5x21-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

★★★★½

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

★★★★½

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

★★★★½

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	4,549
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@ 2-5,000rpm
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 992 Carrera's engine, with intercoolers now on top and air filters housed behind side air intakes. PSE and Sports chassis optional for 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 HDE 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 @ 2-5,000rpm
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

▲ ★★★★★

992 GT3 2021-

New swan neck wing design, double wishbone front axle and GT3 R diffuser. 50% more downforce over 991.2 GT3, sub 7-min 'Ring time.

Production numbers	1,000 (est. for 2021)
Issue featured	199
Engine capacity	3,996cc
Compression ratio	13.3:1
Maximum power	510hp @ 8,400rpm
Maximum torque	470Nm @ 6,100rpm
0-62mph	3.4secs
Top speed	199mph
Length	4,573mm
Width	1,852mm
Weight	1,418kg (manual)
Wheels & tyres	
F	9.5x20-inch; 255/35/ZR20
R	12x21-inch; 315/30/ZR21

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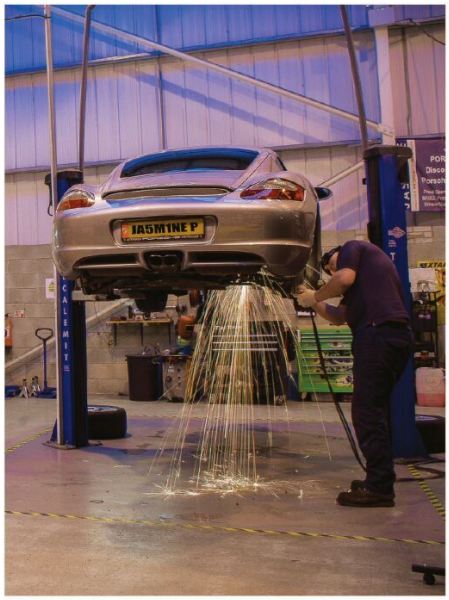
Servicing, parts and restoration

Jasmine takes pride in the quality and craftsmanship of their restorations and renovations. Using OEM parts or OE (at the request of the customer), they carry out high-quality and sympathetic 911 revivals and both air-cooled and water-cooled servicing. They are always looking for and working on new and interesting projects and offer a full service from shell to complete model! All of



this is made easier by having their own parts department with everything from carburettors to bonnets.

Porsche sales

Jasmine Porschalink always has an interesting range of Porsches and 911s for sale. A great example is the white 1988 RHD 911 930 Targa Sport (top left image) with just 83,500 miles on the clock and a service and engine recommission by renowned Porsche specialist 9M. You can view the full sales range on the Jasmine website.

Valuations and pre-purchase inspections

Purchasing a pre-owned Porsche can be a daunting experience, as there is a lot more to buying a Porsche or any supercar than meets the eye. Even a one or two-year-old example can have led a chequered life and if you are not familiar with the cars, why should the purchase of a lifetime turn into a nightmare? Jasmine Porschalink provides a peace-of-mind service when buying a used Porsche. Taking a personal, independent and practical approach, they can tell the potential Porsche owner about any work that may be required and an estimate of how much this may potentially cost, while also being able to give guidance on the desirability of models and features along with guidelines around the price you should pay and expected specification. 911

COMMISSION YOUR PORSCHE 911 AS FINE ART

Many 911 owners would already consider their car to be a piece of automotive art – we certainly do – and gazing over the curvaceous bodywork can give many hours of pleasure. But there's more than one way to enjoy the stunning appearance, and having it committed to canvas would be special indeed. Which brings us to the work of renowned artist, Rob Hefferan. Fascinated with art since childhood, his first exhibition in 2003 showcasing his skills in figurative work and portraiture was a resounding success. It's those skills along with an international reputation for quality and unrivalled attention to detail that has led to his work being commissioned by numerous celebrity clients, and it turns out that Rob has another passion; "I've been obsessed with cars since I was young, and that developed into a love for Porsches, and the 911 in particular".

A serial owner of our favourite sports car, his collection has included the 996, both generations of 997 model, and he now enjoys a 991 Carrera S. A proper car guy, then, which is why he's decided to focus his talents on the Zuffenhausen marque, offering owners and enthusiasts the opportunity to have their pride and joy recreated as fine art. He admits this is a new challenge and one he relishes, already having set to work creating around a dozen paintings of various Porsches. While such artwork isn't entirely new, what's different here and core to Rob's ethos is capturing even the smallest of details that make each car unique. And having seen it for ourselves we are talking about beautiful pieces of art here, the sort of work that would complement 911 ownership in a way that other pictures just can't. Painted either in oils or acrylic depending on the timescales involved, each work can take anything from 150 to 300 hours to complete and the work is also unusual compared to other automotive artists in that he is happy to depict not just the car but to include the owner as well. It's where the talent for portrait work really pays off.

As for the process of commissioning a painting, an owner can either provide pictures of the car or Rob will travel to view your 911, employing a professional photographer to take dozens of detailed reference shots from which to work. It's a painstaking process but one that results in something very special, but there was something we were keen to ask and that's whether he had a favourite 911. "Not really" says Rob. "I love all of them, but if pushed I guess I'd have to say it's the cars from the 1960's that most capture my attention."

"It's the shape and form that I find so appealing, and the way the light falls on the bodywork. There are few cars like it, and I really admire Porsche's heritage, especially when it comes to motorsport." That emphasis on history and quality really shines through when it comes to the finished painting, and whether you own just the one car or are lucky enough to have a collection to see them represented in such a way is likely to prove very hard to resist.

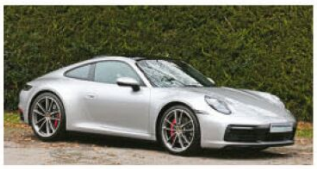
You can see examples of Rob's work by visiting his website at **www.robhefferanautomotiveart.com**, but we'll say now that you should be prepared to find yourself as tempted to commission his services as we are. **911**


"I've been obsessed with cars since
I was young, and that developed into
a love for Porsches, and the
911 in particular"
RH 2

911 GT3 (991 GEN II)

Carrara White Metallic • Black Half-Leather 918 Bucket Seats • PDK Gearbox 20" GT3 Centre Lock Wheels • Porsche Ceramic Composite Brakes • Clubsport Package • 4,392 miles • 2017 (67)

£145,995



911 Carrera 2 S (992)

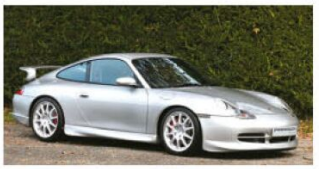
GT Silver • Graphite Blue Leather Seats PDK Gearbox • 20/21" Carrera Classic Wheels • Switchable Sports Exhaust Touchscreen Satellite Navigation Glass Sunroof • 9,772 miles • 2019 (19)

£104,995

911 GT3 (996)

Arctic Silver • Black Leather Bucket Seats 18" GT3 Wheels • Bi-Xenon Headlights Rear Roll Cage • Guards Red Seat Belts Previously Sold & Serviced by Paragon 50,727 miles • 2003 (53)

£82,995



911 GT3 (996)

Arctic Silver • Black Leather Bucket Seats 18" GT3 Split Rim Wheels • Rear Roll Cage • Air Conditioning • Previously Sold & Serviced by Paragon • 67,632 miles • 1999 (V)

£79,995

Boxster GTS (981)

Dark Blue Metallic • Luxor Beige Leather Sports Seats • Manual Gearbox • 20" Carrera Classic Wheels • Switchable Sports Exhaust • Full Leather Interior Sport Chrono • 29,538 miles • 2015 (15)

£54,995

Cayman T (718)

Jet Black Metallic • Black Half-Leather Bucket Seats • PDK Gearbox 20" Carrera S Wheels • Switchable Sports Exhaust • Sport Chrono 6,252 miles • 2019 (19)

£52,995

Boxster S (718)

Jet Black Metallic • Black Leather Sports Seats • PDK Gearbox • 20" Black Carrera S Wheels • Switchable Sports Exhaust Touchscreen Satellite Navigation 16,671 miles • 2017 (17)

£52,995

911 Turbo (996)

Basalt Black • Black Soft Ruffled Leather Seats • Tiptronic S Gearbox • 18" Turbo II Wheels • Factory Hardtop • Satellite Navigation • Previously Sold & Serviced by Paragon • 59,273 miles • 2003 (53)

£49,995

Boxster (718)

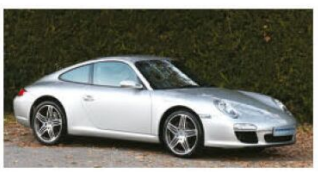
Jet Black • Black Leather Sports Seats PDK Gearbox • 20" Carrera S Wheels Switchable Sports Exhaust • Heated Seats & Steering Wheel • 6,965 miles 2018 (18)

£49,995

Boxster S (718)

Lava Orange • Black Leather Sports Seats • PDK Gearbox • Sport Chrono 20" Black Carrera S Wheels Switchable Sports Exhaust 12,247 miles • 2016 (16)

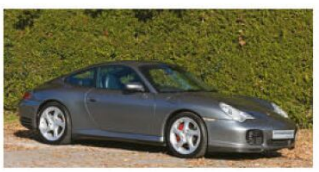
£49,995



911 Carrera 2 (997 GEN II)

Arctic Silver • Black Leather Seats Manual Gearbox • 19" Turbo Wheels Touchscreen Satellite Navigation Previously Sold & Serviced by Paragon 51,657 miles • 2009 (59)

£44,995



911 Carrera 4 S (996)

Seal Grey • Dark Blue Leather Seats Manual Gearbox • 18" Turbo II Wheels Electric sunroof • Electric Memory Seats • Previously Sold & Serviced by Paragon • 64,416 miles • 2003 (03)

£35,995

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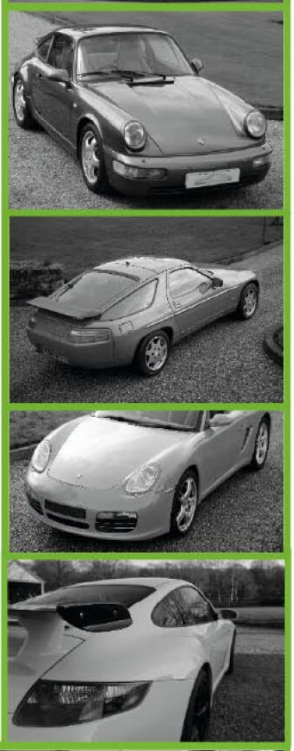

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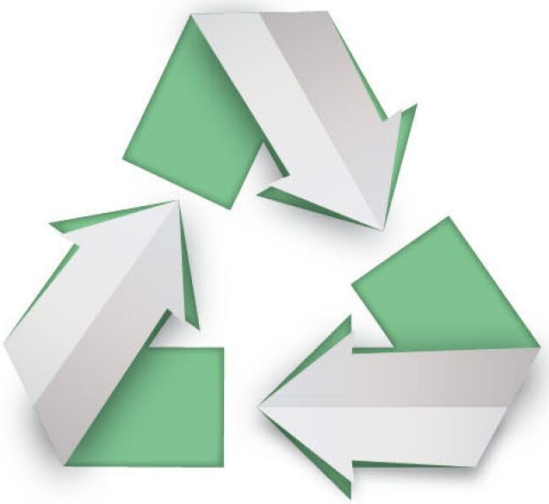

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Everything you need to know about the fearsome 'widow maker' 996

964 RS AMERICA

Full story on the 964 Rennsport destined only for the US market

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Porsche Moment

Total 911 recounts the story behind a famous picture from Porsche's past...

There were sighs of relief from Porsche enthusiasts when in 1990 the company finally released its new 911 Turbo. Missing from the original launch of the 964 C4 in 1988, the Turbo's failure to appear at the presentation of the 964 C2 a year later had the Porsche community wondering whether, given its parlous financial position, Porsche had done the unthinkable and abandoned the Turbo. Its successful unveiling at Geneva the following spring was also a matter of considerable relief within Porsche itself.

New CEO Arno Bohn is seen here whisking the cover off with help from his predecessor Heinz Branitzki (right) while an audience of photographers clicks away. In the centre is Butzi Porsche, who had just taken over from Ferry as chairman of the Vorstand, and on the left behind Bohn, Ferry's cousin Norbert Wagner, long-serving head of Sonauto.

The internal difficulties which preceded the launch of the 964 Turbo were the result of the same overambition which characterised (and almost sank) the development of the 959. The stillborn Typ 965 was intended to take the blown 911 considerably upmarket with air suspension, a double-clutch gearbox and a water-cooled head amongst other high-tech attributes from the 959. Once again, like the 959, it was a step too far and protracted difficulties with engine development meant that by 1988, the project had not even reached prototype stage. Incoming technical director, Ulrich Bez, hired from BMW to replace Helmuth Bott in October that year, took one look at the Typ 965 and promptly abolished it.

It was the right decision, observes 911 programme manager Fritz Bezner, but it did leave Porsche with a turbo-size gap in its range. Bezner, who began at Zuffenhausen as an apprentice on the 356, proposed fitting a 964 chassis with the existing 3.3 Turbo engine equipped with the Sportpaket upgrade. Duly catalysed, its 320bhp proved enough to meet Porsche's performance benchmarks of 265kph and 0-100kph in five seconds. Lack of time and budget entailed some compromises, one of which was the decision to retain the Turbo's Jetronic injection when Bosch's later Motronic would have provided finer control and economy. Compromise notwithstanding, the new Turbo impressed the magazines and while Peter Robinson of *Autocar* recognised that this was an interim model, he was full of praise for the new chassis which made this the first Turbo to have all-round strut suspension, power steering and ABS. Although production of the 964 Turbo did not begin until October 1990 because the wider bodywork required preparation, Zuffenhausen outshopped over 3,800 cars before the 3.6 Turbo was announced in autumn 1992.

"We had hoped to build 2,000 965s on the basis that they would be profitable if we could make 8-10 per week," Fritz Bezner told **Total 911** in 2015. In the event they sold almost twice as many of his "interim" Turbo, which were also considerably more profitable.


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