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1968 Porsche 911L Soft Window Targa Stock Number 10296

This very rare and collectible 1968 Porsche 911L Soft Window Targa is available in this gorgeous color combination of brown with a black interior with Pepita inserts. It comes equipped with a 1968 period correct 2.0 liter with a manual transmission and Fuchs wheels. An extremely clean and presentable vehicle which had the same owner for many years. The Targa is a limited production and is also mechanically sound.

For \$84,500



1977 Porsche 9115 Coupe Stock Number 10861 This 1977 Porsche 911S Coupe with matching numbers is available in its original color code#936 silver with a black interior. It comes equipped with a 5-speed manual transmission, power windows, sunroof, Fuchs wheels and includes the spare tire. It has a lot of potential and is mechanically sound.

For \$21,750



1975 Porsche 9115 Coupe Anniversary 11080 The 1975 Porsche 911S Coupe Anniversary with matching numbers is available in blue with a black interior. It comes ed with a manual transmission, cookie-cutter wheek, f and includes the spare tire and jack. This car has a lot ntial and could use some light cosmetics. It was with the wner for many years and is also mechanically sound.

For \$23,500



1975 Porsche 911 Coupe Stock Number 10882 This 1975 Porsche 911 Sunroof Coupe is available in its original color code#406 Gazelle Metallic with a tan interior. It comes equipped with a manual transmission, 3.0-liter engine, solid wheels, sunroof and includes the original owner's manual. It was with the same owner for many years and is a very presentable vehicle, which is mechanically sound.

For \$27,500



1983 Porsche 911SC Stock Number 10911 The 1983 Porsche 911SC with matching numbers is available in red with a black interior. It comes with a clean Carfax and is equipped with a manual transmiss wide body slant nose kit, power windows, MOMO steering wheel, soft top with boot, ROH wheel and includes the spare tire and tool kit. This vehicle is mechanically sound.



1974 Porsche 911S Targa Stock Number 11114 The 1974 Porsche 91 IS Targa with matching numbers is available in its original color code#516 desert beige with a tan interior. It comes equipped with a 5-speed manual transmission, Fuchs wheels and includes the spare tire and tool kit. This car is mechanically sound.

For \$28,500

For \$33,500



1986 Porsche Carrera Targa Stock Number 10849 This 1986 Porsche Carrera Targa with matching numbers is available in blue metallic with a black interior. It comes with a clean Carfax and is equipped with a 5-speed manual transmission, power windows, Fuchs wheels and includes the spare tire. A very clean and presentable vehicle which had the same owner for many years and is mechanically sound.

For \$29,950



1983 Porsche 911SC Sunroof Coupe Stock Number 10897 This very presentable 1983 Porsche 91 ISC Sunroof Coupe shown here with matching numbers is available for sale in red with a grey interior. It comes equipped with a manual transmission, air conditioning, power windows, and Fuchs wheels. This is an excellent weeker driver which is also mechanically sound.

For \$29,950





1987 Porsche Carrera Targa Stock Number 11047 This 1987 Porsche Carrera Targa with matching numbers comes in Grand Prix white with a tan interior. It comes equipped with a G50 transmission, air conditioning, power windows and Fuchs wheek. This is a very presentable and excellent original car which is mechanically sound.

For \$32,500







1985 Porsche Carrera Cabriolet Stock Number 11076

This 1985 Porsche Carrera Cabriolet with matching numbers and 83,653 miles on the odometer is available in its original color code 33P Irish blue metallic with a blue interior. It comes with a clean CarFax and is equipped with a manual transmission, soft top and power windows. It was previously owned by a PCA owner. This is an excellent weekend driver and is mechanically sound.

1996 Porsche 993 Cabriolet Stock Number 11089

This excellent original 1996 Poische 993 Cabriolet is available in its original color of black with a black interior. It comes with a clean Carfac and is equipped with a 6-speed manual transmission, air conditioning, power windows, cheme wheek and it also includes a complete service history from 2000 to 2019 coaling over \$55,000 that documents everything from major services, minor services all the way down to the regular details and simegche ds. This is an excellent original 2 owner Galibmia example that has been with the previous owner for the majority of the millemium and has been extremely well taken care of The car is mechanically sound. Don't miss cut on this one. For \$37,500

1997 Porsche 993 Cabriolet Stock Number 10588

The 1997 Porsche 993 Cabriolet featured here with 90,827 miles on the odometer is available in dark blue metallic with a tan interior. It comes equipped with a Tiptronic transmission, air conditioning, cruise control, dual air bags, power windows, power steering, power seats, solid wheels, drilled rotors, power soft-top and includes the spare tire. It is also mechanically sound.

For \$29,950

1985 Porsche 930 Stock Number 09881

This one-owner 1985 Porsche 930 with matching numbers and a very low 38,987 miles on the odorneter is available in its original color code#700 black with a black interior. It comes with a clean Carfax and has mostly original paint. It is equipped with a 4-speed manual transmission, power windows, TRW seat belts, Fuchs wheels, sunroof and includes the spare tire, jack and over \$3,000 in recent service records. An extremely clean and presentable vehicle which is mechanically sound.

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Welcome

hey're calling it the massacre of Monterey. One of the highlights of Car Week in California, auction houses present their sales in front of some of the world's wealthiest people, who flock to the coastal city to indulge in a festival of luxurious and collectible sports cars. This year though, it's fair to say auction house sales had lost their sparkle.

In many ways the writing was on the wall. Most luxury marques and models, including the Porsche 911 in its various iterations, are down in value compared to a year or two ago. The 911 R and 997 GT2 RS are good cases in point: both these collectibles were valued at 20 per cent more just 12 months previously. Developments – or lack of – at Monterey sought to confirm this downwards trend. Many lots didn't sell, including desirables including a 993 GT2 and 2.7 RS Touring, while others were way down on reserve by the time the hammer fell. The entire Monterey sale will be remembered by the farcical events around lot 362, the sole remaining Type 64. Not technically a Porsche, this is a 1939 car built and driven by Dr Ferdinand Porsche and was intended to compete in a Berlin to Rome race in honour of a Pact of Steel between Nazi Germany and Fascist Italy at the time.

Lot 362 was expected to fetch \$20 million, but a mistake started the bidding at \$30 million instead of \$13 million, with 'offers' climbing to \$70 million (rather than \$17) before the error was realised. Among derision in the room, the sale collapsed.

Regardless, Sotheby's sale was down 25 per cent overall on 2018, a very definitive marker as to the state of the market presently. There's much conjecture as to why this is the case, from generic talk of a recession, to changes in buying habits of younger generations.

Without doubt there's very little confidence in the market right now, but this downward trend in values is no bad thing. It is a widely held view in the industry that prices have been too high for many models for some time now, so an adjustment – no, a reality check – was dearly needed. It looks like that's

"Prices have been too high for some time now"

exactly what we got from Car Week.



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Signature Signat

An 86-year-old Ferry Porsche, who was responsible for the first-ever Porsche car sold by the company in 1948, stands alongside the millionth example nearly 50 years later. The car in question, a 993 Carrera 2 with VarioRam, was given to the German highway patrol, where it served for ten years before being handed back to Porsche. Today it can be found on display in the Museum, just the other side of Porscheplatz from where it first rolled out into the Stuttgart sunlight.

Photograph courtesy **Porsche Archive**

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Martini 930

The Editor explores the history of Martini and Porsche with a drive in a rare 930

The story of chassis 57

Full, incredible story of the 901 barnfind brought back to life by Porsche Classic

911 tech: induction

Induction systems in the 911 have changed dramatically over the years. We explore its development, with particular reference to the 993's VarioRam

935: the privateers' story

Porsche stopped production of its successful 935 race car in 1979. **Total 911** explores its development in the hands of privateers thereafter













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





992 Carrera finally revealed

New entry-level 911 remains PDK only - for now

Porsche has unveiled its base-level Carrera for the 992 generation. Featuring a detuned version of the same 3.0-litre 9A2 'Evo' flat six found in the Carrera S, the turbocharged Carrera puts out 385hp, which is fed to the rear wheels only. The power output is 15hp more than the base 991.2-generation Carrera before it.

The base car will feature a staggered wheel size between front and back axles for the first time: 19-inch on the front and 20-inch at the rear. Other visual differences to the C2S include smaller brakes with black calipers, and two single-exit tailpipe covers. A wide body, Porsche Wet Mode and the 10.9-inch touchscreen carried over from the C2S and C4S are all standard features. The 992 Carrera is available from £82,000 in the UK, and the Carrera Cabriolet is available from £92,000.

Porsche was expected to use the new Carrera's unveiling to announce availability of an optional manual gearbox to the 992 range, however, Zuffenhausen insists both it and the Carrera S, in Coupe and Cabriolet body styles, are PDK-only – for now. It looks like Porsche will therefore announce availability of a seven-speed manual gearbox – which has been improved over the 991.2 – when it unveils the Carrera 4 before the end of the year.

This drawn-out approach to expanding the 992 Carrera range does not follow Porsche's protocol from previous generations, when both the C2 and C2S were unveiled at the same time. Expansion of the 992-generation 911 has been stunted, however, by Porsche's efforts to promote its Taycan all-electric sports car, which will make its world debut at the Frankfurt Motor Show later this month. **Total 911** expects the 992 Turbo to be announced by January 2020, with the 992 GT3 arriving in March.

GT3 turns 20

A number of celebrations have taken place to mark 20 years of the 911 GT3's existence. Revealed in March 1999 at the Geneva Motor Show, first examples rolled out of Weissach for the following model year. Porsche Club GB celebrated by hosting a GT3-only event at the Porsche Experience Centre, Silverstone, while Porsche Switzerland hosted a road trip for GT3s through the Alps.



Porsche Digital expands in US

The Porsche Digital subsidiary has opened its second premises in the US as it looks to expand its global network. The company will now work from PCNA's HQ in Atlanta, Georgia, as well as its existing premises in Silicon Valley, California. A team of business experts, designers and software engineers will develop new digital business models at this location.



Targa Florio-winning RSR returns to Sicily

'R6' retraces its steps with Gijs van Lennep in Italy

The 1973 Targa Florio-winning Carrera RSR 'R6' prototype has been reunited with victorious driver Gijs van Lennep to retrace its steps around the notorious Sicilian street circuit.

Having been given a complete restoration by historic Porsche specialists Maxted Page, completed in April 2018, the Essex-based outfit have worked with the Porsche Museum to bring Dutchman van Lennep and the car back together some 46 years after that remarkable win.

Maxed Page was offered the opportunity to restore chassis 360 0588, which started with an arduous three-month period of intensive research covering factory records, race sheets, period photographs and visits to the Museum archives to establish its true and exact specification. This intensive research enabled Maxted Page to restore the precise set-up used on R6 in the race itself, right down to individual gear ratios used, spring rates and even the type of brake pads fitted.

For more pictures and the full story of the Sicilian adventure, visit the Porsche Newsroom website.





- Salon Privé 2019 **5-7 September** The popular concours returns to Blenheim Palace
- Frankfurt Motor Show **12-22 September** Porsche will reveal its first allelectric sports car to the world
- A sale of Porsche **21 September** Fifth annual sale in partnership with Porsche Club GB
- Petit Le Mans 9-12 October Curtain closer to the 2019 IMSA season takes place at Road Atlanta
- Formula E 2019/20 race 1 **November 22** Porsche will make its first steps in the world championship for electricpowered cars in Saudi Arabia



Some 992s preregistered in the UK



Porsche Germany issues 1 billion

Changes to emissions legislation forces some dealers to buy their own cars

Total 911 understands a selection of Porsche Centres in the UK have preregistered 992s for the first time. The unprecedented move, which has not been confirmed by Porsche GB, is commonplace in the wider automotive industry, and usually allows franchises and manufacturers to hit sales targets within a specific timeframe. However, our industry insider says the move is down to an emissions deadline, with 'new' cars currently sitting on forecourts needing to be registered by August 31st in order to comply with updated EU regulations. A preregistered vehicle means the dealer becomes the first name on the vehicle's log book.

euro Schuldschein

Largest 'green' Schuldschein is the first of its kind by an auto maker

Porsche has issued a green Schuldschein of 1 billion euros which it says will be used exclusively to fund sustainable projects. Porsche issued its green Schuldschein in tranches offering maturities of five, seven and ten years, with both fixed and variable interest rates. The company says huge demand resulted in the original order book volume having to be increased, with over 100 institutional investors now involved. "We have seen that more and more investors want to invest their funds sustainably. With the green Schuldschein, we now give lenders such an opportunity", says Lutz Meschke, member of the Executive Board for Finance and IT.

Motorsport Prominent news and results from racing series around the globe



Porsche maintains championship lead with podium at Road America Vanthoor and Bamber take 3rd in IMSA round eight

Works drivers Laurens Vanthoor and Earl Bamber have extended their lead at the top of the IMSA WeatherTech SportsCar Championship standings after a credible 3rd-place finish in round eight at Road America.

The driver pairing went into the weekend at the summit of the GTLM standings and started the race in 25-degree sunshine from 4th position. A carefully planned strategy tried to take into account forthcoming caution

periods on the 6.5-kilometre circuit. However, an uncharacteristic race without any yellow phases materialised, which left Porsche to battle it out for a podium. In the end Bamber crossed the line in 3rd to extend his and his driving partner's championship lead to 14 points.

The result also means the Porsche GT team continues its streak of podium appearances for at least one of its cars at every race of the highly competitive GTLM championship. In the sister

911 RSR, teammates Nick Tandy and Patrick Pilet crossed the line in 7th place after two hours and 40 minutes of racing in Wisconsin, having started from 6th, and sit second in the driver's championship behind Vanthoor and Bamber. The results also mean Porsche has cemented its place at the top of the manufacturers' standings.

Round nine of the IMSA WeatherTech SportsCar Championship headed to Virginia International Raceway as **Total 911** went to print.



Ammermüller closes gap to Andlauer in Supercup

One point separates top two after Ammermüller's second win of season

It's tight at the top of the Porsche Supercup standings with just one point separating veteran Michael Ammermüller from Porsche Junior Julien Andlauer. Ammermüller's victory in round six at Budapest, his second of the season, ensures

Andlauer's total points tally so far is 85 points, with Ammermüller now just behind on 84. The Porsche Supercup heads to Belgium's Spa Francorchamps for round seven of the ten-race championship, taking place on 1 September.

there is all to play for in the final four races of the 2019 championship.

"At first, Julien Andlauer and I were at about the same speed. But then he made a couple of mistakes and I grabbed my chance. I'm particularly pleased that I could present our team boss Walter Lechner with such a gift for his 70th birthday," said Ammermüller after the race. Andlauer, who started the race from pole, finished in 2nd place in Hungary to ensure his sensational form this season continues, despite losing a crucial place to his Lechner teammate and championship rival.



Guest columnist: Vic Elford | 11





It is 51 years since Vic's win at the 24 Hours of Daytona, the gruelling Targa Florio race and the 1,000-kilometre race at the Nürburgring. **Total 911**'s own Tony McGuiness continues discussing the golden age of motorsport with the legendary Porsche driver, nicknamed "Quick Vic"

wo weeks after winning the 1968 Targa Florio in the Porsche 907, I headed to the next round of the World Championship, the Nürburgring 1,000km. I had many hours and many laps under my belt at the famous track, so I was very much looking forward to the race.

Porsche introduced the new 908 3.0-litre, eight-cylinder Coupe for the 1,000km race. I was paired with the late Jo Siffert. The 908 was essentially identical to the 907, except the engine was larger and less complicated. Jo and I had more than a few problems during practice and qualifying, forcing us to start way back in 27th place on the grid. Despite the rough start we battled back to win the 1,000km Nürburgring race by more than three minutes over Hans Herrmann and Rolf Stommelen in their Porsche 907 2.2-litre.

During my career I won a total of six victories at Nürburgring. One of those wins was in a special lightweight 911R. It had a standard engine but for the first time used a Sportomatic gearbox. It was the only competition appearance in a factory car for the Sportomatic. We won a comfortable, famous victory at Nürburgring using this brandnew technology invented by Porsche.

1968 started off with a fabulous victory for Porsche and I at the Monte Carlo Rally (pictured above). It would end with two more rallies, one of them being my beloved Tour de Corse. For these rallies I was fortunate to drive the ultimate development of the 911: an incredible 911R. This 911R was fitted with a brand-new 2.0-litre twin-cam version of the six-cylinder engine. It had a lot of power and huge torque all the way through the range. It now went to 8,200rpm. This remarkable engine was not only the basis for the 908 eight-cylinder, but also for what would later



oil everywhere. It had pumped out past an oil filter that had been deliberately unscrewed. The 911R had been sabotaged.

Several years earlier the Triumph team had been similarly sabotaged. After the wonderful welcome Porsche and I received two years earlier at this rally, it was very upsetting this occurred. Why such sabotage happened and who was responsible, nobody will ever know.

By now my relationship with Porsche was stronger than ever. I had convinced them the 911 could be a successful race car and gained their confidence. Porsche had complete trust in me and valued my input in many ways. One evening at dinner with Peter Falk, he said to me: "Vic, now that Porsche is expanding with all our competition success, we would like to have a French driver in the team for commercial reasons. You know all the and victory at the 1971 1,000km Nürburgring. Gerard and I shared not only success together but a close friendship that lasts to this day.

I planned on sharing my experiences with the remarkable 917 and discussing the intense and sometimes ugly rivalry between the highly competitive John Wyer Gulf Porsche team and the Porsche Salzburg team. However, I have so much to share on both topics. Because the topics are closely connected and entwined in certain ways, I will begin discussing the 917 and the rivalries next month. My experiences are extraordinary stories which I'm certain you will find fascinating.

I will leave you with a few little-known facts: I was the only driver to race every version of the Porsche 917. In 1970 I was the first driver to lap the Le Mans track at an average speed of more than 150mph in my #25 Porsche Salzburg long-

be developed into the monster 917 flat-12 engine.

The twin-cam coupled to the lightweight 911R would have been a formidable weapon on the track, but not on rough rally roads. On such surfaces the car spends a lot of the time with its wheels leaping in the air, even over the tiniest bumps. The inevitable results were driveshaft failure. While we were overwhelming favourites we suffered a unique and unpleasant retirement.

At the start of the race we were climbing into the mountains, but then suddenly the oil warning light came on and the oil pressure gauge dropped to zero. We stopped, opened the hood and found French drivers well. We have been thinking about Jean-François Piot. What do you think?"

The question put me in a bit of a predicament since Piot was probably my best friend among all the French drivers, but deep down I didn't think he was the right one for Porsche. I told Peter that while Piot was a good driver, I thought Gérard Larrousse would be a better fit for Porsche. I was correct, as Larrousse had an outstanding career with Porsche. We didn't drive together for over a year, but when we did finally pair up, we were very successful. Two of those successes

included victory at the 12 Hours of Sebring in 1971

tail. The Salzburg livery colours on my 4.9-litre 917LH were white with red stripes.

The second Porsche Salzburg entry was the sister #23 Salzburg 917K short-tail. Painted in red with white-striped livery, this 4.5-litre 917K was piloted by our teammates Richard Attwood and Hans Herrmann. They were the eventual winners in 1970, giving Porsche its first overall victory at Le Mans. The wonderful 917 had achieved exactly what it was designed for... winning Le Mans. Until next month, enjoy visiting my legends of motorsport memorabilia website **vicelford.com**.

loto

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Taycan: a sign of the very near future?

Dear Sir,

I saw the Porsche Taycan in action at this year's Goodwood Festival of Speed and have to say I was impressed by the conviction with which it seemed to drive. Quick, obviously, but it looked like it handled brilliantly, allaying some initial fears from a distance at least – that Porsche was simply making a rival Tesla. It even had a bit of noise to it!

What struck me as I wandered around Lord March's lawn is just how *big* Porsche is pushing the Taycan. Indeed, all the PR paraphernalia in

are brilliant sports cars which clearly get better and better. Will my GTS end up being an example from the latter years of 911s powered by an actual engine? **Danny Wilsher**

CEO Dr Oliver Blume has gone on record previously to say there will be an electric version of the 911 in years to come, and anyway, given the direction governments are pushing manufacturers and consumers, this is an inevitability beyond the control of Porsche. That said, it's no bad thing. The 911 has evolved inextricably in the last 56 years or so - the 992 is a totally different proposition to the original car of 1963, though of course there are similarities in design and overall function. In spite of this the 992 has been immensely well received by the public, and a number of 911 owners have, in fact, placed a deposit for a Taycan. People's attitudes seem to be changing, in our opinion, and so a 911 of the future - whether fully electric or not - is one to be embraced rather than feared.



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the run up to, during and since the festival has been about the Taycan or, of course, Formula E. I understand the company is going to make a song and dance about the direction it's headed in, but it worries me. Other companies like Mazda have said there's plenty of development life in the internal combustion engine yet, so I'm curious to know just how guickly Porsche intends to drop the traditional engine once its electric car production is in full swing.

I own a 1988 3.2 Carrera Cabriolet and a 2017 C2 GTS – I'd hope there are still plenty of rear-engine 911s in the offing in future as they

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• Ask the expert

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Scott Gardner Job title Workshop manager Place of work Porsche Centre Bournemouth, UK Time at Porsche 13 years

Dear Sir,

I have a 1981 911 SC which has been sitting in my garage unused for the last few years. Having decided to service the car, I started with the 'simple' job of changing the brake fluid and bleeding the brakes. The problem is that the brake pedal will not travel to the floor, even with a bleed valve open. It stops solid about halfway to the floor. Is it possible that I have the unusual problem of a seized master cylinder ? Steve Morgan

It's unusual to have a brake pedal locking solid halfway through its full travel during a bleed procedure. Perhaps the nipple you are bleeding is blocked or requires opening further? I would advise trying the other nipples and seeing if they bleed through or if the issue is just on one brake caliper. If the car has been stood for a few years I would advise a full inspection on the brake lines for corrosion, as well as the flexible rubber hoses for signs of perishing. If there are any concerns, I'd advise getting the car recovered to your local Porsche Centre.

At Magazines Cifica: Single lisues Single lisues

Is a 911 still an investment?

Dear Sir,

This came up in conversation with a few petrolhead friends at dinner tonight. The market has slowed considerably – talking specifically from a UK perspective here – so is a 911 of any vintage still an investment? We were speculating as to which models are likely to see a return, big or small, within the next 24 months. Given the magazine's market insight, I wonder what your thoughts are on this?

Aaron Tomkins

The short answer to your question, Aaron, is that it's very unlikely any models will see more than a 5 per cent increase in value over the next two years, if at all. The political climate (yawn) is the chief driver for such a volatile market at present, and equilibrium on this front doesn't look like it's coming any time soon. Consumers are holding on to their money as a result, and big-ticket purchases like a Porsche are largely off the agenda – as we know, you don't 'need' a Porsche, you buy one because you want one. It's a buyer's market right now, but don't look at these cars as investments – look at them as fantastic driving machines that are built to be used and have fun with. This should be your chief reason for buying right now. Do it, and you'll find there are bargains to be had.



Total 911 in NZ?

Dear Sir,

My wife and I are New Zealanders currently doing

We're pleased you've discovered our

a road trip in Queensland, Australia, though unfortunately our Porsche is keeping warm with its stable mates in our garage back home. While looking for car magazines to read over here I came across **Total 911**, what a great magazine. Can you tell me if it is available in Dunedin, New Zealand – if not I would like to subscribe to it.

I've had a number of classic and sport cars over the years, and I have to say that my 2007 Targa 4S is the best-handling car I have owned. We have some magnificent roads on the South Island, and the Porsche is just the best to exploit them. **Graeme Cochrane** magazine! **Total 911** is available for worldwide delivery, either as a single issue or, if you'd like the issue a little earlier, you can subscribe. This means you'll get the magazine delivered to your front door from any location on the planet. We also do duel paper and digital subscriptions, should you prefer a digital copy for rigorous travel, plus the guarantee of reading a new issue on the very day it is released. More information and subscription rates can be found at myfavouritemagazines.co.uk.





THE 911 THAT HAD TO SUCCEED

The final air-cooled Porsche carried the future of the company on its shoulders. **Total 911** looks at its conception, development and how it's viewed today

Written by Kieron Fennelly

n retrospect, it's easy to say Porsche's mistake was its decision to keep the G-series 911 in production for 15 years, but from the company's point of view, through the early 1980s the 911 was selling ever more strongly. Regular updates and revisions ensured it remained at the top of the performance stakes. The robustness which made it a car you could count on day after day meant that despite its archaisms, it was still the ultimate road and track sports car. However, within Porsche it was also a source of frustration to many of its engineers and designers keen to modernise it, dispensing, for example, with the torsion bar suspension and introducing assisted steering and a less idiosyncratic ventilation system. Journalists in other respects always well disposed towards the 911 observed it was becoming increasingly an enthusiast's car, lacking broader appeal and depriving Porsche of a wider market.

The 928 launched in 1977 was supposed to address

was no longer a sensation, and early 964 buyers were able to confirm what the magazine testers had found, that Porsche's fixed 2:1 rear/front torque split made the latest 911 an uninspiring understeerer. The reardrive C2 911 appeared a year later, but by then the damage had been done: in a generally morose market, and one which had halved in the US, clearly the 964 would not be the model to rescue an increasingly beleaguered Porsche.

A rolling of management heads saw new blood brought into the company. A former Weissach R&D engineer named Ulrich Bez was enticed from BMW Tech to become engineering boss, and he appointed his chief designer at BMW, Harm Lagaaij, another ex-Weissach man, to reinvigorate Porsche styling. These two were the impetus behind the next 911: the 993. Bez was particularly critical of the 964's crude ride and the C4's handling, and Lagaaij's remark when he arrived at Porsche's design studios in October 1989 that there was "nothing going on" has gone into the history books. Work on 911 Typ 993 would start within weeks of the 964 C2 reaching the showrooms. This time, a chastened Vorstand, which had pensioned off its managing, engineering and styling directors in short order, was prepared to offer Bez and Lagaaij more licence, and the pair took as much advantage as their still-constrained development budget permitted. Nevertheless, the new 911 represented a challenge: how could the new 993 retain its defining 'Neunelfer-ness' yet be endowed with a more modern appearance and wider appeal? Many of the more fundamental styling changes that Bez and \bigcirc



the GT segment of the market, but by the time the Vorstand had approved the next 911, Typ 964 in April 1984, sales of the 928 were already in decline. The 964 itself was a radical step in engineering terms – a completely new chassis and suspension which allowed fitment of ABS and assisted steering, a larger and more potent flat six, and four-wheel drive. A conservative board, however, would not permit the designers to change anything above the axle line, which meant the 964, despite its revised front and rear bumpers, looked remarkably similar to its predecessor. Moreover its four-wheel-drive, such an innovation when Audi introduced the Quattro in 1981,



16 | 25 years of 993

Lagaaij wanted to introduce were ruled out on cost grounds by the board, notably a revised roofline and an updated cabin; a typical detail casualty was the plan to make the windscreen wipers flush. Stylists Richard Soderberg and Tony Hatter nevertheless displayed considerable imagination - they smoothed and rounded the lines of the 964, creating the 993's defining hips and most admired aspect, and they fared headlamps into the front wings. More radical changes would have to wait for the 996.

Bez engaged senior engineer Peter Falk to define the essence of the 911, which many in the company felt was being lost. Falk's detailed Lastenheft essentially said that the 993 would have to achieve a new level of agility and responsiveness, which was the trademark of the original 911. Even in the 1990s cars could continue to have both characteristics -Falk cited Honda's NZX, but in his view the 964 C2 had lost some of the former. He did not even refer to the C4.

In the quest for these goals the front suspension of the 964 was kept, but the steering rack was quickened and changes were made to caster angle. The rear would be the scene of Bez's one major victory over the accountants. The main objection to the 964 was the uncomfortable and noisy ride created by the semi-trailing arm rear suspension, which was attached directly to the body. To have reused this would have completely undermined everything Bez sought to achieve with the 993. In the event the LSA - light, stable, agile - axle was fitted, the multi-link suspension derived from the Weissach axle of the 928 was further developed for the 959. This configuration offered not only the desired 0

Timeline of the



1995 AWD returns to the 911 with the arrival of the Carrera 4 and, for the first

time, an AWD Turbo.



1995

The GT2 moniker is born, this a lightweight, rear-drive and boosted version of the 911 Turbo.





The fourth generation of 911 is revealed in both Carrera Coupe and Cabriolet forms, boasting new looks, a sixspeed gearbox and an innovative 'Weissach' rear axle.







Four-speed Tiptronic gearbox unveiled.

"Falk's detailed Lastenheft essentially said that the 993 would have to achieve a new level of agility and responsiveness"

ABOVE A prototype in cold weather testing. Note the 993 headlights underneath 964 front fenders





Power upgrades for 3.6-litre Carrera models from 272hp to 285hp, thanks largely to a new variable intake technology called VarioRam.

1998

The last aircooled Porsche is brought to market. The 993 Turbo S is handbuilt by Porsche Exclusive.



LB: ZZ 285





The Targa model is reinvented, ditching its removable hood in favour of a glass panel which ensured the same silhouette as its elegant Coupe sister.



Revival of the Turbo-look Carrera with the C4S, followed a year later by the C2S.

18 | 25 years of 993

BELOW Twin exit tailpipes were a first for a road-based 911 from the factory. Carrera 4S (right) adopted 60mm wider body from Turbo

BELOW Turbo engine now had twin intercoolers for the first time, mounted on top of the flat six



Camara

N227 BMD





P23

ABOVE The cabin received minor updates: a new wheel with bigger airbag plus door cards being changes of note



BELOW New multi-link rear suspension sought to finally allay the 911's wayward handling over bumpy surfaces

refinement, a quieter cabin and better ride, but with its natural toe-in characteristic, reduced the tendency to lift off oversteer.

There had never been any complaints about the performance of the 964, but the M64/01 3.6 was altogether too raucous for many of the new clientele Bez had in mind, and for the first time an engine other than an air-cooled flat six was considered. Various V8 possibilities existed – Herbert Ampferer's 3.6 for the 989 or the 2.8 V8 'Indy' engine detuned for production; preproduction 993s were tried with a compact V8 3.6 Audi unit – destined for the A8 – which provided very satisfactory performance and refinement. But if the engineers had proven there was room for a V8, once again development costs would rule out everything but the faithful flat six.

But even this late in its life and with environmental norms closing in, Porsche's legendary engine still had tricks up its sleeve: one development target was to enhance refinement so that the torsional vibration damper of the 964 could be dispensed with. A significant reworking of both top and bottom ends saw the fitting of a lighter, stiffer seven-bearing crankshaft rotated by lighter, narrower connecting rods and pistons. These contributed to a significant reduction of rotating mass, and lighter valves completed the programme.

Of internal parts, only the 964's camshafts were carried over. Assiduous modifications to oilways improved lubrication, and new hydraulically adjusted tappets removed a costly service item. A Bosch 2.10 Motronic presided over ignition requirements, and with slightly bigger valves and ports the 993 engine produced 272bhp, 22bhp up on its predecessor. Further work on inlet and outlet would contribute a further 13bhp for the 1996 model year, when the VarioRam induction was introduced to spread the torque curve and so enhance drivability. Revving more sweetly to its 6,800rpm limit, externally the 993 was markedly quieter than the 964, thanks in part to the revised exhaust system developed for the 3.8 engine of the 1993 RSR, which consisted of separate pipes for each bank of cylinders meeting in a transverse silencer behind the rear number plate. The twin-exhaust outlets, one each side, became a 911 styling characteristic with the 993.

Porsche fitted a six-speed version of the G50 gearbox, its ratios deftly spaced – on all but the 'long'-ratio 993 built in 1997 and 1998 to pass noise regulations – the intermediates having a rev drop of only 700rpm between them. The four-speed Tiptronic was improved over its previous incarnation thanks to greater electronic sensitivity to road and load conditions. Bez's engineers also addressed the shortcomings of the Carrera 4: the expensive transfer box was abolished in favour of a viscous coupling which sensed when the rear tyres were slipping to send anything up to 39 per cent of the torque to the front axle. In conditions of normal adhesion, little more than 5 per cent of torque was transmitted to the front, and when combined with the new rear suspension, the 993 C4's handling garnered as much praise as the C2's. Besides saving roughly \pounds 400 per car compared with the transfer box, with fewer cogs this new transmission added only 50kg to the overall weight.

Bez fought hard to give Porsche the 'better 911' he felt it needed, at a time when few others were able or willing to take a stand on a new product direction. By the time of the 993's launch, Bez was working for Daewoo in Korea, but enthusiastic press reaction demonstrated he had succeeded.



RENNSPORT

It's the last air-cooled 911 to get Porsche's fabled 'RS' initials stamped to its decklid. What's the 993 like to drive in hardcore Clubsport spec?

Written by Kyle Fortune Photography by Dan Pullen







You must push it," says this 993 Carrera RS Clubsport's owner, Omar Lupin. That's fine for him to say, but the paradox of driving cars like this is exactly that – driving them. Just 227 993 Carrera RS Clubsports were ever built.
I'm sat in one now, a genuine 993 Carrera RS with the under-bonnet sticker containing the essential 003 code. That signifies Group N GT1 Carrera RS, simply 'Clubsport' or, in some markets, 'RSR'. My surroundings confirm that: the interior is devoid of anything other than the bare necessities, which means three pedals, a gearstick and a steering wheel. It feels pure race car, because that's what it is.

A little bit more deciphering of those codes

There's plenty of it: the rear-view mirror, sat beside a sole sun visor, is filled with the stunning hue, the criss-crossing cage that fills the rear and braces down the door apertures as well as the entire rear area being covered in the bright finish. There's no carpet anywhere, save for a couple of mats in the front footwells. The lightweight, fixed seatbacks weren't a stranger to the spray gun either, the lack of anything even as 'luxurious' as headlining means the colour is on the roof above, too. You'd have to have been intent on really using the Clubsport as intended to pay the additional £5,250 it added to the regular RS's £62,250 sticker price and, really, like the colour you picked, because there's no escaping it when you get inside. For that additional outlay you lost equipment, the Clubsport binning the RS's luxuries, such as they were, for an even more purposeful specification. It existed as a means to homologate the Carrera for the BPR GT3 and GT4 categories and is based on the Carrera Cup car, as well as giving more trackfocused customers an even more focused machine. The Clubsport added a fully welded-in Matter roll cage which, combined with the RS's seam-welded shell, increases the body's stiffness by 40 per cent over the standard Carrera. That adjustable suspension strut brace was standard, the top mounts for the

suspension being ball joints, the front suspension sitting 30mm lower at the front and 40mm at the rear. The RS also gained 23mm front and 19mm rear anti-roll bars.

Every element of the suspension is adjustable for track set-up, the lower ride height necessitating Porsche to roll the inner wheel arches to allow clearance for the wheels when the suspension is in full compression, as it might be through Parabolica, Eau Rouge or the Karussell. There are stiffer track rod ends in the steering linkage, power steering being standard, improving turn-in response and feel. The wheels are 18-inch, three-piece split-rims with their evocative 'Speedline for Porsche' script etched on the outer rim opposite the valve caps. They are eight inches wide on the front axle, ten at the rear, wearing 225/40/ZR18 front and 265/35/ZR18 rear tyres. Behind the wheels, red 993 Turbo-derived, four-piston aluminium brake calipers grasp 322mm cross-drilled and ventilated discs all round. There's thinner glass, no electrically cleared rear window, even the intermittent function on the wipers having been binned, the washer bottle too being reduced in size from 6.5 litres to 1.2 litres. Aluminium body panels are added, the lightweight bonnet being held up by a simple lightweight spike, rather than the gas struts of conventional 993s. With no roof

reveals that when ordered it came with a 197 88Ah battery, 459 strut brace, 471 Carrera RS Sports spoilers, 564 no airbag, 567 graduated tint windscreen, 573 air conditioning, 657 power steering and 990 cloth seats. All came with most of these, the air conditioning optionally (and sensibly) added, as has a powered passenger window, the switch for it located in front of the gear lever in the middle, usually a blanked-off switch position in these. As a C11 model it was originally supplied to Austria, is left-hand-drive and finished in L39E Riviera blue, that bold colour covering every bit of the RS's beautifully exposed bodywork.



trim at all the interior lighting is taken care of by a single light in the footwell, this borrowed from the 964 Speedster. In standard trim the RS weighs in at 1,279kg, the Clubsport, even with the addition of that cage, is said to reduce that by around 50kg, which given the quoted 1,100kg for the Cup car seems entirely plausible.

Outwardly the Clubsport gained a more aggressive and effective aerodynamic package. The bi-plane rear spoiler replaces the less overt whaletailstyle wing on the standard RS. It features intakes integrated into the upward struts, these filling the rear-view mirrors to give a unique vista, the top element of the wing adjustable between 0-12 degrees, "The 3.8 absolutely devours revs, the ferocity of its response translating into exploitable performance"

M425 VD0







or replaceable with a significantly higher and wider banana-style RSR wing if you were really serious about track work.

The front aero with the Clubsport is more overt too, the splitter running the entire front of the car; it's deeper, rolling up fore of the front wheels to help balance that greater rear wing's downforce. Along the flanks the Clubsport wears the same black lower valance as the regular Carrera RS, its contrasting colour maintaining the 993's neat proportions, yet subtly lowering it visually. If you want a more aggressive-looking 993 you'll need a 993 GT, with its pugnacious riveted arches, but to many, myself 0



Model 993 Carrera RS Clubsport Year 1995

Engine Capacity 3,746cc **Compression** 11.5:1 ratio Maximum power 300bhp at 6,000rpm Maximum torque 355Nm @ 5,400rpm Transmission Six-speed manual

Suspension Front Independent; MacPherson strut; coil springs; anti-roll bar Rear Independent; Multi-link; coil

springs; anti-roll bar

Wheels & tyres Front 8x18-inch; 225/40/ZR18 Rear 10x18-inch; 265/35/ZR18

Dimensions

Length 4,245mm Width 1,735mm Weight 1,219kg

Performance 0-62mph 5.0 seconds Top speed 172mph

11





included, the Carrera RS in Clubsport guise is among the most visually appealing of all 993s, it full of purposeful intent without being too overt.

It's compact, too, it always surprising how petite a 993 feels. Sitting in the fixed-back bucket, punctured by the red Schroth six-point racing harnesses anchored to the interior and cage, the lack of any trim changes everything. When I hear myself talking to Lupin and photographer Pullen there's a rasping metallic note to my voice, that thin roof panel and the lack of any soft surfaces, save the seat covers and RS door cards, creating a resonating sound chamber which would more usually be absent thanks to the deadening effect of a helmet. There's a Japanese Porsche immobiliser to negotiate before starting the engine, it the only button needing pressed in the otherwise naked interior.

The engine, like the standard Carrera RS, is the 3.8-litre, M64/20 unit, which grew in capacity from



3,600cc to 3,746cc. The increase is achieved by a 2mm increase in the bore, the stroke remaining at 76.4mm. The lighter, forged pistons with lower height and relocated wrist pins were covered in a special coating called Grafal to help reduce noise, the intake system strengthened and enlarged, with intake and exhaust valves growing to 51.5mm and 43mm respectively. Unsurprisingly those bigger valves were lifted by slightly larger cams. The RS famously introduced Porsche's variable-length intake system, VarioRam, to the flat six, the engine controlled by Bosch's Motronic electronics. The output is rated at 300hp at 6,000rpm and 355Nm at 5,400rpm, the maximum engine speed



being 6,840rpm. That's modest by today's standards, but more than enough in reality.

All this drives through a G50/32 six-speed manual transmission with a vented clutch chamber, the ratios shorter for acceleration over standard Carreras, the RS coming with a Sachs limited-slip differential with 40 per cent locking on drive and 65 per cent on deceleration. The 003 Clubsport specification further benefits from the addition of a single, rather than dual-mass flywheel.

Starting the engine, after some immobiliser frustrations in this case, is something to be truly savoured. Without any sound deadening the 3.8-litre flat six fills the naked interior with a purposeful sound, the combination of its off-beat tones and the rattling of the clutch release bearing enveloping the cabin with racing intent. It's loud, but not overbearing. Something to be enjoyed rather than endured, the immediacy with which the engine

downshifts. The brakes provide a perfect platform to do so. Firm and responsive, they'll remove speed as quickly as the engine produces it; a roll of your foot over to blip and the revs flare with alacrity.

The suspension, racer in its focus yet remarkably composed on the road, reveals it's working from a much stiffer platform. It's the control on offer that is remarkable, that translating to effortless speed, even on what passes for a road in the UK. Again you feel that deftness of touch and the improvement that it brings to the driving experience. There's no slack, just pure responses, the steering alive with feel, its power assistance meaning it's light, and quick. Turn the wheel and the nose reacts instantly. Yes, there's a touch of push on understeer if you're a bit optimistic at turn-in, but otherwise it's so precise and faithful that it feels unlike any other 993. There's still the weight out the rear to exploit, the mighty mid- and corner-exit traction on offer, the engine's 300bhp feeling particularly healthy. It's flexible, too, the combination of the bigger capacity and that trick VarioRam meaning you can, if you wish, use taller gears and low revs. To do so is madness, particularly with an engine that's so damn enthusiastic at its upper reaches. It's linear in its power, yet those final few thousand revs are so giving that there's never a moment where you're not aiming to exploit them, Lupin's assertion correct, even if it's not actually necessary to make good progress. What's so appealing is that it's all so exploitable. Even this stripped, most focused, naturally aspirated 993 can be enjoyed on the road, its performance such that it'll enthral without taking you into the realms of lunatic speeds, the rich and intoxicating engagement, the other-worldly feel and response what defines it, not a set of numbers.

I've often argued that the mid- to late-1990s was the defining era for enthusiasts, a period where performance, scale, grip and engagement worked beautifully in union - with the benefit of modern tyres and some safety equipment – all while denuded of the needless distractions of buttons, screens and configurability of later and current performance cars. The 993 is the perfect example of that, and dialling it up to the maximum is this 993 Carrera RS Clubsport. You don't need anything else, you really don't, which makes it not only peak 993, but arguably peak Porsche. It's really is that good – and by good I mean absolutely sensational.

revs - thanks to that flywheel - is initially surprising. It's not difficult: the clutch is light and easy, there no low-rev recalcitrance or judder from the transmission as it slips into first and the clutch releases. Sounds and that immediacy aside, it's no more tricky than a regular 993 Carrera to pull away in.

Driving down some sighted, fast country roads in Cambridgeshire the Clubsport's 3.8 absolutely devours revs, the ferocity of its response translating into exploitable performance at speeds that aren't antisocial. Every gearshift is a joy, the six-speed unit crisp and quick, the clutch light, the throttle so perfectly poised and eager to please on heel-and-toe

Total 911 verdict

The RS takes the 993 to another level, and the Clubsport only serves to intensify that even higher again. There's no clearer a demonstration that 300hp is more than enough, and that less is definitely more – so much so.

LIKES

• Immediacy, focus, feel, sound... pretty much everything.

DISLIKES

• Rarity, and therefore prices.

26 | The big interview: Tony Hatter



Although he's spent most of his professional life at Porsche, Hatter will always be associated with the 993. The man himself speaks to **Total 911**

Written by Kieron Fennelly

I was born in Northern England, but whereas most of my friends were football fans, I was crazy about cars. My parents thought I should get into some sort of engineering apprenticeship, but that proved a bit of a dead end and I went to Lanchester Polytechnic [now Coventry University] where I did a degree which involved transport design. But

doors of the 964 RS. To be honest there wasn't much happening, though we always had work on the Linde forklift to fall back on." Linde was one of several major third-party contracts at Weissach.

Lapine retired after a heart attack in 1988, and his replacement, Harm Lagaaij, began in late 1989. Tony's first recollections of the 993 are from the end of that year. "We started in early 1990. I

Hatter is reluctant to acknowledge that budget constraints had a significant impact on the exterior design of the 993. "We did redesign the windscreen wipers, even if they didn't fall below the level of the bonnet." And it must be admitted that mounting the wipers centrally as a pair made their operation far more effective. "Don't forget that the body in white is essentially that 1963 car. There's a limit to what you can do so, for example, you have to maintain things like the rain gutters. What I really wanted to do with those was 'flow' them into the rear of the car that was difficult. "I don't think the design was even complete before we realised, at my level, that this was going to be the very last air-cooled 911, and then you could see the problems of continuing to make a car conceived 30 years earlier. The 993's shut lines were far larger than you get with the robotised manufacturing equipment that Porsche was introducing on other assembly lines."

vehicle design itself wasn't properly understood at that time, and it wasn't till I got to the Royal College of Art in London, where I spent two years, that I really discovered design and styling."

Full of youthful enthusiasm, Tony Hatter was keen to join Porsche, but in 1981 the company wasn't hiring so he found a styling position at Opel, moving to Porsche in 1986, a path trodden by a series of well-known Porsche designers beginning with the then-styling chief, Tony Lapine. "As a newcomer I started off on small jobs, such as the wider rear bumper for the 964 Turbo, and I remember I did the ribbon latch pulls for the was very pleased to be working on the new air-cooled 911."

He describes the particular challenge of creating a new 911: "The Porsche board always had very firm ideas about its shape. It was claimed the 964 was 80 per cent new, but visually it looked barely 20 per cent new. We needed to do something less conservative, but without being too radical. The front of the 959, the plans for the 989 four-door and the facelifts for the 928 showed the way in terms of the frontal aspect – this new, smoothed front became part of Porsche's design vocabulary."



28 | The big interview: Tony Hatt

"You could see the problems of continuing to make a car conceived 30 years earlier"

BELOW Clay model of the 993 Targa





Designers tend to be an international bunch: Tony Lapine was Latvian; his successor Harm Lagaaij was Dutch. Lagaaij had already worked at Porsche in the early 1970s, especially on the 924. His studio chief was American Richard Soderberg and, says Yorkshireman Hatter, Soderberg was his main guide, "although the final decisions were always taken by Harm". Tony readily acknowledges that in his first major project he relied heavily on the experienced Soderberg.

"It wasn't at all hierarchical," recalls Hatter. "Richard helped me through the whole process, at least six months. I was concerned to balance the front and rear of the car. One of the details I didn't like about the 964 was the bulbousness of the front bumper and the fact that the rear bumper, though slimmer, wasn't quite level with it. Richard had us look at the car in profile to get this right on the 993, and he also restrained us from smoothing off surfaces too much at the ends of the car.

"The chief modeller was Peter Reisinger, but I worked above all with Hans Ploch, Hans Springmann and Ernst Bolt. You can see these three in the famous studio picture with Butzi and Heinrich Klie. I thought it was really quite something for me as a relative youngster to be working with three guys who'd shaped the original 901 – amazing, but also rather odd. As if in some respects time had stood still in Porsche."

Hatter remembers few significant disagreements in the styling process of the 993: "It was a great project. There were none of the differences which seemed to crop up with later designs." But surely the smoothed headlights were controversial? "We had already introduced the smooth-headlight design with the 959 and the 928; Butzi said the 911 had to have its Kanonenrohr – its gun-barrel front wings. We never lost that feature, and even today the 911s' headlamps are always mounted higher than the bonnet. You really appreciate the Kanonenrohr from the side view."

Hatter concurs that the rear three-quarters view is the 993's best aspect: "I deliberately made them the widest part of the car and then tapered the rear to exaggerate the effect." For the most part the interior of the 993 was a carry-over from the 964, though Hatter says the rather neat positioning of the door speakers was his handiwork. "I'm not certain why I was asked to do that. I can't have been very busy that day," he smiles.

"The Cabriolet did get an entirely new roof," he adds. "The G-series and the 964 had transverse seams, which frankly weren't so attractive. We managed to redesign the hood so that the seams coincided with the longitudinal axis of the 911, so it looked much better."

The other open 993 was the Targa, introduced in 1995 with the 'VarioRam' facelift. Hatter explains that the designer behind the Targa was his colleague Steve Murkett, who based much of the roof profile on his Panamericana concept of 1990. Hatter was called to contribute to the 993 Turbo, another 1995 launch.

"This was a great opportunity to revisit the 993 design, a second chance to review details. The Turbo was quite something – it had over 400 horsepower, almost unimaginable in the









production car 25 years ago – and that was the last and [outside the GT2] the most powerful aircooled Porsche we would ever build. The front was new, with wider wings and of course wider hips for those huge tyres, and the spoiler was completely new."

The 1995 narrow-body 993 RS was again Steve Murkett's work, but the 993's final extravagant flourish, the GT2, was Hatter's: "I remember I designed the wheel arch extensions to be riveted on, then Motorsport decided it didn't need rivets so they could have saved me a job, but we decided to keep the riveted look anyway."

Exposure to the racing department brought about Tony's involvement with the graphics of the

"I was summoned out to the track and climbed into a waiting prototype 993. Someone thrust a pile of measuring gear into my lap and we were off. Weissach isn't lit and I couldn't see where we were going at all, but this test driver who knew the course like the back of his hand just went flat out in the dark. It was thrilling and frightening at the same time and I used to love it. I tend to avoid that sort of excitement now, though."

Tony is keen not to leave that rarest of 993s, the Speedster, out of the discussion: "There are a few of them – the best known are Butzi's and Seinfeld's, but there are a couple more." And he declares his interest: "I did the full-size rendering for the Speedster." It goes almost without saying that Hatter is also a proud 993 owner: "I have a black Cabriolet which I got from the US. It has Turbo twist wheels – I designed those, incidentally – and a K&N induction; I've lowered it and also managed to find a rear seat delete kit for a princely €250, and re-upholstered the rear cabin – I'm especially pleased with that!"

GT1. He refutes vigorously any inference that the mid-engined GT1 is not a 993: "The GT1 is the culmination of everything 911. It's a steel body and the front crash box is the 993's – that's how Porsche was able to get type approval for the road – pure Norbert Singer. The cabin even has the five-dial dashboard of that 1963 car. It's incredible to have a competition car with such provenance." Designers occasionally escape their drawing boards to participate in the dynamic side of development. Hatter recalls a dark evening in the winter of 1992 when he accompanied one of Porsche's test drivers around the Weissach circuit.

Hatter could justifiably be especially pleased with the entire 993, still regarded by many as the prettiest of the 911s and one which was crucial in rescuing Porsche when it appeared as if the company might go under.

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RKI9 FSZ

LEGACY of the CARRERA S



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Porsche has always championed an 'S' in its line-up, yet it is since the turn of the millennium where the model has developed most. **Total 911** looks at the development and heritage of the water-cooled Carrera 'S'



ook back almost as far as the very dawn of the 911 and you'll find an 'S' model sitting above it as a desirable upgrade. Arriving in 1967 as a 911S, Porsche has kept the 'Super' 911 within its range pretty much ever since, though these days the S nomenclature is partnered alongside another famous noun from the Porsche lexicon in 'Carrera'. The subsequent 'Carrera S' has witnessed an acceleration in technology like no other automotive model within the same time frame. However, while technology has flourished, so has the 911's model line-up, which has led some to ask whether or not Porsche's Carrera S is deemed as relevant as it once was. So does the Carrera S badge still make sense?

The S in 1967 was intended to cement the 911's superiority, bringing more power – the 2.0-litre flat six boasted 160hp, an increase of 30hp – and innovation; it was the first model to get a rear anti-roll bar, adjustable Koni dampers and ventilated disc brakes, not to mention those lovely Fuchs alloys. Engine capacity and power would both increase over the years, culminating in the 193hp 2.4S of 1973, but by the G-series cars the S had been relegated, sitting

beneath the Carrera that, along with the later Turbo, would finally topple it from the pinnacle of the 911 range. Down on power and performance, it was a shadow of its former self, not to mention something of a disappointment to the Porsche faithful expecting better. Perhaps it was for the best that it would disappear for good in 1977, and it would be almost 20 years until a normally aspirated S became available – initially in four-wheel-drive 993 C4S form. Then in 1997 came the rear-wheel-drive 993 Carrera S, finally returning the badge to the prominence it deserved.

Immediately popular thanks to the wide-body styling, it ditched the four-wheel hardware and big brakes made for a purer driving experience, while the modest power increase provided ample straight-line shove. Added to the mix was relative rarity: just 3,714 were sold compared to almost twice that number for the C4S and more than 38,000 for the regular Carrera. But despite its obvious appeal Porsche would drop the model again for the water-cooled 996, giving buyers an S only in conjunction with four-wheel drive. A mistake? Not really, as the Turbo-look body and uprated suspension and brakes meant around 23,000 examples found buyers, but it could still be considered something of a missed opportunity for such a game-changing 911. It certainly makes Porsche's decision to offer a much broader range for the 997 era a welcome one. While the Carrera was a fine car in its own right, turning up the wick for the S turned it into a very alluring proposition. Available in both two- and four-wheel-drive forms, it's the former we are interested in here, and it's a model that set the template for the C2S variants that followed. In first-generation form the 997 C2S vastly out-sold the entry-level car, and makes just as much sense for buyers some 15 years after its debut.

997

After the divisive introduction of the water-cooled 996, Porsche needed a car that moved the game on, one that would appeal once again to the 911 faithful. The 997 did just that. Fine handling and terrific build quality were just some of its talents, but the Carrera S was something of a sweet spot for those who demanded more from their 911 experience. Beneath the engine cover it replaced the standard 3.6-litre flat six with a larger 3.8-litre unit, power and torque upped to 355hp and 400Nm respectively; both \bigcirc




compared to its generational rivals



Engine

Capacity 3,800cc **Compression** 11.8:1 ratio

Maximum power 355hp @ 6,600rpm Maximum torque 400Nm @ 4,600rpm Transmission Six-speed manual or five-speed Tiptronic

> Suspension **Front** Independent; MacPherson strut; coil spring Rear Independent with LSA multi-link

> > AUTO

SPORT

Wheels & tyres Front 8x19-inch; 235/35/R19 Rear 11x19-inch; 295/30/R19

Dimensions Length 4,427mm Width 1,808mm Weight 1,420kg

Performance 0-62mph 4.8 seconds Top speed 182mph

2₿









"A 997 is one of the best-value 911s you can currently buy"

38 | Legacy of the Carrera S

Model 991.1 Carrera S

Year **2011**

Engine Capacity 3,800cc Compression 12.5:1 ratio Maximum power 400hp @ 7,400rpm Maximum torque 440Nm @ 5,600rpm Transmission Seven-speed manual or seven-speed PDK

Suspension

Front MacPherson strut; coil springs **Rear** Independent with LSA multi-link

Wheels & tyres Front 8.5x20-inch; 245/35/ZR20 Rear 11x20-inch; 295/30/ZR20

Dimensions Length 4,491mm Width 1,808mm Weight 1,395kg

Performance 0-62mph 4.5 seconds **Top speed** 188mph







"There's a beauty to its slim, narrow-bodied appearance, particularly among the ubiquity of widebody-only 911s today"

were useful improvements over the Carrera's 325hp and 370Nm. On paper performance improvements appeared modest, with 0.2 seconds cut from the 0-62mph time - now 4.8 versus 5.0 seconds - and top speed raised from 177mph to 182mph, but it was how it drove that mattered. It felt even quicker than those numbers suggested, and there was a notable improvement in response and in-gear flexibility with the bigger engine feeling gutsier throughout the rev range. And it wasn't just about numbers: the larger engine benefitted from improved cooling and a lightweight, plastic air intake with variable geometry within the manifold for a better sound.

Speaking of noise, the S could be identified by the pair of twin-pipe exhaust outlets in place of the Carrera's single item. And should power and performance have seemed lacking there was always the optional Powerkit. Not available on the standard Carrera – so another reason for choosing the S – it brought 38lhp, 0-62mph in 4.6 seconds, and 186mph. Transmission-wise there was the usual choice of a wonderfully slick-shifting six-speed manual, the S getting a revised clutch, too, or the five-speed Tiptronic. As for the rest of the S specification, well that was just as enticing compared to its cheaper sibling. PASM suspension with a 10mm lower

ride height was standard, as were 'Big Red' brakes and wheels an inch larger at 19 inches. Additional equipment included standard bi-xenon headlights, while the cabin gained a three-spoke sports steering wheel and some aluminium-effect trim garnishes, plus a full leather option. The Carrera S was subtly different to look at compared to a Carrera, its spec a fine indication of just how good Porsche could get at making lots of minor tweaks to make a big difference. It's worth noting that you could have the improved model in Cabriolet form but not as a Targa, as that was four-wheel drive only.

Ultimately the changes wrought over the standard Carrera were certainly enough to warrant the additional expenditure, improving an already fine car, but what about choosing one today? Two things worth bearing in mind are that the Genl models can still suffer from IMS bearing issues, while the 3.8 motor is susceptible to scored cylinder bores – some specialists therefore won't sell the S as a matter of course. Evidence these have been addressed is good news, but with prices for a manual Coupe starting at less than £30,000 and a decent supply of examples to choose from, it's impossible to view the C2S as anything but a very desirable iteration of the Genl 997, and possibly one of the best-value 911s you can \bigcirc







TOP 992 C2S boasts a 65hp increase in performance over the base 992 Carrera, though its 450hp total power and 3.5-sec 0-62mph time could be overkill in a 911 outside of the GT range



currently buy. The 997 marked a brilliant return to form for the enhanced, rear-drive Carrera, so it's no surprise that Porsche would want to repeat the trick with the next generation of Neunelfer.

991

Following its debut at the 2011 Frankfurt Motor Show, it was immediately clear that things had changed for the 911 in a big way. Where the 997 could still be considered relatively compact, the new 991 model had grown in both length and width, not to mention by 100mm in the wheelbase, and this bigger, more luxurious 911 wasn't met with universal acclaim. Had it gone soft and become nothing more than an opulent cruiser? Of course not, but there is one other elephant in the room that needs addressing. The GTS was a fitting last hurrah for the 997, a special model that featured a power-kitted engine and a lavish specification, but come 2014 Porsche made it a regular part of the 991 range. Costing an additional £7,000 over the substantial £81,242 asked for a Carrera S, itself around £10k more than a base Carrera, it was no surprise that some asked whether the S had become superfluous. It's not an unreasonable question: a 991 Carrera GTS represented better value than a Carrera S, and more theatre to its drive, too. In the used market today values have reflected the experiential difference at the wheel of a GTS, where a five-figure sum can separate an S from it. In used terms that difference in value of more than 10 per cent certainly doesn't render the C2S superfluous, and when you consider the specification on offer, it becomes clear that the Carrera S is hardly

lacking in desirability. The normally aspirated 3.8-litre engine – that also features a two-stage resonance intake system – is a peach, one that boasts an additional 50hp and 50Nm of torque compared to the Carrera, while still managing to be more efficient compared to the 997. Headline figures are 400hp and 440Nm, and the result is the sort of sledgehammer performance that should silence any doubters. In seven-speed manual form 62mph is reached in 4.5 seconds, with a top speed of 188mph. Both are useful increases, but the improvements didn't end there.

Once again PASM was standard, but spending that extra cash on the S also brought Porsche Torque Vectoring and Monobloc front brake calipers with six pistons for the first time, the Carrera making do with just four. Buyers of the entry-level model were also denied access to some tasty options, including the Porsche Dynamic Chassis Control anti-roll system. Externally it could still be identified by the twin exhaust outlets and bigger 20-inch wheels, while inside the changes were minimal. Not that the cabin really needed further enhancement, the impressive build and material quality backed by advanced digital instrumentation that included a TFT screen within the dials for displaying a trip computer, audio and navigation information. In terms of the used market now, the Genl 991 C2S doesn't suffer one iota from having the GTS sitting above it, and remains a hugely impressive package in its own right - devastatingly quick and with a real depth to its handling repertoire, it's a fitting continuation of the Carrera S bloodline. There's a beauty to its slim, narrow-bodied 🧔





Model 992 Carrera S Year 2019

Engine Capacity 2,981cc **Compression** 10.5:1 ratio

Maximum power 450hp @ 6,500rpm Maximum torque 530Nm @ 2,000rpm **Transmission** Eight-speed PDK

> Suspension Front MacPherson strut; coil springs **Rear** Independent with multi-link

Wheels & tyres Front 8.5x20-inch; 245/35/ZR20 Rear 11.5x21-inch; 305/30/ZR21

Dimensions Length 4,548mm Width 1,852mm Weight 1,515kg

Performance 0-62mph 3.7 seconds Top speed 191mph



"While it's the most technologically advanced Carrera S ever, it isn't the star of our threeway Carrera S test."







Thanks The 991.1 C2S was supplied by RPM Technik. For more information visit rpmtechnik.co.uk. Thanks to Sonya Matharu and Max Newman for their help with the feature.

Gen2 cars

Porsche's ethos is constant development and improvement, and two of the three cars featured would morph seamlessly into a second generation. For the 997.2 iteration the S was fitted with the thoroughly updated DFI engine, still in 3.8-litre capacity but now more efficient and without any IMS-related worries. And more powerful, too, of course – 385hp and 420Nm being the key numbers. But the biggest news was the adoption of the slick PDK gearbox, a seven-speed unit that swapped ratios up to 60 per cent faster than the previous Tiptronic. Purists still preferred the manual, but this was now a fine alternative. Elsewhere, the exterior and cabin were treated to a appearance, too, particularly among the ubiquity of widebody-only 911s today – a real case of elegance through simplicity. The 991 has aged well, both inside and out, and though the popular PDK transmission is a little primtive by today's standards, the 991.1 C2S is a delight to drive. It's a worthy component of the 911 line-up, bridging the gap beautifully between the GTS and base Carrera.

RY05 XUF

992

It took nine months of 992 Carrera S production before Porsche felt it was ready to unleash a base Carrera model of its 8th generation 911. It's perhaps a sign that it's keen to protect sales of its C2S model against the GTS which, as we've mentioned, does step slightly on its toes in terms of showroom sales. The 992 Carrera S is the sort of advance you'd expect from Porsche, with notable improvements in power, performance, opulence and tech. There are some less desirable traits, though, including the fact that its wide body, which is now compulsory, is bigger than ever, not to mention heavier - tipping the scales at 1,515kg, it's put on close to 100kg over the Genl 991. But that's only part of the story, because the twin-turbocharged 3.0-litre engine - the 9A2 evo unit - gives us the most powerful S yet, one that manages 450hp and 530Nm of torque. Driving through the standard eight-speed PDK transmission, that

translates into stunning performance, the 0-62mph sprint reeled off in 3.7 seconds, 100mph passed in 8.1 seconds and a 191mph maximum. Opt for the Sport Chrono package and acceleration improves to 3.5 seconds. That's mighty quick by any measure, especially for a model that represents just one step up from the base variant and places this new S in 991.1 GT3 territory in terms of price.

Mind you, the price has risen accordingly and now kicks off at £93,110, with a further £10k or so needed if you want your Carrera S in drop-top form. You do get plenty of tech for the money, though, with the potent performance accompanied by PASM, PTV and big brakes. And for the first time ever on a 911 there are staggered wheel sizes, with 20-inch items up front and 21-inchers at the back. With the base Carrera having only just arrived and the 992 GTS still waiting to be released, history is yet to judge the 992 C2S, but while it's the most technologically advanced Carrera S ever, it isn't the star of our three-way Carrera S test. Instead it is the 997.1, looking proportionally tiny next to its successors, which takes the crown as the best-value modern 911, while the 991.1 offers the most visceral modern 911 driving experience. All three, however, do prove the Carrera S always has and perhaps always will form an integral part of the 911 philosophy, even if that S philosophy has changed rather spectacularly since 1967.

minor nip and tuck.

There was equally major news for the 991.2 C2S, the 3.8 motor making way for a twinturbocharged 3.0-litre flat six. A move to forced induction wasn't met with unanimous approval, but it's hard to argue with the improvements it delivered in power and performance. Very much a case of less is more, there was now 420hp and 500Nm to play with, and you could make the most of it with optional rear-wheel steering. Both the 997 and 991 were undoubtedly improved over the Gen1 models they replaced, so the second generation of 992 promises to be quite some car.



242 years and counting of combined Porsche technical experience.

Talk to our experienced team today for all of your Porsche servicing & maintenance enquiries.



5 ROAD TRIPS YOU NEED TO CONQUER IN A PORSCHE 911

Written by **Kyle Fortune**, **Lee Sibley and Sunny Hoyle**



Start your engines: Total 911 presents five ultimate road trips from around the globe made for Porsche's iconic sports car



ACROSS AMERICA-

The 'land of opportunity' was created by people crossing its huge landscape, and the draw of a coastto-coast drive remains a must-do on many a road tripper's list. For good reason, too: the landscape is as varied as it is vast, and America was built for the automobile, cars being utterly entrenched in US culture – thus it's relatively easy, despite the big distances involved. As a minimum you'll be looking at adding around 2,800 miles to your 911's odometer, but that would be doing the drive a disservice, it needing more miles, time and commitment to do properly.

We're recommending you take your time. Best to put aside ten days to a week, or longer if you really want to explore, but which route? There are countless possibilities, first of which being which coast to start your adventure from. We'd suggest an East Coast start, New York being the obvious choice to acclimatise to any time differences you might have before setting off on your adventure, but Boston is a possibility if you want to head north first and explore Maine and Vermont before hugging the Canadian border down towards Cleveland and the 'Motor City', Detroit. Head south from New York and you could hit Washington before heading to Pittsburgh, Columbus and Indianapolis, where if you time it right you could watch the Indy 500. North would take you to Chicago, south to Nashville, the options many and varied, and that's only about a quarter of the distance into your drive. Planning is essential, unless

you've all the time in the world to wander on a whim. We'd suggest a run taking in New York, Detroit and Chicago, leaving you plenty of choices in the middle where you could go north through Minnesota, North or South Dakota into Montana or Wyoming, or head straight through Iowa and Nebraska or south through Missouri, Kansas and Oklahoma. We'd probably err for the middle, hugging Interstate 80 but spearing off at any opportunity to explore more interesting roads either side of it.

Middle America is as vast as the portion sizes you'll get anywhere you'll stop to eat. That's largely true whatever route you cross, the distances big, the views equally so. Head to Bonneville to see the salt flats and Speed Week if you time it right, nearby Reno having its Hot August Nights, which is like being transported back in time as the town is awash with classic and hot rod cars on a near week-long cruise and music event. Arrive in Reno in September and the Air Races are a spectacle you'll never forget.

Skip Reno for Vegas, or head to Sin City via Death Valley, where you might see Porsche out hot-weather

Plan your route: aim for a few key events or locations and leave plenty of time for exploring in between.

Make the most of having your car there and finish with a few days enjoying the roads of California, Nevada and Oregon.

✓ Go off grid, visit small towns and speak to everyone – they've all got stories to tell.

🛞 Don't try to do America on a tight schedule. It's vast, and 's so much to Make sure you've plenty of flexibility to do it properly. X Avoid fast-food places; you'll end up needing new clothes very quickly. 🛞 Watch your speed, or at least be very sensible where you drive quickly. The police are everywhere and they're quick to fine



46 | Five ultimate road trips



TO THE NÜRBURGRING —— NORDSCHLEIFE —

The Nürburgring Nordschleife. It's something of a motoring cliché, but there's a good reason for that as it's one of the most demanding, involving and exciting racing circuits you will ever experience. If you've even a hint of octane in your veins then you'll have heard about it and, really, you have to drive it to get an idea of the scale of it. Jackie Stewart dubbed it 'the Green Hell' – or Grüne Hölle – a name that perfectly describes it.

It's more like heaven for some drivers though, which explains its enduring popularity. Many manufacturers still use it extensively, that Nordschleife laptime the number by which modern sports and supercars are measured – to the point where a good number of you will be able to reel off times for things like the GT3, GT3 RS and suchlike. The 13 miles of tarmac that make it up are more than a track: it's an institution with a list of evocative names that you'll know, even if you've never experienced them, like Flugplatz, Tiergarten, Döttinger Höhe, and Karussell.

Of course you can drive them, and getting there

absolute best way to get the utmost from your time around this famously challenging track.

The 'Ring itself doesn't exist in isolation though. It's a product of the topography of the region, its route around the Eifel mountains resulting in its incredible elevations and sometimes tight-radius turns. Nürburg lies at the centre of it, a medieval village and castle, the roads all around sharing the same undulations and topography-hugging nature, making for some excellent drives away from the focus of the track. You'll inevitably spot prototypes in the area, Porsche having a not-so-secret building a few kilometres away from the track, giving you a sneak peek at forthcoming products. You can drive around in your own car as part of an RSR Nürburg tour, or use one of the company's 991 GT3s or GT3 RSs in Genl or Gen2 guises, with optional lunch and Nürburgring Motorsports Museum add-ons if you want them. Driving the circuit is only a small part of the draw to the area, the drive in and around it equally as interesting, if not quite so challenging.

For an immersive, enjoyable way to experience the

✓ Make the most of a visit: the track is amazing, but so too are many of the roads.

✓ Be a spectator. Find one of the good viewing spots on the track and watch all manner of exotica and prototypes running at speed.

✓ Go to the Pistenklause for steak and beers, though it's worth booking as it gets busy.

Don't think you'll be quick out the box. The Nürburgring is a big circuit that takes a while to build up to.

X Always insure your car. RSR Nürburg can assist with this, or hire you one of theirs.

X Don't spend too much time in the Pistenklause, tempting as the fine Pilsners are... you'll want to be fresh in the morning.





is part of the enjoyment. It's about 400 miles from London, taking in a bit of Belgium en-route. Indeed, it's only 70 miles or so between Spa-Francorchamps if you fancy doing a double on famous European tracks. You can do so yourself, or organise a trip with specialists in the area, RSR Nürburg offering a number of tempting packages. RSR Nürburg can help with the public driving sessions in your own car, taxi laps in a GT3 RS – with a video to remember it by in case your eyes are closed for most of it – to a full Driving Academy with one-on-one personalised training in either your own car or a hire car. Do that and you'll be faster, driver training at the 'Ring the Nürburgring and the many delights around it, a tour with RSR Nürburg is about the most satisfying way, with everything taken care of. This allows you to get not only the best of the track, but also the local area. **Total 911** took part in RSR Nürburg's 'Sports Cars and Castles' tour, encompassing a full day in a 991.1 and 991.2 GT3 RS and exploring some of the area's finest castles down the Moselle river. Informative and relaxed, it's a good option if you've made the journey with your partner or a number of friends who might not be as passionate about the rigours of the Nürburgring as you are. For more information on RSR Nürburg's road tours visit **rsrnurburg.com. ⊃**



48 | Five ultimate road trips

Orive slowly and take in the sights; the roads are not in great condition in places.

✔ Visit the Targa Florio Museum in Collesano and have lunch at Baglio Himera on the coast.

Go and explore the older, longer routes.

X Don't expect too much luxury. Sicily is hugely underinvested.

Don't forget to pack a book on the race. *Targa Florio: The Porsche Years 1965-1973*, or *Targa Florio. 20th Century Epic*, will help evoke the madness of the race.

X Take a Carrera. It's a bit too low for a GT...









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AROUND THE - TARGA FLORIO -

The Targa Florio, a race which even when it was still being run was considered to be from a bygone age. Its significance to Porsche is undeniable: no manufacturer won it as many times as Porsche, its 11 outright wins upsetting the Italians, Alfa Romeo coming closest with its ten wins, Ferrari only managing seven. Founded in 1906, the earliest races took an entire lap of Sicily, in its longest form being a single 670-mile lap, before it changed to cover a 44-mile lap on the 'Piccolo Circuit', that course running anywhere between 9 and 14 laps. Its last running as an official international event was 1973, after which it was deemed too unsafe and too difficult to properly marshal.

Porsche's first win in the famously tough race would be in 1956 in a 550 with Italian driver Umberto Maglioli with German teammate Fritz Huschke von Hanstein, their ten laps covered at an average speed of 90.8km/h and taking 7 hours and 54 minutes. Porsche would win again in 1959 with Barth and Seidel in a 718 RSK before its most dominant period in the 1960s. Between – and including – the 1960 and 1970 races Porsche would lift the winner's trophy In 1973 the 911's dominance moved up a class, the arrival of the Carrera RSR seeing the 911 win outright with Herbert Müller and Gijs van Lennep covering the 11 laps in 6 hours 54 minutes and 20 seconds, with an average speed of 114.7km/h.

You'd be doing incredibly well to achieve anything like that today. Sicily's roads haven't had a great deal of investment since those heady days of racing prototypes and sports cars thundering past locals, their animals and more on the tight, testing roads around the island. The tarmac has been ravaged through time, land slips and subsidence, leaving potholes that would swallow a wheel and undulations which will easily contact spoilers and the underbody if you're not very careful with your speed.

The Targa is no longer a route to be raced around, though that doesn't mean you shouldn't drive it. Indeed, if you have a 911 it's something you really should drive. If you do so you should start at Floriopolis, where the start/finish line was, and you'll see the old pits and grandstand. Head out of there towards Cerda for a pleasant start to the drive. Follow the road to Caltavuturo, then to Bivio Polizzi, heading back to Collesano where the Museo Targa Florio is - one of two on the island as well as the famous and often-photographed hairpin, before you head down to Compofelice, then turning left along the six-kilometre straight to Buonfornello, where the sports prototypes were able to reach over 200mph. That shouldn't take more than a morning, so take a map and head out and drive some of the different permeations of the route, wondering at the bravery of the heroes who drove these roads at speed in some of the most wonderful racing machines ever built.





eight times, in 718 RS 60, 718 GTR, 904 GTS, Carrera 6, 910, 907, 908/2 and 908/3 racers.

Porsche itself and privateers campaigned plenty of 911s, starting from a sole 911 arriving for practice in 1965, two racing in 1966 and five in 1967 – with 911Ss taking 1st, 2nd and 3rd in GT2.0 class. 1968 saw a number of 911Ss and a sole T/R take 1st to 6th in GT2.0, the 911's dominance continuing in 1969 with positions 1st though 5th in GT2.0, the 911 utterly decimating all comers in the GT2.0 and GT+2.0 class into the 1970s. The name Targa would be added to the 911 line in 1967, cementing the Targa Florio in Porsche's model line to this day.

Ever since a certain episode of *Top Gear*, the Transfagarasan is widely accepted as the world's best driving road. It's got everything: plenty of switchbacks, epic elevation and outstanding views – if you dare to take your eyes off the road. The only trouble is it's in Romania, which isn't exactly considered a Mecca for petrolheads. It might be 'a little out the way' for most, but that means it can be a destination for a once-in-a-lifetime road trip, one where the destination is very much worth the effort to get there.

The DN7C rises to 6,700 feet and is approximately 56 miles long. It took around four years to build and cost many lives. If you are driving from Britain or Europe you'll enter into Romania via the Al, which is a new motorway and is as smooth as glass. You'll next turn onto the E673; this is due to the motorway awaiting a mountain to be dismantled and the new road to be made. The E673 is a very different kind of road - let's just say the surface is challenging. The positives are that it really immerses you in the country and its driving style, but you'll be glad to get back on the Al. The Al gathers the name E81 until you finally hit a roundabout where you join the 1. After making the right off Route 1 onto the 7C, the Transfagarasan Highway, you head across the valley floor. In the distance the Fagaras Mountains rise.

On the first day I drove it they rose majestically into rain clouds, but as we'd set the route and come a long way that wasn't going to put us off. After quickly passing through a village then next a strip of buildings, a lot of which were catering to tourists, you get into the road proper. It weaves its way upward through a forest, switchbacks and long flowing corners. Here the gradient isn't too crazy, but as the minutes pass and the upward direction continues you get a feeling for the scale of the mountain.

The road sweeps along the glacier-cut valley before you reach the segment that the Highway is famous for: a long section of ascending switchbacks to the top. The stream or river that cascades down through the valley is repeatedly traversed by fragile-looking bridges; the views up and down are breathtaking, and the driving is superb. In fact, any cliché term you wish to throw at this description applies – ribbon weaving its way up the mountain, road hewn out of a rock face. Looking down in the valley and seeing the clouds well below our position was mind-boggling. You see the valley drop below you, but have to realise the edge of it then drops down to the true base of the mountains.

At the top you are greeted with Bâlea Lake and a huge parking and tourist area. From the online pictures available we'd say you really need to choose wisely when you visit. We went in the beginning of October and the roads and tourist areas were pretty empty. I'd imagine this road would be hellish in summer, unless you drive it super early in the morning or getting towards dusk.

From the car park and heading towards Bran you pass through a really long exhaust-testing tunnel to the other side of the mountain, then begins a fantastic descent down towards a huge dam. The road is flowing; some switchbacks and passes under tunnels which redirect streams away from the road make it varied. The views down were spectacular. 7C then weaves its way around Lake Vidraru. On driving this section prepare for severe pain in your face from grinning so hard... what a selection of ridiculous corners and switchbacks this is!



Take your time: the road surfaces can be

less than perfect. Take a suitable 911 model for touring – there is a large amount of miles to cover.

 Enjoy some of the local cuisine.

Remember, Romania isn't yet in the Euro, so you'll need Romanian Leu.

Don't be put off by the weather: even if it rains, the views and roads are epic, plus some parts rise above the clouds.

















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Give yourself as much time as possible to do this trip as you can: the views are among the best you'll see through a car windscreen and the roads are worth driving over and over.

Plan your journey: you'll need to use ferries to jump over the many fjords, and some finish earlier than others.

Keep going north once you reach the Arctic Circle zone. You can still drive north for hours and there are Porsche clubs up there to meet if you fancy it.

 Don't bother trying to drive Trollstigen in the day. Tourist traffic

 mostly coaches
 and camper vans –
 is chronic.

Don't take the mickey with your speed – for a start you're missing the point of Norway, whose beauty should be savoured, but you'll also be fined heavily if the police catch you going above the country's maximum 110kph limit.

Don't go in winter. Many of the roads will be closed and the ones that are open are treacherous, even for a 4WD 911.



TO THE ARCTIC — CIRCLE—

There's something magical about visiting a polar country in your Porsche 911 and driving north towards an area of the planet inhabited by just 4 million people. We're talking about the Arctic Circle, its latitude offering a full 24 hours of daylight during the summer season.

The territory within the Arctic Circle we particularly recommend travelling to, or at least through, is Norway. No matter where you're coming from in Europe it's a wonderful journey to get there, encompassing high-speed Autobahn runs in Germany en route before a dash through Denmark and, should you wish, Sweden.

On arrival in Norway you'll be greeted with some of the most stunning scenery the world has to offer. The most westerly of the Nordic countries has a rugged beauty to it that, the further north you travel, is spoiled less and less by the presence and infrastructure of human civilisation.

En route to the Arctic Circle you'll have some

entire canyon to yourself. Do it and this alone will be one of the most awe-inspiring drives you'll ever have.

The E6 is the main artery running right through Norway from bottom to top, but we strongly encourage you to turn off and explore some of the roads and fjords away from this main route. You'll have little traffic to deal with and will be rewarded handsomely by yet more stunning panoramics. Perhaps proving a trip to the Arctic Circle is the most complete road trip you can do, the Arctic Circle Raceway is a worthy stop-off if you fancy some hot laps at the world's most northerly race track. It's a good, fast track too, nestled in an old quarry, and its remoteness means you aren't likely to fall foul of noise regulations as there aren't any righteous neighbours to keep onside.

Road surfaces are generally excellent, and though the gradual warming of our planet means there's less snow on the mountains tops around you as there once was, it does mean many routes are far more



world-leading trails to tick off, ensuring this is a road trip where the journey is every bit as exciting as the destination. Roads of note include the Atlantic Ocean Road – okay, the road itself is majorly over-hyped, but the Storseisundet Bridge is worth a stop to admire it – and, of course, Trollstigen.

Likely the best road **Total 911**'s editorial team has had the pleasure of driving on to date, it's a majestic road which has it all. Its problem is it's overwhelmed significantly by tourists during the day, but the area's 24-hour summer sunlight plays to your advantage by affording the opportunity to go back late at 'night' for a proper drive, where you'll have the easily accessible for sports cars of a 911 vintage. You'll want to programme your sat nav or PCM for the Arctic Circle Centre, a fitting destination which presents an apt photo opportunity – a great answer to the perpetual 'did you really drive to the Arctic Circle?' rhetoric you'll doubtless encounter forever more. Many turn around and head back south at this point, though in reality there's no need: there are plenty of stunning roads and destinations further north – there's even a Tromsø region of Porsche Club Norway, should you wish to have it proven to you that no matter what corner of the world you travel to, you're always likely to find a 911.

54 | 930 Martini Turbo

THE MAAGICOF MAARTINICOF Total 911 samples a unique 930 exquisitely blending

Total 911 samples a unique 930 exquisitely blending the most famous of automotive pairings

Written by Lee Sibley Photography by Ali Cusick



56 | 930 Martini Turbo



s combinations go, Porsche's link-up with the Italian drinks company Martini & Rossi is one of the most decorated across the entire automotive spectrum. A formidable partnership that's bred much sporting as well as commercial success, the two entities now enjoy an association as ubiquitous as thunder and lightning, salt and pepper or, if you're of an English persuasion, fish and chips.

This most famous of pairings can be traced back to 1968 and Germany's Hockenheimring, when Martini stickers were placed on a Porsche 910 run by Scuderia Lufthansa Racing Team. Porsche therefore became the first manufacturer to wear Martini's famous red-and-blue stripes, marking the start of a relationship which runs in some degree right to the present day, minus a small hiatus in the mid-1980s when Martini partnered with Lancia for Group B rallying, Porsche in turn uniting with Rothmans cigarettes. Regardless, delve through the history books and it won't be long before you'll find Martini Racing's livery streaking over a Porsche race car in all manner of sporting competition, from rallying to GT racing to, of course, prototypes at Le Mans and Daytona. It was at La Sarthe where both Martini and Porsche first tasted victory together, courtesy of Gijs van Lennep and Helmut Marko's #22 917K in 1971. Although that particular car would never race again - due to its magnesium tubular frame, which was filled with pressurised gas, essentially turning it into a missile guided by an on-board human - chassis 917-053 was the start of a rich vein of decorated Porsche race cars bedecked in the visuals of Turin's most renowned drink. The lineup is quite something: think Targa Florio-winning 'R6' RSR, the 2.1 Carrera Turbo RSR 2.1 which battled to second overall at Le Mans in 1974, the SC driven at the 1978 East African Safari by Björn Waldegård, Moby Dick, 935 Baby, the 936/77 piloted to Le Mans success by Ickx, Barth and Haywood, the list goes on and on.

Even today the relationship is enduring, though it's arguably a less glamorous marketing exercise

from both sides. You can buy a rain jacket, towel or coffee cup from Driver's Selection if you like, or for slightly more investment on your behalf there's a Martini Racing Edition 991.1 Carrera S. Released in 2014, the Martini decals attached to an otherwise-stock C2S would have set you back £102,862 for this 'special edition', though your saving grace is only 80 models were made worldwide.

Luckily the 1970s provided a road





car with a more credible tie between the Italian beverage company and our celebrated automotive concern from Swabia. It's the 930 Turbo Martini Championship Edition.

Revealed at the London Motor Show in 1976, it was built to honour a successful year for Porsche in motor racing. The works team had claimed the World Championship for Manufacturers with its 935 and World Sportscar Championship with a 936 – both cars were adorned with the famous stripes of Martini & Rossi. The 930 Turbo was a 3.0-litre, whaletailed example, its Martini body stripes signifying a new option (M42), available only for





The Fuhrmann orthopaedic seats Dr Ernst Fuhrmann was a talented man.

Dr Ernst Fuhrmann was a talented man. Responsible for the conception of the 2.7 Carrera RS and the 911 Turbo itself, the Austrian engineer was to lead the company as CEO in 1970 when it was decided the Porsche family would relinquish its day-to-day control. He did so admirably, albeit with a nagging back problem, fuelling his desire to deliver a supportive sports car seat which catered for customers with similar osteopathic concerns.

A seat was duly unveiled at the 1976 London Motor Show in the very car you see here – the 930 Martini Racing Edition. Officially named 'Porsche orthopaedic seats', it is fitting that the rather naff title has since been colloquially swapped out by enthusiasts in favour of a name directly referencing their esteemed creator.

The optional 'Fuhrmann seats', as they are now known, were essentially Sport seats with two cushioned pads on their base, with two more padded blocks in the backrest which forced the occupant to sit more upright. A £1,800 option at a time when the average house in Britain cost £12,689, their hideous price tag meant they weren't especially popular, though they were a brilliant marker of a man keen to offer more to Porsche's discerning customer base.



"Throw in the famous Martini Racing tri-colour and you've got possibly one of the most universally desired classics"





930s in Grand Prix white. It is believed only 200 were produced worldwide between 1976 and 1979, by which time the Turbo had been upgraded to 3.3-litre specification, complete with a new tea tray spoiler design to incorporate an intercooler – the latter a first on a production road car. The official numbers game though is a little distorted because the Martini stripes were easy to replicate, which many did, on SCs as well as Turbos.

These tributes are not to be confused,

favourite for Paul, who's adamant it should be driven as intended.

Even better, he's offered to let us drive it 'as intended' for the day. Being a 1979 model year example, it's one of the aforementioned 3.3-litre Turbos with 16-inch Fuchs wheels wrapped in Pirelli P7 tyres, which had by then replaced Cinturatos.

Martini's signature stripes run down either side of the Turbo's wide-bodied, Grand Prix white coachwork, while inside the Martini tri-colour is lavished across its entire interior. A black leather wheel provides pretty much the only respite from an onslaught of red, white and blue - it sounds garish, but in fact it's absolutely gorgeous. A special car deserves a special interior, after all. A pair of Fuhrmann orthopaedic seats take pride of place up front, their individual cushions sticking rigidly to the red, blue and white interior colour scheme. There's a gold plaque above the four-speed shift knob, and the Martini-specification Turbo features higher-grade carpet and trimmings too. Otherwise it's standard Turbo fare for the model year, with electrically operated windows, a four-speed

gearbox and a boost gauge newly located within the central VDO clock.

To drive, the Martini is forthcoming with its usual Turbo traits – think comedy lag to three-and-a-half grand, back-slinging inertia thereafter and gearing longer than a summer's day in Scandinavia. A drive which requires thought and, at times, a great deal of guts, it's a frankly brilliant mix and serves up arguably the most entertaining Turbo experience of any generation before or since. This particular car has its glorious flat six soundtrack punctuated by a lively exhaust which spits and pops delightfully at every opportunity, its noise as colourful as that Martini interior. I'm lifting off through town just to hear it in action, each pop a bassy chime among the air-cooled flat six's machinegun chorus. The ride, too, serves another pleasant surprise. Supple enough to glide over the many imperfections of our coastal road's surface, it simply belies its 40 years of age. There's no crashiness to its damping or slop to the steering, normally a forgivable indicator of tired, four-decades-old chassis componentry. It's 🤤

however, with the original, full-fat special editions sporting a complete Martini-inspired interior, such as the example in our pictures. The car is currently owned by Paul Pressland, a devout Porsche enthusiast who has a family link to the 930 Martini Championship Edition. "My father purchased the London Motor Show car in 1980 and drove it for a few years," he says. Clearly enchanted by the car and its personal link, Paul could not pass up the opportunity to follow in his father's footsteps by acquiring his own 930 Martini Championship Edition in 2018. Part of a wider collection of Stuttgart's finest prancing horses, the Martini Turbo is clearly a

60 | 930 Martini Turbo



BELOW The 930 3.3's intercooler was the first to be fitted to a production vehicle, lowering intake temperatures by up to 100-degrees



all in fine fettle here, meaning I've a better chance at keeping some sort of semblance to the Turbo's extremely rear-biased dynamics – the engine alone weighs 230kg.

There's no power upgrade within the Martini Championship Edition's repertoire, though it's not exactly lacking for it. 300hp is delivered to the rear wheels in an age where traction control came in the shape of your own driver discipline. As with any classic 911, the steering constantly flicks between going extremely light under acceleration exacerbated by the turbocharger's ability to throw the car right back onto its rear haunches under full boost - before loading up forcefully under heavy braking as weight is transferred forwards. Managing the throttle and steering accordingly is crucial if I'm to stay out of the many hedgerows lining these winding country lanes. The brakes, derived from Porsche's 917 race car, boast ventilated discs and grooved calipers for better heat dissipation, though there's still a noticeable lack of bite compared to today's machinery, which means they require a firm leaning on to scrub speed effectively. In reality it only adds to the fun: I'm certainly no Gijs Van Lennep or Jackie Ickx, but

my drive in this Martini-clad 911 is evocative to the exploits of those heroes in my mind.

The 930 Martini Championship Edition doesn't need a numbered build run to feel innately special. Released three years before the creation of Porsche's Sonderwunsch department, the 930 Martini represents quite the effort from Porsche to offer its customers a little something extra - provided they were willing to pay for it. And so it proves today: the wide hips of a 930 Turbo are alluring as it is to the eye of any automotive enthusiast, but throw in the famous Martini Racing tri-colour and you've got possibly one of the most universally desired classics, at least one with a Porsche badge affixed to its nose. Its rarity means this is a car that will always hold appeal among collectors - making the current owner's desire to drive it as intended that much more admirable - but as with any 911, the Martini Championship Edition is far more than that. Celebrating arguably the most evocative of partnerships in the history of motorsport, this special 930 offers a glorious way to drink in the delights of the Porsche Turbo while sampling the full flavour of Martini magic – shaken, of course, not stirred.

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PORSCHE'S BARNFIND 901

This early 911 has taken pride of place as the final, scintillating piece in the Porsche Museum's own collection. This is its story of unlikely revival

Written by Chris Randall Photography by Daniel Pullen & Porsche

orsche has an enviable collection of cars, and a visit to its Museum is always a special experience. But for years there was one model missing from Porsche's own collection, and that was an early 901. Launched at the 1963 IAA Frankfurt Show, you'll no doubt know the story of how that development number was subject to a trademark dispute with Peugeot - in France they had registered numbers with a zero in the middle – requiring some hasty rebadging that introduced the world to the legendary 911. The beginning of a model line enduring for more than half a century, it's no surprise Porsche had long been keen to get its hands on an early 901, and on 5 August 2014 that wish was about to come true. It was on that day that Alexander Klein, the Museum's manager of its classic car collection, received a phone call from German television station RTL II. In the course of working on a show about looking for antiques among junk - it was called Der Trödeltrupp – Das Geld liegt im Keller, or The Junk Troop – The Money is in the Basement, for those

whose German is as bad as mine – a film crew had discovered two old Porsche languishing in a barn on a farm in Brandenburg. Owned by Bernd Ibold, who was taking part in the show, one was a 1968 911L, the other was a Porsche 901, chassis number 300 057, that had been built in October 1964. Klein knew the importance of the find: "The penny dropped," he says after the chassis number was mentioned, and 11 days after the call, two experts from the Museum were

despatched to take a closer look.

Beneath a thick layer of dust it was clear the 901 was in a terrible state, with both front wings and numerous other parts missing, and signs of serious corrosion. Its interior was almost entirely absent apart from the dashboard, and the engine and brakes were seized. But none of that mattered, as that chassis number told its own story. This was just what Porsche was looking for, and following a more detailed inspection at Zuffenhausen and advice from two separate, independent experts on a valuation, it snapped up the 901 for 107,000 Euros – it also bought the 911L for 14,500 Euros. With the car now known





simply as 'Number 57' safely ensconced at Porsche, it could see what it had to work with, and the initial signs weren't good. Along with the missing front wings, the right-hand inner and outer sills were also gone, as were the front bumper and its mounting, and alongside the major rot around the suspension mountings it was found that the longitudinal beams of the chassis around the rear axle

had almost completely rusted away.

On the plus side the team had spotted some fascinating details, including a leather sleeve around the gear lever that was only used on 901s of this age, while extensive research established that two square pipes beneath the seat adjustment mechanism were part of a seat-raising system that had been a factory option. "Many of the features only included in the very first models have been preserved in the car," said Kuno Werner, head of the Museum workshop. Along with the two pallet loads of parts that accompanied the car, this was the starting point for an intensive three-year restoration that would return the rarity to its former glory, and it was to be undertaken with the sort of attention to detail that's typical of Porsche. The aim was to save as much as possible, only remaking or using new

parts where absolutely necessary, with authenticity a guiding principle for the project. A whole range of specialists would be involved, both from within Porsche Classic and external suppliers.

Bodywork was first, and work began with a very careful strip-down. Nothing was discarded, even parts deemed beyond rescue being retained in

"The restoration team even used the original spiked roller tool from the 1960s to recreate the correct

marks on the roof. "Our colleagues back then must have needed to do some reworking" commented Werner. The chassis number stamped into a plate located above the fuel tank was another fascinating find that could be preserved. It's an example of just how important it was to Porsche to retain the 901's authenticity, and the dipping process also revealed

some further good news, as more than 50 per cent of the original metalwork could be saved. Engineers had been working on the assumption that more than 50 per cent had been lost, so this was a major boost. Those areas that couldn't be saved were repaired using panels and sections from a 1965 911 to keep things as close as possible in terms of age, steel composition and quality, the skilled craftsmen carefully removing individual pieces from the donor car and transplanting them into the 901 shell. Those parts included the sills, front wings and front end structure. And extra care was taken to recreate the early car's special features, such as heating pipes that passed below the rear axle.

hole pattern in the headlining"

case they could act as a sample for a replacement component. But with everything that could be saved catalogued and stored, the decision was taken to remove paint and rust from the bare shell using a chemical bath. A gentler process than media blasting, it would mean that any unique identifying marks wouldn't be obliterated, such as those created during the car's production. In fact, some important details were discovered, including discolouration of the metal where welding had taken place and grinding

Such was the dedication to retaining the originality and ensuring everything fitted together perfectly, the repairs to the shell took a whole 12

0







LEFT More than 50 per cent of the car's original metalwork could be saved, despite heavy rust **BELOW** A leather sleeve around chassis 57's gear shifter was unique to 901s of this vintage





Model 901 Year 1963 Engine Capacity 1,991cc Compression 9.0:1 ratio Maximum power 130hp @ 6,100rpm Maximum torque 149Nm @ 5,200rpm Transmission Five-speed manual

SuspensionFrontMacPherson struts; torsion
bar springsRearSemi-trailing arms; telescopic
dampers; torsion bar springsWheels & tyresFront4.5x15-inch, 165/80/R15Rear4.5x15-inch, 165/80/R15DimensionsLength4,163mm
1,610mmWeight1,075kg

Performance 0-62mph 8.3 seconds

Top speed 131mph

901 v 911

Aside from the obvious change of name, there were quite a few developments that had taken place by the time the 'A'-series 911 arrived in August 1967. For one thing Porsche had addressed concerns over straight-line stability by adding 11kg of cast iron at each end of the front bumper, a slightly clumsy solution by all accounts. The handling had also been improved with the adoption of wider 5.5-inch wheels instead of the skinny 4.5-inch items fitted to the 901. The engine used cast-iron cylinders with larger valves and a slightly lower compression ratio, and by now all models were using Weber carburettors rather than Solex items. There were also external changes, including wiper arms that were painted black and that parked on the left of the windscreen.

This was also the beginning of the range expansion that would see the introduction of T, L and S variants, along with more power for the 2.0-litre flat six; for the S it had risen from the original 130hp to 160hp. Lower gear ratios also aided performance for all 911s, and buyers after an easier life now had the option of the Sportomatic transmission. The brakes had come in for attention, too, the S introducing the widespread use of ventilated front discs and all models now using a dual-circuit system for greater safety.

While the Coupe was still the choice for many, the introduction of the Targa gave a model that endures to this day. In just three years Porsche had essentially transformed the model from a replacement for the 356 into the beginning of a legend. It's fair to say that its focus on constant improvement would certainly stand the Neunelfer in good stead for the half century to come.

months, and then it was time for paint, although not before every panel and exterior trim part had been test-fitted to the unpainted body to ensure everything lined up, with even the smallest discrepancies corrected before work progressed. To reflect modern environmental thinking there was a departure from what would have been found back in 1964, the Signal red 6407 paint being of a modern water-based type rather than solvent-based. And current corrosion protection processes were also employed, including the same cathodic dips employed on today's 911s, although the PVC underbody and luggage area coating would also have been found on the original car. It had been an epic effort, and even the tiniest





of the camshafts that was also worn beyond repair, but one original camshaft had survived, as had the cylinder heads, which were restored. Those hours reflect the work lavished on the 50-year-old flat six, including the need to overcome a few challenges, such as having to make clips for the complicated carburettor linkages from scratch. Naturally the transmission, suspension, brakes and steering all came in for the same treatment, being rebuilt or replaced as necessary. The rebuilt engine first ran on a test stand in spring 2017 before being reunited with the body in the summer.

When it came to tackling the interior there was the same painstaking attention to detail. Just how much is exemplified by the fact that the restoration team even used the original spiked roller tool from the 1960s to recreate the correct hole pattern in the headlining – it needed to be a square pattern, rather than the diamond pattern of later models. If that's not detailed enough, modellers from Weissach made a wooden mould which could be used as a guide for recreating the ashtray's chrome-plated support – with a hole for a cigar – that had rusted away. It was a design that disappeared from models built shortly after this one, so another piece of heritage had been preserved. Nothing short of perfection would do, so period-correct materials were sourced for the



upholstery and carpeting, although the original wiring loom was too far gone and was replaced with an adapted harness from an F-series 911. The dashboard and steering wheel that had both survived mostly intact were carefully restored.

The work had taken the best part of three years, but the results were certainly worth it when it came to filling a significant gap in Porsche's historic collection. Everyone involved was rightly proud of the work, so it was fitting that a special exhibition - '911 - a legend takes off' - was created within the Porsche Museum to show off the oldest 911 in the collection, the completed 901 going on display on 14 December 2017. It remained there until April the following year, and five months later came another milestone with the car's first official drive. The setting was the Hamburg-Berlin Classic rally, the car rather fittingly shared by its former owner, Bernd Ibold, and one of the presenters of the television show, Otto Schulte. So with the slightly unlikely intervention of a German TV show, Porsche had finally secured the final piece of a very special puzzle, and thanks to a determination to create something that was nothing short of perfection has given all of us the chance to admire the very genesis of the car we love today. Who'd have thought that 57 would prove to be such a special number?

details weren't to be ignored, such as taking the time to source the correct screws for mounting the indicators. At least the original glass could be reused. The results are clear to see, but there was an awful lot to do before this historic car would be back on the road.

That seized engine – like the transmission, not the original unit but an identical type – would require many hours of expert attention by the team at Porsche Classic – 120 hours in fact – and it was the subject of a complete rebuild. Patience was required to extract the pistons that were stuck in the cylinders and a new crankshaft was needed, along with one



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911 TECHNOLOGY

PORSCHE INDUCTION SYSTEMS

Today it is not only mixture composition, but the whole dynamic of induction at the heart of efficient combustion

Written by Kieron Fennelly

nce upon a time, air induction with a petrol engine was very simple: the downward stroke of the piston drew air through a filter, usually an oil-soaked gauze, though since the mid-1960s a throwaway paper element, into the inlet manifold. There it met the atomised petrol vapour created by the carburettor, to be drawn into the cylinder and compressed by the piston on its return stroke. At the point of maximum compression the spark plug would ignite the mixture, the force pushing the piston back down, waste gas evacuated via the outlet valve while the inlet valve opened to admit more petrol-air mixture, and the cycle, repeated by the other cylinders in the manufacturer's preordained firing order, would start again. So it was for decades, from the earliest combustion engines until the beginning of the 1970s. Some racing engines, notably Formula One, used mechanical fuel injection, particularly to avoid the cavitation, or fuel starvation, of carburettors and more dependable supply of mixture at high rpms. A series of external factors began to force changes on automobile makers, obliging them to redevelop a technology which they had long taken for granted. One reason why the technology had stood still was the endless availability of cheap petrol, in retrospect unbelievably so in the US, which meant

that cars managing ten or 12 mpg were the norm – it hardly mattered when a tank cost \$3 to fill. European cars were more efficient, but only because they were far smaller, and petrol on the old continent was three-times more expensive, though still cheap in real terms. Then, in the mid-1960s, two movements in the US – demand for cleaner air from Californians and the controversy over vehicle safety stirred up by Ralph Nader – came together. Suddenly the complacency of auto makers was exposed. Within a decade a trebling of the price of oil as Middle East suppliers discovered their bargaining power had caused a shift in combustion system design. Vehicles would not only have to pollute less, but also offer better fuel economy, exemplified by the American Corporate Average Fuel Economy regulations. By 1972 federal pollution requirements meant that production 911s, for example, which at that stage were using mechanical fuel injection, had to switch to the first generation of electronic injection. Closer metering of petrol supply improved consumption and prepared Porsche for the catalytic converter. The 'cat', which was mandatory in the US from 1975, though not until 1993 in Europe, contained a honeycomb of noble metals whose purpose was to extract partially combusted hydrocarbons from exhaust gas, a major cause of photochromic urban smog. For the catalyst to function correctly

the fuel-air mixture needed to be precisely 14.7:1 – the stoichiometric ratio. In terms of cleaning up exhaust emissions, the catalytic converter has been remarkably effective. However, taking the 911 as an example, it would be a further decade before electronic fuel injection had been developed to give the same response throughout the rev range that Porsche had enjoyed with mechanical injection.

Meanwhile, the quest for better mpg went on, given more urgency since the mid-1990s by political demands for programmed reductions in CO₂ emissions from exhausts. While increasingly sophisticated control of mixture which would take more and more engine and dynamic parameters into account continued to show steady improvements in CO₂ and mpg, engineers had already realised that air induction also held potential. At its simplest, air has mass, inertia and a dynamic of its own. The downward thrust of the piston draws air into the cylinder at considerable velocity, but when the intake valve shuts, the induction air is abruptly stopped in its tracks and bounces back, creating a resonance. Engineers recognised that here was effectively a source of free energy if they could tap it and use these pulses of air to improve cylinder filling. In particular if this resonating air could be controlled in such a way to augment the engine's torque curve, so improving its flexibility and refinement.





The physics of air velocity is a complex subject, and intake systems have evolved as understanding has grown. Porsche's first production use of the resonance effect was with the 3.2: its intake manifold comprised two halves, one for each bank of cylinders, with a plenum, effectively an air chamber, connecting them. By careful calculation of the diameter and length of the inlet pipework, Porsche managed to obtain resonance towards the top of the powerband, resulting in enhanced torque when compared with the SC's three-litre flat six. The next significant development was on the V8 of the 32-valve 928S, where Porsche used eight individual intake pipes of variable length to broaden the rev range in which the tubes of different diameters. The larger drew air from the air filter through a throttle valve and fed both plenums; the smaller tube contained a secondary throttle valve controlled by the Motronic engine management as a function of engine speed. The firing order was such that the cylinders from the two banks ingested air alternately from each chamber, creating shock waves between them. As engine speed increased, it demanded more air, and at 5,500rpm the secondary throttle valve opened, effectively boosting the pressure and therefore available air.

The 993 improved the design by replacing the 964's simple open or shut intake flap with a Motroniccontrolled air mass meter, but the revised 993 of identity contain sliding sleeves which effectively lengthen or shorten the inlet tube. Below 5,000rpm only the throttle valve is open, and the air reaches the cylinders through the full length of the pipes; from 5,000rpm to 5,800rpm a second throttle valve opens, feeding the cylinders from both left and right plenums, the inlet pipes remaining at full length. Then, above 5,800rpm and as long as the throttle valve is open wider than 50 degrees, the second resonance tube opens to enhance the vibration frequency of the intake air. Stage one of the induction delivered air at lower frequency, stage two opened a second source and hence greater mass, and the third stage upped the tempo further by shortening the delivery tubes, by means of the internal sliding sleeves, as the engine approached peak power and air demand was at its greatest. The sequence was coordinated by the Motronic management and the physical actuation of the sliding sleeves by a vacuum diaphragm, rather like the old ignition advance/retard on pre-electronic distributors. VarioRam achieved its goal of better mid-range torque: between 3,500 and 4,000rpm the more flexible VR 993 made 330Nm, whereas the non-VR only made 270Nm. Although subsequent 911s would retain the resonance flap mechanism, Porsche did not return to VarioRam for the 996. Its four-cylinder 🤤

resonance effect could be used. In a car designed to be a long-distance GT, not a high-revving sports car like the 911, the object was a smooth torque curve. This was achieved, the 928S offering around 407Nm from 2,700 to 5,000rpm.

The M64/01 3.6 engine of the 964 illustrated Porsche's increasing sophistication by using variable geometry to exploit intake manifold resonance, thereby optimising the engine's volumetric efficiency, or combustion chamber filling, at medium and high revs. Each bank of cylinders had its own plenum, and was fed from a common plenum chamber through separate pipes. The plenums were connected by two 1995 took this a stage further: always immediately recognisable by its imposing magnesium 'organ pipes' bestriding the flat six, the VarioRam, as Porsche called it, added a third stage to the existing two-stage induction programme. The objective, as ever, was optimal cylinder filling to achieve the engineer's holy grail of maximum volumetric efficiency – in other words optimal combustion. A relatively long inlet pipe provides air, vibrating at lower frequency for moderate engine speeds. As revolutions increased a higher rate of pulsation was required, and VarioRam achieved this by shortening the intake pipe. The six inlet tubes that give the VarioRam system its visual









ABOVE The expansion system of the 911 GT2 for model year 2008; LEFT VarioRam inlet manifold was made of magnesium rather than plastic





head offered all the incremental improvement in terms of performance and consumption expected of a new model, and the next stage, VarioCam, the system of adjusting the cam profiles to modulate cylinder filling, was already programmed for the second-generation 996. However, the 997 GT3 did see a return to multi-stage inlet tract lengths: Porsche had concluded that its otherwise admirable 996 GT3 was both a little too harshly suspended and a

shade inflexible for road use. To overcome the latter the 997 GT3's large central plenum had no fewer than three pipes of varying diameter between each manifold. Two contained vacuum-operated resonance flaps, and up to 5,400rpm all intake was ducted through one pipe; from 5,400 to

6,350rpm a second pipe opened, then to 7,500rpm the largest diameter pipe came into action, but the second pipe closed. Finally, for the GT3 engine's rousing finale from 7,500 to the 8,400rpm redline,

with a naturally aspirated engine. Turbocharged engines are different: the constant pressurised air supply from the turbocharger removes the need for additional resonance pipework and flaps, and one of the engineer's main concerns was excess cylinder heat. This results from turbo-compressed air, which is hotter. Ignition has to be retarded and additional fuel circulated to help lower temperatures in the combustion chambers, and this to a large extent

"Cars managing ten or 12 mpg were the norm – it hardly mattered when a tank cost \$3 to fill"

> explains the traditionally inferior mpg of the Turbo 911 compared with the naturally aspirated model.

Until 2008 Porsche Turbo models used the same basic design of intake manifold as the naturally

Deemed satisfactory, this design became standard for the 997.2 Turbo range; it would also feature subsequently on the V6 engines of the Cayenne and Macan S and GTS models.

From model year 2016 the 911 range underwent a major shift: with the exception of the Turbo and GT cars, all 911s which previously had been naturally aspirated acquired a smaller 3.0-litre flat six boosted with twin turbochargers. Increasingly strict CO₂

> norms meant that to achieve corporate-average carbon dioxide targets virtually all manufacturers were converting their volume models to smaller, turbocharged engines. Although mechanical changes rather than simply software alone differentiated the more powerful

991.2 S from the base Carrera, both used the same expansion intake system originally tried on the 997 GT2. By contrast the lower cost 781 Boxster and Cayman, their previous flat sixes truncated by two cylinders and boosted by a single turbo, continue to use the large plenum, longer inlet tracts system. In theory, further induction development is likely to be of the incremental variety, as manufacturers claim they are concentrating their engineering research on electrical power. However, work on the Otto engine is unlikely to grind to a complete halt until all the environmental implications of battery manufacture and disposal are understood. At present this area is, to say the least, opaque: designer Gordon Murray, for one, is deeply sceptical that batteryelectric can entirely replace the Otto engine, even in the long term. **911**

both resonance flaps opened. The same multi-stage induction system was used on 997 Cup cars and the last Mezger-engined 997, the 4.0 GT3 RS. Interestingly the 997.2 X51 Powerkit option, a standard fitting on the GTS, used a variation of the 993 VarioRam again, using longer, narrower inlet pipes for low-rev operation and switching to shorter inlet tracts for the higher rev range. The 991.1 was a complete rebody and chassis, but it carried over the same engines as the 997, including this same Powerkit option.

It could be said that using the resonance effect of pulsing intake air is almost a form of supercharging aspirated 911s. However, looming CO₂ limits would lead Weissach's engineers to review turbo intake design. They started with the 997 GT2: a specific turbo inlet manifold which featured a long, narrow central passageway joining two plenums with short intake pipes was tried. As the induction air entered the plenums, the pressure dropped, and the effect of this was to lower the temperature in the cylinders by 20°C (68°F) under load. This enabled Porsche to advance the ignition, providing superior combustion and a 15 per cent improvement in mpg during heavy throttle openings. To compensate for the lower air intake pressure, turbo boost was increased by 0.2 bar.
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Porsche stopped building the 935 in 1979. Total 911 explores its development in the hands of privateers like Joest Racing

Written by Kyle Fortune Photography by Zach James Todd

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Porsche 935s were war horses. They got a lot of races and a lot of miles, because they were so successful. They were endurance cars, so they did a lot of long races. Guys could just pound that car for a long race. There weren't many race cars that you could pound it for 12 or 24 hours. There just weren't, and the 935, they could do that easily. They got used," says Bruce Canepa.

He should know, as the American was one of the drivers using them. He still owns one, obtaining and racing the last 935 from the Porsche factory in 1979, with a notable 3rd placing in the 24 hours race at Daytona in the same year. Canepa started racing on

litres to just three litres, though there were loopholes, and Porsche exploited them ruthlessly. It built 25 917s to the letter of the then-homologation law. Porsche would dominate international sports car racing with its new purpose-built race car, competing for outright wins rather than the class wins it had traditionally filled its trophy cabinet with.

The 917's success, and 240mph ability down the Mulsanne Straight at Le Mans, underlined the CIS's rules being counter-productive, with the 917 and its challengers becoming significantly faster than the cars that they had intended to slow down. Race cars had to change, and the CIS dictated from 1972 that they should be developed from road cars. Buoyed with its success, Porsche went on to build the 2.7 RS and its 2.8 RSR relation, though its experimentation with turbocharging saw Porsche adopt forced induction for its future racers. The 930 was born for the road, the 911 Turbo of 1974 needing to be built in a run of 400 cars to allow Porsche to homologate its Group 4 934 racer and the 935 that would follow quickly in the Group 5 classification. The 934 was a hugely successful car, but Porsche wanted a car to compete in the tougher Group 5 competition. The 935 was that car, engineered by Norbert Singer, and it would absolutely dominate

sports car racing from its introduction in 1976. Singer says of Porsche's race car development: "Our flexibility was that we were quite a small company. Of course you don't have these resources like big ones, but we were fast enough to help find solutions for problems we had, and then you are in a small team... you're still a team, rather than a big organisation."

Interpretation of the rules had always been something that Porsche, and Singer, managed better than most, and the 935 was no exception. In 1976 it was powered by a 2.8-litre turbocharged flat six, which when having the equivalency ratio 1.4 multiplier to it allowed the 935 to race in up to the 4.0-litre engine capacity category. Had the 935 initially raced with a 3.0-litre production turbo engine it would have been categorised at 4.2 litres, putting it in a heavier minimum weight category of 1,025kg, rather than the sub-4.0-litre classification's 970kg minimum. The 935 would weigh under that, allowing Porsche to ballast the car as necessary to improve weight distribution. The engine ran a smaller bore to reduce the capacity, and a single turbo, but even so it produced up to 600bhp. Early regulations were more restrictive on the bodywork, with the first 935s having the standard-shaped front wings before Singer exploited

dirt tracks, confessing that that was advantageous when driving a 935. Of those dirt track racers he says: "they were a blast, I mean they were a handful, with them it's all in the throttle, it's all in your foot. You drive 935s in the same way, steering the car is in your foot because they've got a lot of oversteer, a lot of throttle oversteer."

Racing in the late-1960s and early 1970s was hugely competitive. The CSI (Commission Sportive Internationale), the forerunner to the FIA (Fédération Internationale de l'Automobile), was concerned that sports car racers were becoming too fast. Its response was to cut the size of the engine blocks from five





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a loophole in the Group 5 rules that allowed the removal of the headlights. This would allow the 935 to actually generate some downforce at the front axle from its new, now-flat nose, as well as some lucrative business for Porsche's special wishes department building 'flachtbau' Turbos for its wealthiest customers.

The bodywork and aero would experimentally develop throughout the 1976 season, while regulation changes in 1977 allowed Singer and Porsche even more freedom to develop the 935, that including the ability to move the rear bulkhead 20cm further forward. Interpreting the rules to the maximum,

the 1977 935 would feature bodywork only loosely related to the 911. Singer's cleverest innovation was the extended height at the rear, a plexiglass cover and plastic bodywork attaching above the rear window which, like much of the bodywork, remained under the 935's extensive aerodynamic additions, these all to confirm to the homologation rulebook.

The 935's rear might look like a 911's crashed through the back end of a prototype racer, but it worked extremely well. The bodywork would reach its ultimate guise in not just Porsche's factory 935/78 with the lengthened 'Moby Dick' bodywork in 1978, but also the numerous customer cars



78 | 935: the privateers' story



Model 935J Year 1979 Engine

Capacity 3,164cc **Compression** 7.2:1 ratio Maximum power 760hp @ 7,800rpm Maximum torque not disclosed **Transmission** Four-speed manual

Suspension

Front Independent MacPherson struts; wishbones; telescopic dampers; anti-roll bar **Rear** Independent semi-trailing arms;

telescopic dampers; anti-roll bar

Wheels & tyres

Front 11x16-inch Rear 15x19-inch

Dimensions

Length 4,680mm Width 1,265mm Weight 970kg

Performance **0-62mph** 3.0 seconds (est) Top speed Over 210mph



BELOW Joest took advantage of using some 935 Baby parts from the factory, one of only



that were further modified by firms like Joest, Kremer and JLP Racing through the late-1970s and into the 1980s, to name a few.

The 935 would prove so successful that it dominated all the races it entered, Porsche's factory cars only really having any competition from its own customers. Grids and results at famous races like Le Mans, which a Kremer-run 935 K3 won in 1979 – the first GT car to do so – and Daytona were absolutely littered with 935s. In the IMSA championship in the US the 935 won 14 of the 15 rounds, its Trans-Am rival series also seeing 935s take the title.

Even so, Porsche announced that from 1979 the Zuffenhausen racing department would stop building cars to sell. Porsche would continue to provide new parts to a few independent teams,

allowing them to develop and race the car further, building them for their own use and for sale to customers, all with Porsche's blessing.

The Kremer Brothers was one such operation, and Reinhold Joest, owner of Joest Racing, was the other.

This car, VIN 009 0001, was the first Joest 935 built. Dubbed '935J', it was created from the first complete 935 bodyshell supplied by Porsche.

Naturally, it wasn't just the bodywork that saw revisions through its racing life, Porsche continually developing the engine throughout the late-1970s, it reaching its ultimate guise with a 3.2-litre flat six with a bore of 95mm and stroke of 74.4mm for a 3,160cc capacity. 009 0001 has this engine fitted, engine type 930/81, mated to the 930/60 gearbox.

The 930/81 3.2-litre engine here is a derivation of the 930/80 engine which featured a Kugelfischer fuel injection pump with an electronically interconnected intercooler and fuel mixture set-up. The 930/81 benefits from improved oil scavenging thanks to better twin pumps and pick-ups, as well as larger inlet ports, these up from 41m to 43mm, the exhaust ones remaining 41mm. Engine cooling was also greater thanks to a revised higher drive ratio for the top-mounted cooling fan. The output was rated at 760bhp at 1.4 bar boost.

While the engine in the back would be the biggest, the bodywork this 935J features bears relation to the 935 which was powered by the smallest engine – the '935 Baby'. This 1.4-litre turbo, which using the equivalency rating was two litres, was conceived to compete in the lower categories, bringing Porsche's fight further down the field in a bid to increase the firm's dominance.

"Everyone had their own technique of massaging the throttle to keep the turbocharger spooled up"

With less power than its larger-engined relations, Singer had to use every trick to improve downforce without increasing drag, the 935 Baby featuring some factory aero enhancements as a result. Joest would be the only team to be supplied and allowed to use these body parts on their 935s. The most obvious of 935 Baby-derived parts are the raised channels in the front wings to push air down the car into the rear inlets for the intercoolers. Like the bodywork these are different, being the more efficient air-to-air items which Joest and competitors Kremer had found to work better than the air-to-water intercoolers of the factory cars. Other modifications included fabricating the rear of the Porsche tub into a tubular space frame, this benefitting the suspension mounting points.

Inside it's pure 1970's race car: haphazard instrumentation and controls, their operation highlighted by Dymo tape-embossed labels that were a feature in any 1970s and 1980s household, and evidently every race engineer's toolbox. It's a lesson in necessity in there, with enough levers, gauges, knobs and pipes to rival a start-up micro brewery. The important one, the boost knob, is situated beside the gearknob, winding it around giving up to 800bhp if you needed it. The only digital info inside is the occasional warning light – that's digital in it's either on or off, nothing else. There's no speedometer, the only measure of speed the cars approaching in front or receding behind you. The

rev-counter is redlined at 8,000rpm, by which time all hell must have broken loose.

Cutting-edge back when it was built, and hugely capable, Canepa says: "They're pretty impressive when you think about what they'll do in terms of going through a corner,

braking, handling, acceleration... I mean it's a straight turbo tub, cut up. They're amazing. I've been in some new Porsche race cars. The new ones, you think everything's there for you, you just sit back. Where in the 935, you work. If you watch videos of me in the car, you're working the whole time. I mean you're working everything: your brain, hands, and feet, all the time!"

Recalling racing 935s in John Starkey's book, *Porsche 930 to 935: The Turbo Porsches*, Hurley Haywood said you could tell who was driving the 935 in front of you by watching their technique: "Everyone had their own technique of massaging **•**

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BELOW This 935J enjoyed particular success in the DRM in both 1980 and 1981





the throttle to keep the turbocharger spooled up," adding: "700 horsepower, tons of downforce, big wing, a real rocket ship."

Derek Bell raced these cars, including this very car to a 3rd position, trailing a 936 and 908/3 Turbo in the Kyalami 9-hour race in 1981, sharing with Mauricio de Narvaez and Gianpiero Moretti. Driving a 935 in a Discovery Channel documentary, Bell says: "This is one of the most awesome cars ever built by Porsche. It's absolutely incredible, outrageous in its power. You have to be very gentle with it when you turn in; it's neutral, then there's a bit of understeer when the boost comes, then when it really arrives there's oversteer... the brakes are unbelievable, too." In an interview with *Car & Driver*, Bell describes driving it: "You had to manhandle it. It was a hell of a thing, an absolute animal."

Canepa underlines the 935's propensity to move around, saying: "It could definitely bite you. No question it could bite you. Because that's a lot of



had a lot of race history." At Canepa, he says: "We've restored a dozen of those cars over time. I've never seen one that original, other than my car and Peter Gregg's car."

Car 009 0001 wears the Liqui Moly livery and race number seven that it campaigned in during the 1980 Deutsche Automobil Rennsport-Meisterschaft (DRM), the German national championship pulling Zolder a month before Bell, de Narvaez and Moretti placed it 3rd at the Kyalami nine-hour race. Since 1981 it's effectively been retired, passing through a handful of owners, including Bernie Ecclestone and Canepa himself in 2006.

935s would win 129 significant international races between 1976 and 1981, decimating its rivals all the while, it being one of the most successful racing cars Porsche has ever built. It was competitive everywhere, Canepa saying: "they were outstanding at Daytona, even in the infield. They're amazing on the short track. I mean they're amazing at Sear's Point, or Laguna Seca and so many others. They were just good everywhere. Of course, Porsche built, when you look at Porsche, it builds its cars first, basically, for Le Mans. That's the most important race to them.

"When we raced 935s, there wasn't a huge amount of competition in other cars. Ferrari's 512 wasn't competitive. Corvettes weren't competitive, other than in a straight line. The BMWs were competitive, but had no reliability. They were competitive for four laps. Really it was a Porsche race for the most part, still exciting as any other race, because there were at least a dozen 935s in the field. If you go back and look what was exciting, what was exciting was that you could sense how far over the edge we were, all the time watching them. Today you'd get no sense of that anymore. They're like slot cars on a track," concludes Canepa, matter-of-factly.

weight hanging out the back of the car, but yeah, they're good. They're a great car. In the 935, you drive it. If you drive it and you're comfortable with being loose, which is fine for me, I like that, then you're right at home in that car. The guys that don't like that never did really like them."

As Canepa says, these 935s were used, this 935J being no exception. What's remarkable about it is that it was raced for over three seasons, Canepa saying: "It's amazing when you look at the race history of that car, there are no crashes. What's really nice is that tub is all original. That car never had the tub damaged in it, ever. That's about as original a 935 as you'll see that enormous crowds back then, attracting big name drivers as well as lucrative sponsorship. Rolf Stommelen initially drove it in the 1979 championship, rarely placing it outside the top five, with a win at the Norisring Nürnberg 200-mile race.

It would be reconstructed for the 1980 season to 935J/80 specification by Joest and competed in the DRM again, driven by Volkert Merl, it continuing to collect podiums and wins, taking the top step in the Nürburgring race in March 1980. The following year, again in Merl's capable hands, 009 0001 935J gained some more podiums in the DRM. It was also driven by Jochen Mass to 2nd place in the 1981 Interserie at

The 935 was significant, different, and the ultimate expression of a road-based race car, which Canepa says makes you involuntary say: "look at that, oh my god..." Quite.

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84 | Living the Legend – 911 owner reports

Living the Legend

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

hanging off, I relented. It had to go.

off, so what sort of headache am I giving myself?" I asked. "You should prepare for the worst, but hope for the best," came Leon's diplomatic reply after looking round the car. A best-case scenario would be a wrap removal and polish; the worst case would be a full respray.

Preparing for this as Leon suggested

However, it was interesting how Leon was able to feed back some history on the car just by a visual inspection as the wrap came off. First of all we were able to ascertain the wrap was of an economical quality, shall we say, due to the way it crumbled, and also the way it was applied. We also found the front end had been painted poorly previously, though there is no sign of accident damage, and the passenger rear threequarter panel has also had paint, though evidently at a more reputable concern due to the way the wrap largely rolled off that panel without incident. Once the entire car was free from its white peril, a situation assessment was necessary, which delivered both good and bad news. The bad news was that we were looking at a full respray – some parts were way beyond reproach with

0 @lee_sibs

Model 996.1 CARRERA Year 1998 Acquired JAN 2019 I'd first gone to see Leon at Poole Accident Repair, one of 14 Porscherecommended bodyshops in the UK, about the problem back in February. Even then the car's Zenith blue colour underneath was starting to show in places where the wrap was crumbling or wilting.

You may remember these guys have been entrusted with aesthetical work on my previous 911s over the years, so I was to trust any advice given to me again here. "The wrap needs to come meant leaving the car for a few months while I built up enough cash reserves for said worst-case scenario. Then, in early July, mainly down to the fact I just couldn't drive the car in such a state any longer, I booked the car in for the dreaded wrap removal.

It didn't start well. Leon had used heat guns to warm the wrap before attempting to peel off the four-year-old white film on the bonnet, only for the Zenith blue paint underneath to come off with it! It was a disaster.

<image>

any T-Cut or polish, and it didn't make sense to blow in some blue paint over 80 per cent of the car. Damn.

The good news though is the car is getting paint alright, albeit in a different colour. I asked Leon how difficult this would be – my thinking was if we have to paint the 996 blue, then we can paint it any colour we

Gina Purcell Oxford, UK

oginapurcell1

 Model
 911 SC

 Year
 1982

 Acquired
 APRIL 2014

As reported last month, my SC has developed a slight limp and a gammy hip, a bit of old age catching up with

her, if you will. Having raised this issue with Center Gravity when my husband's Carrera 3.2 was with them being checked over recently, they concurred with BS Motorsport that it was possible that the torsion bar was going soft.

The other culprit could be a sticky damper valve, but either way it is beginning to result in some very strange behaviour during maximum power in extremis. During one overtaking manoeuvre the car felt like all the weight transferred to the rear offside, leaving the front-nearside wheel losing contact with the road, feeling as if the front wheel was dangling in space like one of those pictures you see of heroic racers like the fabled Nick Faure, nonchalantly three-wheeling his way around some tortured apex on his way to victory.

It didn't feel very victorious to me, even if the front wheel never left the ground! It fleetingly felt like the car might pivot and spin, taking me and the other car off the road... all very sobering, I can tell you.

I suspect the roots of this malaise may go back quite a while. Before Steffi the SC's restoration, my brief to Riviera Autobody was to find all the rust and repair it. However, I had a budget to keep to and that brief did not include stripping the entire car to a bare shell, which was beyond my finances at the time.

Imagine my disappointment when, post-restoration, and while having her suspension lowered and geometry reset by Center Gravity's Chris Franklin, he found a lot of corrosion down inside the torque tube on the rear offside. Maybe this is part of the problem? I don't know, but I'll find out in a few weeks' time.

I stress again that this isn't the body shop's fault; it's nobody's 'fault', except perhaps mine, and I will now have to pay for not only getting the repairs fixed, but for the geometry to be done yet again afterwards. This also pushes back on getting my Classic Retrofit air-con fitted, which is annoying in a smallproblem way! Ah well... the joys of running a classic Porsche!

like. As I've found out, it doesn't quite work like that, and to keep costs down it's not going to be an engine and interior-out job.

Those areas will instead be masked up and sprayed Satin black, though the rest of the car will be getting its new Porsche shade – code 213, by way of a huge clue. So, a colour change is underway as we speak, and will likely already be in place by the time you read this. Following my Instagram page will allow you to stay fully up to date, and you can see for yourself what unique Porsche colour I've gone for.

86 | Living the Legend – 911 owner reports

Ben Przekop Mercer Island, WA

Model 996 40TH **ANNIVERSARY** Year 2004 **MAR 2018** Acquired

If you own a 911 that is past its factory warranty coverage, chances are you will be considering an independent specialist, either for

lower costs, convenience or expertise. How do you choose? In my experience there is nothing better than references from fellow Porsche enthusiasts. In my case I have started taking my 40 AE to Cantrell Motorsports, located just a few miles from my home, because in speaking with multiple folks in my local Porsche club this shop has earned consistently high reviews both for quality service as well as practical advice.

They specialise in servicing and enhancing Porsche track cars, with some products like roll cages built in-house, but they also offer regular maintenance for all generations of Porsche street cars, and so when I was concerned recently about my 40 AE's braking, I went to see them. Since new OE pads and rotors had been installed just a couple thousand miles ago, they suspected the culprit was simply low or tired brake fluid, so we started with a flush and fresh fill. That simple solution has indeed improved the braking performance, as well as what I

had been experiencing as a tricky clutch engagement of first gear, since the same fluid reservoir serves both brakes and clutch in a 996. I then asked their advice about my very firm suspension; although it provides razor-sharp handling and flat cornering, it makes travel over rough roads a jarring proposition, unsuited to my car's role as a grand tourer.

Owner Colin Cantrell and GM Jeff Falconer both confidently recommended getting a new coilover system from Ohlins, which they have installed on

several generations of 911, and in all cases with rave reviews. They insist that it will totally transform the ride quality of my 996 while keeping the handling performance at the same or higher level as the M030 fitted as standard. As a fully adjustable system it would also allow me to lower the ride height a bit, which is something I have been considering. The good news is that I now have a solution that comes from folks that I trust, and that is a great help when making a decision like this.

Peter Wilson Adelaide, Australia

Model	930 3.3
Year	1980
Acquired	2011

travel has prevented any proper driving over the past month, but I have solved the annoying wheel

balance issue and made some further progress on wheel alignment. After checking there was no run-out of either front wheel or tyre, I went to yet another tyre fitter who specialises in racing cars. They rotated the offending tyre 180 degrees on the rim and it fixed the problem immediately!

Back to improving the handling, the first step was to lower the front end

his brains about wheel alignment. Mark has restored, modified and raced many classic Porsche, and when I described my typical driving as 'fast road' he immediately recommended 'two and two' for the rear alignment. I got him to elaborate and he explained that this meant minus two degrees of camber and 2mm of toe-in for each rear wheel.

Just like the corner balance set-up, I have created some cheap and simple tools so that I can do my own wheel alignments at home. My set-up consists of some pre-levelled plywood pads, string lines using fluorescent fishing trace, a digital level with a wooden base to match my 16-inch wheels for camber and two steel rules attached to another piece of wood, for toe. I use a free app called Clinometer to check castor, as an iPhone is the perfect size to hold against the front strut. Total investment is about \$100, most of that being the digital level. I started with the rear, clamping my trusty digital level to the brake disc so I could see the camber change in realtime. This is where things get tricky, as once all four fasteners are released, both camber and toe can move and are cross-coupled. I usually make a guess

adjustment for toe, check the digital

to match the ride-height reduction at the back. Some quick geometry measurements combined with the pitch of the adjuster screws revealed that the ride height would drop 8mm for every adjuster turn. One and a half turns later I had matched the rear height reduction of 12mm and took it for a drive to settle everything down and measure ride height.

I then visited Mark Poole at RSR Sports Cars, one of two independent Porsche specialists in Adelaide, to pick level for camber change, then clamp it all up, go for a drive and recheck. The front is easier: I attach the digital level to the disc to measure camber change as I move the top strut mount. Front toe is the easiest of the lot and can be adjusted with the weight on the wheels. One turn of the tie rod thread equates to 4.4mm of toe change, and I interpolate from there. I've completed the first round of adjustments but have not yet had a chance to test drive. I'll let you know next month!

Ron Lang Ashland, Oregon

0 @ronlangsport		
2.4-LITRE 911S	Model	
1972	Year	
2018	Acquired	
964 CARRERA 4	Model	
1989	Year	
2015	Acquired	
964 CARRERA 2 REIMAGINED BY SINGER 1991 2018	Model Year Acquired	
964 C4 SAFARI	Model	
1993	Year	
JUL 2018	Acquired	
993 C4S	Model	
1996	Year	
2016	Acquired	
993 TURBO	Model	
1997	Year	
2015	Acquired	
997.2 GT3 RS	Model	
2011	Year	
2016	Acquired	
991.2 CARRERA	Model	
2017 2017 2017	Year Acquired	
991.2 TURBO S	Model	
2018	Year	
2017	Acquired	

with a circuit into British Columbia. The remit was clear: seek remote, windy mountain roads throughout the journey, and with the exception of a short 15-mile stint of fourlane, it was back roads all the way.

Four of us recently returned from an

eight-day, 3,000-mile

drive from southern

Oregon through the

panhandle of Idaho,

I took responsibility for route selection and only blew it once; when deep in the mountains climbing a pass we were stopped by road blockage due to snow. My colleagues were kind and understanding of my error. Fortunately the backtrack was on some of the nicest paved and banked twisties of the trip, and we still reached our lodging in plenty of time for beers and relaxation. Along the way we visited family and friends in remote towns in northeastern Oregon and Washington states. It's always nice to get the local beta on the roads in addition to the companionship.

Oregon, we were told we would enjoy 'the Rattlesnake', which turned out to be about 50 miles of mostly secondgear descent and climb plus third-gear sweepers into and out of the gorge

Heading north out of Enterprise,

Joe Croser Northamptonshire, UK

997.2 TURBO Model Year 2010 **DEC 2015** Acquired

have to adapt it quite substantially!" That had already happened, and was driving me to change the Turbo.

My wife is smart in many ways, and her patience with my passion for cars is rather good considering she has zero interest. Back in the day she imposed

of the Grande Ronde River. Our faces ached from grinning all the way.

Heading back south later on the trip, we took a bypass onto old highway 95 descending into White Bird, Idaho. This stretch of road has been billed as the Stelvio Pass of America, and sure enough, back and forth we went through countless hairpin corners with short connector straights. So nice to feel the suspension being fully worked for prolonged periods.

Once back in central Oregon we stopped in the town of John Day and visited the state park telling the story of Kam Wah Chung and company. In the mid-1800s, a large community of workers and their families from China established themselves in John Day, working for the blossoming mining industry in that area. Kam Wah Chung was an entrerprising fellow who became a leader of this community, providing traditional Chinese health care. His pharmacy is preserved as it appeared in the day, and was a fascinating step back into the history of that region.

I drove my British Racing Green 991.2 Turbo S on the tour and couldn't have been happier. The passing ability this car possesses is always impressive; it feels like the torque is unlimited, going from 50 to 100mph in passing

bursts feels almost instantaneous. The only modifications on the car are H&R lowering springs to get the stance to my liking, plus a Sharkwerks exhaust bypass replacing the centre muffler to get the enhanced aural experience. Both are great additions, highly recommended.

The ride quality remains superb on the lowered car, and cornering speeds are only restricted by limited sightlines. On rare occasion I wished for the silent thrust of the stock exhaust system, but most of the time it was great to hear the rise and fall of revs bouncing off the rock walls during the journey.

We are already thinking about the next road trip. There are so many paved, remote mountain roads to explore in the northwest US that we have barely scratched the surface. I look forward to sharing a 911 safari trip report in the near future – the wild country beckons.

just one constraint on my 'toy' car selection: "Make sure it has four seats so we can use it as a family." The 911 is, as we all know, a perfect 'family' sports car choice. However, we no longer go anywhere as a family in the Porsche. We always take a different car that is better suited to the task at hand, which means the 911 is used by me alone for annual road trips and breakfast runs with pals.

For a while now I have longed for something lighter, more agile and more analogue. More compact even, something that requires more input from me. I'd considered Lotus at various times in the past, but it always seemed to be one compromise too far, offering thrills without much needed practicality. But now, with more practical cars on the drive, a Lotus has only one task, to deliver thrills, and for that they are really rather good, with a couple of test drives quickly confirming so. With my decision made, and with a deal in principle done over the phone, I drove my car to Paragon in Kent where Jamie Tyler awaited me with a coffee. While I drank it and chatted to staff and customers, Jamie meticulously

inspected my car before returning to the showroom with a huge grin. "It's a stunning car," he said. "What a breath of fresh air having someone that can actually describe the condition of their car." Quite right too, if you don't want to waste your time. A good deal is one where both sides feel like winners, and I cannot fault Paragon. Super operation, stunning 'like-new' stock and staffed by enthusiastic people. As a buyer I'd be back to Paragon in a flash.

Soon enough the paperwork was done, MIG 191 was put on retention and the money for my Turbo was in my bank. I took the train home and reminisced

about the wonderful times I have enjoyed thanks to Total 911. I've forged new friendships with some cracking people that will endure long after I have left these pages, and I've explored parts of the British Isles that I may not have otherwise found. Thank you Lee and the **T911** family for making my time here so thoroughly enjoyable. As the sun sets over this page for me it will soon rise over another in Absolute Lotus magazine where I shall be recording my Lotus adventures, much as I did here.

88 | Living the Legend – 911 owner reports

Rob Clarke Bristol, UK

◎ @rob911_ltl
◎ Rob996LTL

 Model
 996.1 CARRERA 4

 Year
 1999

 Acquired
 FEBRUARY 2014

This month we had a family holiday at Goodwood Festival of Speed. We were there for the full duration, camping on-site so

we could avoid the traffic. The journey started badly with a blowout on our caravan, so an intermission at the side of the M4 was not a good start. After some assistance we continued on to Goodwood.

On arrival I had to locate a new tyre – it was more challenging than I thought, but the guys at The Tread Shop Chichester could get one, so I booked an early morning slot to sort that issue out.

I can say I was there when all those petrolheads applauded the VW I.D R and saw it obliterate the hill record. This was also an opportunity to see those limitededition Porsche that you only ever read about or see on YouTube – so good to see them in the flesh and see some of them go up the hill.

It's really hard to pick a single highlight, but I think it was action on the rally stage. Watching the cars go through

the chalky dust almost gave it an alpine feel, with a pair of rally-spec 911s going past in a cloud of dust; great noise and a great site. I wish we had explored the rally stage sooner. With so much there I don't know how people just manage one day – they must miss most of it.

Back to my 911, I would like to say it's all great, but no! It managed to embarrass me at a PCGB club meet by locking itself, flashing its lights and beeping the horn while I was manoeuvring it. It then refused to lock, so that is currently on the sick list, as are air-con and electrical problems. Parts have been ordered; I'm just waiting for arrival and installation. More money spent, but I made use of the Opie Oils discount code for **Total 911** readers for the compressor with the code Total911.

Tony McGuiness San Diego, USA

@tonymcguinessgt3rs		
Model	997.2 GT3 RS	
Year	2011	
Acquired	FEB 2011	
Model	991.1 GT3	
Year	2015	
Acquired	DEC 2014	

One of the great things about owning a 911 in Southern California is we enjoy perfect weather for driving a Porsche. This past weekend I

had the pleasure of driving my GT3 RS to a San Diego Porsche event along with my two good friends Blake and Ron.

I needed to take my 997 GT3 RS for a spirited and challenging drive. The Rennsport absolutely thrives on twisty roads and begs to be pushed! That Mezger flat six seems to love to scream as it is taken through the gears. I never get tired of that amazing sound. Blake brought his 991.2 GT silver GT3 and Ron drove his 991.2 Chalkcoloured GT3. Our destination was the Pala Mesa Golf Resort. This beautiful resort perched up in the breathtaking hills of north San Diego is where Classic Porsche Restoration hosts a type of cars and coffee event to promote their Porsche restoration business.

I would say it is one of the friendliest groups of Porsche owners I have ever met. The event takes place in a nicesized car park next to the golf course, but not too close to the course that your 911 risks getting hit by a golf ball.

The drive took us east from Carlsbad where the city roads almost instantly

everything you could possibly imagine strewn across it. The idea of something hitting the front of the 911 or entering the cabin after falling off a lorry is unappealing, and a risk the three of us

turn into back-country, twisty open roads with frequent switchbacks. For the most part the mountain roads are very smooth, ideal tarmac for a GT3 RS and two GT3s equipped with Pilot Sport Cup 2 tyres. They heat up very quickly and you feel quite confident and planted on some of the most challenging bends. The freeway is avoided because even though it runs parallel to the mountain road we drive, it's busier, and often you will find the strangest objects such as ladders, bowling balls, toilets and agreed we would not take.

The drive to Pala Mesa usually takes 45 minutes to an hour. We enjoyed the drive, the breakfast at the luxury hotel and viewing the cars on display. After a great time mixing with other Porsche enthusiasts and seeing some fantastic 911s, including a white-and-gold version of my GT3 RS, we exited the event driving separate ways and different routes, just in case the California Highway Patrol had heard rumours of quick GT3s driving in the area.

Harold Gan Perth and Sydney, Australia

o @dri	venbytaste
Model	993 C4S
Year	1995
Acquired	JAN 2000
Model	993 C2S
Year	1997
Acquired	JUL 2018
Model	993 C2
Year	1994
Acquired	MAY 2018
Model Year Acquired	964 C2 FACTORY TURBO-LOOK CABRIOLET 1993 JUL 2018
Model	996.1 GT3
Year	2000
Acquired	APRIL 2019

Community is one of the biggest intangibles of any hobby or passion. Since the advent of the internet and Instagram and

Facebook, a whole new dimension has surfaced. Car clubs themselves are no longer the sole domain for organising car enthusiast gatherings. Through social websites car communities and friendships are now forming well before people actually meet face to face. One of the great Porsche networking pages is a Facebook page dedicated to Porsche classic enthusiasts in Australia. Through this page I have forged new friendships with enthusiasts from all corners of Australia, subsequently meeting them on various trips.

While one of the strongest communities in Australia is without a doubt the Melbourne fraternity, other states in Australia have been gradually developing small groups of Porsche enthusiasts who are not so keen on the formality of the official Porsche Clubs, preferring an impromptu coffee gathering with a short drive sometimes thrown in. However, Western Australia seemed to lack such a group, and with this in mind, through the Classic Porsche Australia Facebook page, the first gathering of West Australian enthusiasts occurred just before the winter months kicked off in this part of the world.

With a week's notice we managed to muster up an intimate group of nine cars for the first gathering. As expected everyone warmed up to one another faster than we could adapt to the cold weather. I chose this occasion to bring

the 996 GT3 to its first proper outing, and she was one of the newest cars in attendance besides a lovely Cayman GTS whose owner also happened to own a gorgeous hot-rod air-cooled 911 that I will hopefully get to see soon. After some very fun banter and some good coffee we decided to head out for a quick drive along the West Coast to see each other's cars on the move.

I quickly nipped home to change cars to my narrow-body 993 Carrera, affectionately known to me as Project Iris blue, or PIB. I felt that driving an ex-race car in convoy with a group of distinguished street-going Porsche machinery was just obnoxious. The drive itself was a wonderful, short easy cruise up and down the coast before we all finally split off and headed back to our respective family duties for the weekend.

This brings me nicely to introducing PIB, and another example of the great

Porsche community. PIB is a first-of-run, pre-VarioRam 1994 Carrera narrow-body manual Coupe in Iris blue metallic; my fun go-to car and my running project.

The journey of PIB commenced in a manner I'm sure is familiar to many fellow owners – scouring the classified ads of cars for sale on a regular basis. Reasonably priced 993 narrow bodies in two-wheel drive are rare, and all the more in what is to me one of the best colours ever made, Iris blue. You see, the very first 993 I ever sat in was a brand-new car back in the day in – you guessed it – Iris blue. And the second 993 I ever sat in was a one-year-old 993 bought by a friend back in the day, once again in Iris blue. This classified ad had me pumped. But the problem was that PIB was being sold by an individual on the other side of the country in Melbourne, Australia.

And this is where the Porsche community has always played a wonderful role in enriching my passion for the marque. It just so happened that Brendan, the owner of K-Tec in Western Australia, an independent Porsche specialist and a gent I had for many years stored my cars with, was in Melbourne for some personal family matters. Reaching out to him to seek assistance, without so much as a blink of an eye he not only agreed to assist in inspecting the car, but also to help me organise PIB's delivery back to Western Australia. Rest assured it was not that simple in execution, but Brendan never once complained. Such support of fellow Porsche enthusiasts is insane, and only achievable when a common passion such as the love for all things Porsche brings people together selflessly.

Nick Jeffery Surrey, UK

0 @npjeffery 💟 @npjeffery Model 996 **CARRERA 4S** Year 2002 **JUNE 2014** Acquired **996 TURBO** Model 2002 Year MAY 2017 Acquired Model 997 CARRERA 4 GTS Year 2012 **OCT 2018** Acquired

The Carrera 4S has been into Paragon for its annual service and MOT following our trip to Holland. The car has been used regularly during

the last year, covering around 7,500 miles, and really needed some tender love and care. It was due a minor service, but I also asked Paragon to investigate a number of issues that had risen.

The car had developed a slight oil leak from the near-side rear. I initially thought this was the sump plug, but it actually turned out to be the crankshaft chain tensioner seal – a common problem and very easy to fix. I had also noticed an intermittent fault with the oil pressure gauge where the car would record no oil pressure at all, but knew it would relate back to the oil pressure sender unit which needed replacing, another common 996 problem.

The headlamps were dull, scratched and starting to turn yellow, another 996 age-related trait. Paragon was able to refurbish both units and then apply a ceramic coat for added protection. Paragon refurbished all four hubs and cross-drilled the brake discs to remove the build-up of brake dust deposits. It also replaced the clutch return spring,

which has made the clutch and shortshift gearbox a joy to use again.

Pete informed me my exhaust boxes had reached the end of their useful life after 17 years and were badly split and leaking. I opted to replace them with a Dansk 'OEM look' stainless-steel sports exhaust system which is slightly louder than stock, and I'm really pleased with the result! The difference is most noticeable between idle and around 4,000rpm. The car almost sounds air-cooled now, with a deeper, gruffer exhaust note.

The front inner and outer CV joint gaiters were split and required replacement. I also elected to have all four wheels balanced to rid the car of a vibration at higher speeds. Also, the oil filler pipe had split and was replaced.

After a few weeks bedding the new exhaust in, I noticed a slight resonance on the left-hand side. I popped into Paragon who were quickly able to ease and adjust the system on both sides to avoid a reoccurrence.

The 4S is now back to her absolute best, stone chips aside, and my only dilemma now is whether to sort the paintwork. The car lives outside most of the time and is almost the 'daily driver'. I wonder whether it would stay that way, almost as the default choice, if she was truly immaculate again? I doubt it...

Joe Williams Weymouth, UK

l'm hoping some might have noticed my little 912 in last month's car care product feature. I had a call asking how clean my car was...

knowing that I'm not much of a polisher, it was, of course, unwashed since the last run out. It was whisked off for a topnotch bath and scrub down, followed by a selection of waxes, creams and magic potions. I was seriously impressed with the results, so if you missed the feature, grab a copy of last month's magazine from **myfavouritemagazines.com** and check out the product line-up.

I did have one little scare in the 912 this month en route to Matt at ZRS for a brake fluid flush and bleed... three quarters of the way there our cat appeared on the front seat! It turned out she'd crept in the garage and in the open window. It was too far to turn back, so she hung out in the workshop office while Matt did his thing.

After getting the track bug back for my 987 Cayman (shhhh!), we jumped at the next available Porsche Club day on the Silverstone GP circuit. There was a serious turnout, with over 100

and then start to work on the lines. Rob really helped to speed up that process, giving so much confidence when sat next to you in the car. His back-to-basics approach was a game changer; some things seem so obvious when someone else points them out to you! The work he did on my trail braking and linking the wheel and throttle control was amazing. I also sat in with a friend in his new 991.2 GT3. What an amazing and capable car! It's so well suited to the bigger GP circuit, and even in its manual version was giving everything a run for its money. We had a brilliant session being chased by a new Turbo S, which even with over 100hp more was having a job to keep up. It was a great day at the track. I can't wait for the next one.

cars running on track. The variety and quality of cars was very impressive, with numerous current GT, GT3 RS and other track weapons – there was even a Carrera GT running round!

What really made our day was the addition of Rob Colbourn. Best known for his fast-road training, he's also spent a decade going round Silverstone at both the GP circuit and at the Porsche Experience Centre as an instructor. Not having driven Silverstone before, it was a steep learning curve to pick up the track

Michael Meldrum Houston, Texas

@p911r		
Model	911T TARGA	
Year 1972	Acquired 2013	
Model	911E	
Year 1972	Acquired 2014	
Model	930 TURBO 3.0	
Year 1977	Acquired 2014	
Model	930 TURBO 3.0	
Year 1977	Acquired 2015	
Model	CARRERA 3.0	
Year 1977	Acquired 2016	
Model	911 SC	
Year 1981	Acquired 2015	
Model	3.2 CARRERA	
Year 1986	Acquired 2015	
Model	993 C4S	
Year 1996	Acquired 2016	
Model	964 CARRERA 4	
Year 1994	Acquired 2016	
Model	997.1 GT3	
Year 2007	Acquired 2017	
Model	991.1 GT3 RS	
Year 2016	Acquired 2018	

Well that escalated quickly. In last month's LTL I discussed my thoughts on my 993, with the conclusion it was the sensible,

air-cooled 911. Sensible has never been my thing, so instead of sitting on the fence and talking about the pros and cons, I've decided to sell the 993.

There is nothing inherently wrong with the car – it's a platform I will revisit, but with a view to modify the experience to a more visceral set-up. Unfortunately for my C4S, it is just too nice and low mile an example to start chopping up and making irreversible changes.

Selling a car is a major decision for some, myself included. I very seldom sell cars from my collection, and it fills me with anxiety the thought of fielding correspondence and talking to strangers who may or may not want to buy my car. Due to this and my hectic travel schedule, splitting my time between Scotland, Pennsylvania and Texas, I decided to outsource the sale of the 993 to a small, boutique car sales team. AutoKennel in California, who specialise in classic collectible cars.

There are pros and cons to this approach: the biggest con is giving

up a percentage of the sale of the car. Some consider this a cost, but I view it as an investment. In this scenario you are obtaining the expertise of the seller, their client base, market knowledge and a service that will field calls, arrange test drives, arrange payment, documentation, photoshoots, write-up, correct cosmetic or mechanical issues if required and so on... a turnkey solution.

So how do you correctly prepare a car for sale? Every 911 is different. In my case a 35,000-mile Speed yellow 4S is best presented in its original factory configuration. After a couple of chats we decided the best approach will be to put

the factory Turbo twist wheels back on and leave the Bilstein PSS10s in place, as this is an acceptable upgrade that significantly improves the ride of the 993. From my side I simply collated all the documentation.

Once it arrived in California it was treated to an interior and exterior detail and some kerb rash on one of the original Turbo twists was corrected, then a photoshoot followed by a detailed write-up. If all goes to plan it will be out on the road with its new owner by the time this goes to print. If it does not go to plan, it may be listed for sale in the T911 classifieds!

Chris Wallbank Leeds, UK

This month I finally got around to doing something I've been wanting to do since

I was kid... a day on track in a full-on GT4 race car along with instruction from LMP1 Ginetta factory

driver Mike Simpson. The car was Ginetta's proven GT4 G55 on full slick tyres, sequential gear

box, weighing next to nothing – fair

enough it's not a Porsche, but it's a damn good race car in its own right!

The track was Ginetta's very own Blyton Park, a short but twisty, fun little track – perfect for learning the basics as it's in the middle of a farmer's field with plenty of soft runoff on most corners.

After a bit of a briefing and a track sighting lap it was time to get down to business. I'd driven Blyton a few times in my 997.1 C2S and also Milltek Sport's Golf R, so I was no stranger to the track, but immediately after I got the green light to enter the track I could tell that a GT4 race car is a whole different world to fast road cars. The tips from Mike sat alongside me came thick and fast as he picked up on my bad habits from fast road driving. The first was not to apply too much power mid-corner, instead breaking much harder and carrying the speed through it. The second was letting the car straighten up before applying power - this was found out the hard way just seven laps in when I switched ends rapidly while exiting a long double apex corner, as a consequence ending up a good 20 to 30 metres infield, mowing

down a fair amount of the farmer's crops in the process! Not ideal, but thankfully the car emerged unscathed.

I can't thank Mike enough for the valuable lessons learnt on the day, and astonishingly I only ended up 3.8 seconds off his fastest lap in the G55! I was very happy with that, leaving me eager to pursue more track days and seriously considering buying a track car. Let's face it, the Cabriolet isn't ideal for the track. In an ideal world I would like to keep the 997, so the question is, with a budget of around £15 to 20k, what do I go for? A Porsche 996, a BMW E93 M3? Hmm....

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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

911 2.0-litre 1964-67 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.

CONTRACTOR OF	
and the second second	Street In 1
Production numbers	9,250
Issue featured	123
Engine capacity	1,991co
Compression ratio	9.0:
Maximum power	130hp @ 6,100rpm
Maximum torque	149Nm @ 5,200rpm
0-62mph	8.3 sec
Top speed	131mpł
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

The lightest 911 R was essential racer fitted with engine produci 19 produced, for the factory as w	of all time, the ly a prototype na 906 flat six ng 210hp. Of the our would stay at yorks cars.
Production number	ers 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

(0 series)

911R 1967

0-62mph

Top spee

Length

Width

Weight Wheels & tyres

F 6x15 inch; 185HR

R 6x15 inch; 185HF

911T 1969-71 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.

AND STOLEN	of the local division in which the
roduction numbers	15,082
sue featured	107
ngine capacity	2,195cc
ompression ratio	8.6:1
aximum power	125hp @ 5,800rpm
aximum torque	169Nm @ 4,200rpm
-62mph	7.0 sec (est)
p speed	127mph
ength	4,163mm
idth	1,610mm
eight	1,020kg
heels & tyres	
5.5x15 inch; 165HR	
5.5x15 inch; 165HR	

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 guarter. The review for 2019 Q4 will be October. The review for 2019 Q3 was July.

Ratings

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

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 **Engine capacity** 3,299cc **Compression ratio** 7.0:1 Maximum power 300hp @ 5,500rpm Maximum torque 412Nm @ 4,000rpm 0-62mph 5.4 sec 160mph Top speed 4,291mm Length Width 1,775mm Weight 1,300kg Wheels & tyres F 7x16 inch; 205/55/VR16 R 8x16 inch; 225/50/VR16

From 1978, the SC was the only normally aspirated 911. veloped from the Carrera 3.0 but produced less power Upgraded Sport options. Production num 60,740 **Issue featured** 156 2,994c **Engine capacity** Compression ratio 8.5:1/8.6:1/9.8:1 180/188/204hp@ Maximum power 5,500rpm Maximum torque 265/265/267Nm 0-62mph 6.5 sec 141/146mph Top speed Length 4,291mm Width 1,652mn Weight 1,160kg (1978) neels & tyres F 6x15 inch: 185/70/VR15

R 7x15 inch; 215/60/VR15

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

Production number	ers 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	5/VR16
R 8x16 inch; 225/5	0/VR16

🖲 (0 & A series) \star ★ ★ ★ **911S** 1967-68

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

Production numbe	rs 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; 165/8	0/R15
R 4.5x15 inch; 165/8	80/R15

2,341cc was achieved by ncreasing the stroke from 66mm to 70 4mm while at the same time leaving the bore unchanged. The new 915 transmission was stronger

Production number	s 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	10001000100000000
F 6x15 inch; 185HR	
R 6x15 inch: 185HR	

In 1967, the 911 was updated

the 911L (Lux) was standard

high-performance 911S and

and the range expanded:

and sat alongside the

entry-level 911T

Production numbers

(E series)

911T 1972

A lower compression ratio and

the inclusion of Zenith 40 TIN

triple-choke carburettors led

to the relatively lower power

new 2.341cc engine size

Production numb

Issue featured

Engine capacity

Compression ratio

Maximum power

0-62mph

Top speed

Weight Wheels & tyres

F 5.5x15 inch; 165HR

R 5.5x15 inch; 165HR

Length

Width

Prod

output of 130bhp despite the

Maximum torque 197Nm @ 4,000rpm

16,933

2,341cc

130hp @ 5,600rpm

107

7.5:1

7.6 sec

128mph

4,163mm

1,610mm

1,077kg

(A series)

911L 1967-68

1,603

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 pression ratio 8.6:1 110hp @ 5,800rpm Maximum power Maximum torque 156Nm @ 4,200rpm 0-62mph 8.8 sec (est) Top speed 124mph Length 4,163mm Width 1,610mm Weight Wheels & tyres 1,020kg **F** 5.5x15 inch; 185HR **R** 5.5x15 inch; 185HR

(B series)

911E 1968-69

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 numbe	rs 2,106	🔘 (C & D seri
Issue featured	n/a	011E
Engine capacity	1,991cc	ATTE
Compression ratio	9.1:1	1969-71
Maximum power	170hp @ 6,800rpm	
Maximum torque	183Nm @ 5,500rpm	Engine impr
0-62mph	7.0 sec (est)	included rev
Top speed	140mph	heads large
Length	4,163mm	nead at your ge
Width	1,610mm	and stronge
Weight	995kg	The 1970 'D
Wheels & tyres		had hot-zind
F 6x15 inch; 185/70	/R15	
R 6x15 inch; 185/70	/R15	undersides.

F 6x15 inch; 185HR **R** 6x15 inch; 185HR

1,590

2,687cc

5.8 sec

152mph

4,163mm

1.652mm

8.5:1

145

the external oil-filler, the filler

returned to under the engine decklid. Fitted with the front

Maximum torque 206Nm @ 4.500rpm

spoiler of the 911S.

Production nun

Issue featured

Engine capacity

Compression ratio

Maximum power

0-62mph

Top speed

Length

Weight

Wheels & tyres

F 6x15 inch ATS; 185HR

R 6x15 inch ATS; 185HR

Width

The 911S had the same upgrades as the 911E, including

(F series)

911S 1973

deletion of the external oil filler 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

conform to US regs. From 1976, all 911s were hot-dip coated and fitted with 'elephant ear' mirrors

Production number	e rs 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

body changes as the base model, and came as standard with 'Cookie Cutter' rims

Production number	ers 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) \star 🖈 911 Carrera 2.7 1974-76 From 1974, Carrera na was given to rangetopping 911. Essentially same engine as previo year's RS for all marke except USA. Whaletail available from 1975.

0

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	

930 SE 1986-89

and Touring available.

F 6x15 inch; 185/70/R15

R 7x15 inch: 215/60/R15

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

R 7x15 inch: 215/60/VR15

337

142

2.850cc

8.3:1

3.9 sec

196mph 4,260mm

1,840mm

1,450kg

4,406

2,341cc

165hp @ 6,200rpm

8.0:1

7.5 sec

137mph

4,163mm

1,610mm

1,077kg

144

1975-77 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	2,85
Issue featured	15
Engine capacity	2,994c
Compression ratio	6.5
Maximum power	260hp @ 5,500rpr
Maximum torque	343Nm @ 4,000rpr
0-62mph	5.5 se
Top speed	155mp
Length	4,291mr
Width	1,775mr
Weight	1,140k
Wheels & tyres	
F 7x15 inch; 185/70/V	R15
R 8x15 inch; 215/60/V	/R15

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 number	s 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

930 3.3 1984-89

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

roduction number	s 11,135
sue featured	144
ngine capacity	3,299cc
ompression ratio	7.0:1
laximum power	300hp @ 5,500rpm
laximum torque	432Nm @ 4,000rpm
-62mph	5.4 sec
op speed	161mph
ength	4,291mm
/idth	1,775mm
leight 1,30	00kg (1,335kg from '86)
/heels & tyres 7x16 inch; 205/55/ 8x16 inch; 225/50/	'VR16 /VR16

Carrera 3.2 1984-89

6

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 Compression ratio10.3:1Maximum power231hp @ 5.900rpm Maximum torque 284Nm @ 4,800rpm 0-62mph 5.6 sec Top speed 152mph 4,291mm Length Width 1,652mm Weight 1,210kg heels & tyres F 7x15 inch; 195/65/VR15 R 8x15 inch, 215/60/VR15 (16" for '89)

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 number	ers 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	5/VR16
R 9x16 inch; 245/45	5/VR16

**** 959 1986-1988 Had tech later used on 911s including 4WD,

Issue featured **Engine capacity Compression ratio** 450hp @ 6,500rpm Maximum power 500Nm @ 5,000rpm Maximum torque 0-60mph ABS and twin turbos. A Top speed Length 959S was also available, Width featuring lighter cloth Weight Wheels & tyres Sport seats, five-point F 8x17 inch; 235/45/ZR17 harnesses and a roll cage. R 9x17 inch; 255/40/ZR17

Production number

-	0	TATE BOOT

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

WIG	le and narrow bouleu)
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; 205/4	5/VR16
R 8x16 inch; 245/6	0/VR16

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996 Carrera 4 1998-2001

993 Carrera 4S

The 4S was effectively

wide bodyshell, albeit

Also boasted Turbo

Turbo-look wheels.

a Carrera 4 with a Turbo

lacking a fixed rear wing.

suspension, brakes and

1995-96

GT3. this was a lightweight

996 with power driving the

were uprated.

Production numb

Issue featured

0-62mph

Top speed

Length

Weight

Wheels & tyres F 8x18 inch: 225/40/R18

R 10x18 inch: 285/30/R18

Width

Engine capacity

Compression ratio

rear wheels. Suspension was

lowered by 30mm and brakes

Maximum power 360hp @ 7,200rpm

Maximum torque 370Nm @ 5,000rpm

109

3,600cc

285hp @ 6,100rpm

340Nm @ 5,250rpm

11.3:1

5.3 sec

168mph

4,245mm

1,795mm

1,520kg

1,858

3,600cc

11.7:1

4.8 sec

188mph

4,430mm

1,765mn

1,350kg

117

Issue featured

Engine capacity

Compression ratio

Maximum power

Wheels & tyres F 8x18 inch, 225/40ZR18

R 10x18 inch. 265/35ZR18

0-62mph

Top speed

Length

Width

Weight

Issue featured

Engine capacity

Compression ratio

Maximum power

Maximum

0-62mph

Top speec Length

Width

Weight

Wheels & tyres

F 8x18 inch; 225/40/ZR18

Maximum torque 355Nm @ 5,400rpm

119

3,746cc

11.5:1

5.0 sec

172mph

4,245mm

1,735mm

1,279kg

300hp @ 6,000rpm

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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 number	ers 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	0/R17

A COLORED

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

Production numbers	s 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

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

Production number	s 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	/7P16

**** 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 numbe	ers 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)/7R17

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

Production number	ers 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	0/ZR18
R 11x18-inch: 285/3	35/ZR18

**** **964 Carrera 2** 1990-93

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 numbe	rs 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	5/ZR16
R 8x16-inch; 225/50	0/ZR16

1,437

120

7.5:1

4.8 sec

174mph

5,937

147

3,600cc

4.3 sec

180mph

4,245mm

1,795mm

1,500kg

8.0:1

4,250mm

3,600cc

360hp @ 5,500rpm

964 Turbo 3.6 1993-94

Engine based on modified

covered the Big Red brake

by 20mm. Production num

Issue featured

Engine capacity

Compression ratio

Maximum power

Weight Wheels & tyres

F 8x18 inch; 225/40/ZR18

R 10x18 inch; 265/35/ZR18

993 Turbo 1996-98

Fitted with two KKK

turbochargers in order to

4's transmission system.

Brakes were 'Big Reds'.

Production number

Issue featured

0-62mph

Top speed

Length

Width

Weight

Wheels & tyres

F 8x18-inch; 225/40/ZR18

R 10x18-inch; 285/30/ZR18

Engine capacity

Compression ratio

reduce lag. Power went to all

four wheels using the Carrera

Maximum power 408hp @ 5,750rpm

Maximum torque 540Nm @ 4,500rpm

0-62mph

Top speed

Length

Width

3.6-litre 964 unit. Distinctive 18-

inch split-rim Speedline wheels

calipers. Suspension lowered

Maximum torque 520Nm @ 4.200rpm

E

964 Turbo 1991-92 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.

oduction numbers	3,660
sue featured	160
gine capacity	3,299cc
ompression ratio	7.0:1
aximum power	320hp @ 5,750rpm
aximum torque	450Nm @ 4,500rpm
62mph	5.4 sec
p speed	168mph
ngth	4,250mm
idth	1,775mm
eight	1,470kg
heels & tyres	
7x17 inch; 205/50/Z	R17
9x17-inch; 255/40/Z	R17

Paris-Dakar project. Highlights include four-way adjustable differential, short-ratio gearbox and stripped interior.

Production numbe	15 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	5/ZR16
R 9x16 inch; 245/55	5/ZR16

***** 993 Carrera 1993-97 Restyled bodywork had swept

uprated, as were brakes.

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

160

Production nu 38,626 Issue featured **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 1,370kg Weight Wheels & tyres 7x16 inch; 205/55/ZR16 R 9x16 inch: 245/45/ZR16

993 Carrera 4 1994-97
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.

F 7.5x17-inch; 205/50/ZR17 **R** 9x17-inch; 255/40/ZR17

0

Production number	ers 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	5/ZR16
R 9x16 inch; 245/4	5/ZR16

993 Carrera S 1997-98 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-

Engine capacity Compression ratio Maximum power 285hp @ 6,100rpm Maximum torque 340Nm @ 5,250rpm 0-62mph Top speed Length Width Weight Wheels & tyres F 8x18-inch; 225/40/ZR18 R 10x18-inch; 285/30/ZR18

Production number

Issue featured

Production numbers

Issue featured

Engine capacity

Compression ratio

Maximum power

Maximum torque

Wheels & tyres

F 7x17-inch; 205/50/ZR17

R 8x17-inch; 255/40/ZR17

0-62mph

Top speed

Length

Weight

Width

70

157

3,600cc

250hp @ 6,100rpm

310Nm @ 4,800rpm

11.3:1

5.5 sec

164mph

4,250mm

1,650mm

1,340kg

3,714

118

3,600cc

11.3:1

5.4 sec

168mph

4,245mm

1,795mm

1,450kg

964 RS America

Offered in five colours.

fixed whaletail wing and

two cloth sports seats,

1973

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 numbe	e rs 345
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	0/18
R 10x18 inch; 285/3	30/18

**** 996 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	3,387c
Compression ratio	11.3:
Maximum power	300hp @ 6,800rpm
Maximum torque	350Nm @ 4,600rpm
0-62mph	5.2 sec
Top speed	174mpł
Length	4,430mm
Width	1,765mm
Weight	1,320kg
Wheels & tyres	
F 7x17-inch; 205/50/R	17
R 9x17-inch: 255/40/R	17

body looks.

'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.

2	
Production number	rs 91
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	162mpł
Length	4,250mm
Width	1,775mm
Weight	1,470kg
Wheels & tyres	
F 7x17-inch; 205/50.	/17
D 0v17 inch: 255 /40	/17

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	18
P 11v18-inch: 295/30/1	218

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 620Nm @ 3.500-Maximum torque 4,500rpm 0-62mph 4.1 sec Top speed 196mph Length 4,450mm 1,830mm Width 1,440kg Weight Wheels & tyres **F** 8x18-inch; 235/40/R18 **R** 12x18-inch; 315/30/R18

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 undated

Production numbe	ers 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	I/R17
R 9x17-inch; 255/40)/R17

*****	Produ
Con2 006 C4	Issue
Genz 990 64	Engine
2002-04	Comp
	Maxim
Faceinted milline with	Maxim
rear-drive Carrera, though	0-62m
the all-wheel-drive version	Top sp
drives very psuch like	Lengt
unves very muchlike	Width
its rear-driven brethren.	Weigh
Cabin received minor	Wheel
	F 7x17-
updates over Gen1.	R 9x17

	the second se
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/R	17
R 9x17-inch; 255/40/R	17

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

Production number	ers 1,96
Issue featured	11
Engine capacity	3,596c
Compression ratio	11.3
Maximum power	345hp @ 6,800rpr
Maximum torque	370Nm @ 4,800rpr
0-62mph	4.9 se
Top speed	175mp
Length	4,430mr
Width	1,770mr
Weight	1,370k
Wheels & tyres	
F 8x18-inch; 225/40)/R18
R 10x18-inch; 285/3	30/R18

Sales debate Which colour is the easiest to sell?

How about this for an age-old debate: is there such thing as a safe bet in terms of colour to have on a Porsche 911, and if so, what is it? We're talking about the possibility of a shade which makes car dealers rub their hands together with glee at the prospect of a quick and easy sell, the one they'll have absolutely no problem shifting on.

Certain shades have become almost perennial fixtures on the 911 through the years: the obvious one is Guards red, and latterly GT silver, Carrera white and Basalt black. Such consistent use of these hues – a mixture of both solid and metallic colours, incidentally – might lead us as consumers to believe these mainstays are the obvious choice, but we're keen to find out what the experts think.

"The safe colours for the more everyday 911s are the silvers, whites and blacks, without a doubt," says Jonathan Franklin of Rare Car Finance, who's enjoyed more than 20 years selling high-value Porsche around the globe. "For the more exotic stuff, bright colours tend to work better and spark more interest, so you have to split it into two categories. A Mexico blue 996 Turbo would be a difficult car to sell, for example, but the same colour on a 997 GT3 RS 4.0 is a different proposition entirely. That said,

Gen2 997 GT3 RS 09-12		A TRACK MANNER	997 Sport Classic 2010
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		-0-	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.
proofing.			Production numbers 250
Production numbers 1,500	*****	Production numbers 356	Issue featured 146
Issue featured 125	007 Speedstor	Issue featured 128	Engine capacity 3,800cc
Engine capacity 3,800cc	33/ Speeuster	Engine capacity 3,800cc	Compression ratio 12.5:1
Compression ratio 12.2:1	2010	Compression ratio 12.5:1	Maximum power 408hp @ 7,300rpm
Maximum power 450hp @ 7,900rpm	Built to mark Baraaha	Maximum power 408hp @ 7,300rpm	Maximum torque 420Nm @ 4,200-
Maximum torque 430Nm @ 6,750rpm	Built to mark Porsche	Maximum torque 420Nm @ 4,400-	5,600rpm
0-62mph 4.0 sec	Exclusive's 25th year.	5,600rpm	0-62mph: 4.6 sec
Top speed 192mph	Shorter windscreen but	0-62mph 4.4 sec	Top speed: 187mph
Length 4,460mm		Top speed 190mph	Length: 4.435mm
Width 1,852mm	rake angle same as 997	Length 4,440mm	Width: 1.852mm
Weight 1,370kg	Carrera. Wide body with	Width 1,852mm	Weight: 1.425kg
Wheels & tyres	19-inch Fuchs wheels	Weight 1,540kg	Wheels & tyres
F 9x19-inch; 245/35/ZR19 R 12x19-inch; 325/30/ZR19	Rear-wheel drive.	Wheels & tyres F 8.5x19-inch; 235/35/ ZR19 R 11x19-inch; 305/30/ZR19	F 8.5x19-inch; 235/35/ZR19 R 11x19-inch; 305/30/ZR19

we are constantly surprised by market trends, so there's certainly no die-cast rule when it comes to acceptable Porsche shades."

Anthony Pozner at Hendon Way Motors, London, says tastes have changed over the years, which has led to changes in popularities of certain colours. "In the 1990s it all got a bit monotone, very subdued," he reflects. "It was a bit boring, really. I'm pleased to say bright colours are coming back now, which makes it easier to sell brighter colours - even on older cars."

And what about the worst colour to sell? "Green," says Anthony, without a moment of hesitation...

6	Co	- 30
		DBUTT
	-	

997 Turbo S 2011-13 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.

0-62mph

Top spe

Length

Weight

0-62mph

Top speed

Length

Width

Weight

Production numbers	2,000
Issue featured	123
Engine capacity	3,800cc
Compression ratio	9.8:1
Maximum power 530	hp @ 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 8.5x ZR19 R 11x19-inch; 305	19-inch; 235/35/ 5/30/ZR19

▼ ★★★★★	Production numbers	Unknow
001 1 Comore	Issue featured	13
991.1 Carrera	Engine capacity	3,4360
2011-15	Compression ratio	12.5:
	Maximum power	350hp @ 7,400rpn
I he first of the newest and	Maximum torque	390Nm @ 5,600rpn
latest Gen7 911, it takes	0-62mph	4.8 sec
styling hues from the 993	Top speed	179.6mpł
A version of the second state of the second st	Length	4,491mn
A redesigned chassis with	Width	1,808mn
lengthened wheelbase	Weight	1,380kg
reduces overhang of the engine.	Wheels & tyres F 8.5x19-inch; 235/40, R 11x19-inch; 285/35/3	/ZR19 ZR19

Production number

Issue featured

Engine capacity

Top speed

ession ratio

25,788

3,596cc

325hp @ 6,800rpm

370Nm @ 4,250rpm

11.3:1

5.0 sec

177mph

4,427mm

1,808mm

1,395kg

112

**** 997 Carrera 2004-08

Maximum power Fully revised Porsche Maximum torque 911 with 993-influenced 0-62mph bodywork and a new Length interior. Engine was like Width 996, but refined for more Wheels & tyres power. Six-speed Tiptronic **F** 8x18 inch; 235/40/R18 **R**10x18 inch; 265/40/R18 option available.

Gen2 997 C2 2008-12

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.

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: 265/4	0/ZR18

997 Carrera S 2004-08

355hp @ 6,600rpm Maximum power Maximum torque 400Nm @ 4,600rpm 0-62mph 4.8 sec 182mph Top speed Length 4,427mm Width 1,808mm Weight 1,420kg Wheels & tyres **F** 8x19 inch; 235/35/R19 **R**11x19 inch; 295/30/R19

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 nun 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 187mph Top speed Length 4,435mm Width 1,808mm 1,425kg Weight Wheels & tyres F 8x19 inch; 235/35/ZR19 R 11x19 inch; 295/30/ZR19

8,533

3,596cc

11.3:1

5.1 sec

174mph

4,427mm

1,852mm

1,450kg

997 Carrera 4 2005-08

Like the 997 Carrera, but with

transferring between five and

Maximum power 325hp @ 6,800rpm

Maximum torque 370Nm @ 4,250rpm

40 per cent of traction to the

front. 44mm wider at rear.

Production numbers

Issue featured

Engine capacity

0-62mph

Top sp

Length

Width

Weight

Wheels & tyres

F 8x18 inch; 235/40/R18

R 11x18 inch; 295/35/R18

Compression ratio

drive to all four wheels via a multi-disc viscous coupling,

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

30,973

3,824cc

355hp @ 6,600rpm

11.8:1

4.8 sec

179mph

4,427mm

1,852mm

1,475kg

111

997 Carrera 4S 2005-08

The same 3.8-litre, 355bhp

engine as the Carrera S, with

accommodate for wider rear

Maximum torque 400Nm @ 4,600rpm

wheels and tyres.

Production number

Issue featured

Engine capacity

Compression ratio

Maximum power

0-62mph

Top spe

Length

Width

Weight

Wheels & tyres

F 8x19 inch; 235/35/R19

R 11x19 inch; 305/30/R19

four-wheel-drive system on C4 44mm wider than Carrera S to

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 numb 3,800 Issue featured 152 Engine capacity 3,800cc **Compression ratio** 9.8:1 Maximum power 500hp @ 6,000rpm 650Nm @ 1,950 aximum torque 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	

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

besto	of small/	'large turk
twint	urbos. V	'TG gave
- 0		

117

Unknown

157

3,800cc

5,600rpm

4.6 sec

190mph 4,435mm

1,852mm

1,420kg

420Nm @ 4,200

12.5:1

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

Production n 2,200 Issue featured **Engine capacity** 3,797cc **Compression ratio** 12.2.:1 Maximum power 435hp @ 7,900rpm Maximum torque 430Nm @6.250rpm 0-62mph 4.1 sec 194mph Top speed Length 4,460mm Width 1,808mm 1,395kg Weight Wheels & tyres 8.5x19 inch; 235/35/ZR19

R 12x19-inch:305/30/ZR19

C4's wider rear body, and

Sengine, with a Powerkit

Production numb

Engine capacity

Compression ratio

Maximum torque

neels & tyres

F 8.5x19 inch; 235/35/19

R 11x19 inch; 305/30/19

0-60mph

Top speed

Length

Width

Weight

Issue featured

powered by the 3.8-litre Carrera

producing extra 25bhp. GTS is

Maximum power 408hp @ 7,300rpm

aden with Porsche options.

•	****
007 CT2	DC A O
33/ GIS	KJ 4.U
2010	
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
ssue 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/Z	R19
R 12x19 inch; 325/30/	ZR19

*** **997 918 Edition** 2010 These exclusive 997 Tu S-spec 911s were only available to those who had paid a deposit for a 918 Spyder. Acid greer badging and brake calipers.

Production numbers	121
Issue featured	74
Engine capacity	3,800cc
Compression ratio	9.8:1
Maximum power 530h	p@6,2506,750rpm
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 8.5x1	9 inch; 235/35/
ZR19 R 11x19 inch; 305/	30/ZR19

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

Production numbers	s 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

991.1 Carrera S 2011-15

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

digital dash clo	icator on the ck.
Production number	ers Unkno
Issue featured	
Engine capacity	3,43
Compression ratio	12
Maximum power	350hp @ 7,400i
Maximum torque	390Nm @ 5,600
0-62mph	4.9
Top speed	177r
Length	4,491
Width	1,852
Weight	1,43
Wheels & tyres F 8.5x19 inch; 235/ R 11x19-inch; 305/3	40/ZR19 5/ZR19

22mm wider body than C2 with 10mm wider tyres and

T Tour otton manna ore	Ormanomi
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
	Issue featured Engine capacity Compression ratio Maximum power Maximum torque O-62mph Top speed Length Width Weight: Wheels & tyres F 8.5x20 inch; 245/31 R 11x20 inch; 305/30

▼ ★★★★★	Production numbers	3,000 (estimate
001 1 072	Issue featured	14
2211 CI 2	Engine capacity	3,800c
2013-15	Compression ratio	12.9:
	Maximum power	475hp @ 8,250rpr
wide body from 991	Maximum torque	440Nm @ 6,250rpr
Carrera 4 was used for the	0-62mph	3.5 se
first time Mezger engine	Top speed	196mp
	Length	4,545mr
from previous G13s	Width	1,852mr
replaced with revamped	Weight	1,430k
DFI version of Carrera S engine. PDK only.	Wheels & tyres F 9x20 inch; 245/35/2 R 12x20 inch; 305/30/	(R20 (ZR20

Technology explained

027 THE 'FLAT' ENGINE

Synonymous with the Porsche 911 throughout its 56-year history, Total 911 explores the inner workings and advantages of a flat engine

First invented in 1896 by one Karl Benz, the internal combustion engine has powered millions of vehicles around the planet for 123 years since. Its most popular incumbent in terms of numbers was of course the Volkswagen Beetle, yet arguably the most iconic recipient is the Porsche 911, which has utilised a flat engine for the entirety of its 56-year existence.

The basic layout of a flat engine is where, as the name suggests, cylinders lie flat, on opposite sides of a crankshaft, slightly offset from one another. It is for this reason that Benz originally called his design a 'contra' engine, because the cylinders on either side worked in opposition to one another.

There are many advantages to a flat engine: dynamically it lowers the car's centre of gravity compared to an upright (in-line) or 'V' design, which makes it an ideal proposition for sports cars. In the 911 in particular, the location of the engine is also significant - mounted over the rear axle, this ensures additional braking force is exerted over the rear of the car, crucial as bigger brakes are usually fitted to a vehicle's front axle. Then, on corner exit, excellent traction over its rivals is assured, somewhat dispelling the age-old myth that the Neunelfer's engine is located "in the wrong place". Mechanically the flat engines are smaller in size and therefore lightweight, and boast a naturally smooth operation. Having pistons connected on either side means the crank enjoys a natural balance too. The flat engine is complicated to manufacture, though: there are more parts to consider, particularly for water-cooled variants installed from the 996 onwards. Porsche has shown the enduring appeal of the flat engine remains significant, continuing to develop its loyal powerplant even at a time when e-mobility is becoming the industry buzzword. It won't last forever, but until then the flat engine is perhaps the original and best engineering marvel attached to the 911's repertoire.

2013-14 New Turbo marks introduction of rear axle steering, plus PDK-only transmission to forced induction 991 models.

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	

991.1 Turbo S 2013-15 Same dimensions as 991 Turbo, but with a tweaked map to provide extra 40bhp. Turbo options standard, including centre-lock wheels and PCCB ssue featured Engine capacity 3,800cc **Compression ratio** 9.8:1

Maximum power 500	mp @ 0,500
	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	

Shares Carrera'	s 3.0-litre
turbocharged 9	A2 engine,
with revised turk	oos, exhaust
and engine man	agement to
produce extra 5	Ohp.
Production number	rs 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: 305/30/7R20

991.2 Carrera 4
2016-18
New 9A2 turbocharged
engine fused with all-
wheel-drive running gear,
now electro-hydraulically
controlled. Distinguishab
by wider body and full-
width rear brake light.

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 8.5	k19-inch; 235/40/
7R19 R 11 5x19-inch: 2	95/35/7R19

Production numbe	rs 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	5/ZR20
R 12x20 inch: 305/3	30/7R20

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 mainly aerodynamic and chassis revisions.

roduction numbers	100 UK cars (est)
sue featured	164
ngine capacity	4,000cc
ompression ratio	Unknown
laximum power	520hp
laximum torque	480Nm
-62mph	3.2 sec
op speed	193mph
ength	4,549mm
/idth	1,880mm
/eight	1,420kg
/heels & tyres	
9.5x20-inch; 265/35/ZR2	20
12.5x21-inch; 325/30/ZF	21

-8		
ited-editio	on special from	

Flach Porsche. Engine taken directly from 991.2 GT3 with its six speed manual compulsory.

Production number	ers 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; 245/3	5/ZR20
R 12x12-inch; 305/3	30/ZR20

991 GT2 RS	2017-19	
ME		
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 number	s 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-	

R 11.5x20-inch; 305/30/ZR20

	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	

		Põ
• ****	Production numbers	50
001 Turbo S	Issue featured	1
291 Inupo 2	Engine capacity	3,800
Exclusive Ed.	Compression ratio	9.8
The work of Porsoba's	Maximum power	607
The work of Forsches	Maximum torque	750Nm @ 2,25
Exclusive department,		4,000rp
with extensive use of	0-62mph	2.9 s
oarbon on the bonnet	Top speed	205mj
carborrorrite borrnet,	Length	4,507m
roof and side skirts. Power	Width	1,880m
is hiked to 607hp. Turbo	Weight	Not specifi
	Wheels K three E 0y20	upoh: 2/6/26/70

Aerokit standard.

00 170 Occ .8:1 7hp 250pm sec nph nm nm Weight Not specified Wheels & tyres F 9x20-inch; 245/35/ZR20 R 11.5x20-inch; 305/30/ZR20

R 11.5x20-inch; 305/30/ZR20

**** 991 Turbo S **Exclusive Ed.**

flywheel optional.

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	2,981co
Compression ratio	10.0:
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 8.5x1	.9-inch; 245/40/
ZR19 R 11.5x19-inch; 29	5/35/ZR19

F 9x20-inch; 245/35/ZR20

R12x20-inch: 305/30/7R20

F 8.5x20-inch; 245/35/ZR20

R 11.5x20-inch; 305/30/ZR20

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 number	s In production
Issue featured	174
Engine capacity	2,981cc
Compression ratio	10.5:1
Maximum power	450hp @ 6,500rpm
Maximum torque 53	30Nm@ 2-5,000rpm
0-62mph	3.5 sec
Top speed	191mph
Length	4,548mm
Width	1,852mm
Weight	1,515kg
Wheels & tyres	
F 8.5x20-inch; 245/3	5/ZR20
R11.5x21-inch; 305/3	0/ZR21

*****	Prod
002 Comerce AC	Issue
992 Carrera 45	Engir
2019-	Com
	Maxi
As with the 992 Carrera	Maxi
S, but with active all-wheel	0-62

2010	Maxim
As with the 992 Carrera	Maximu
S, but with active all-wheel	0-62mp
drive providing variable	Top spe
torque to the front avle	Length
Identifiable by cilver	Weight
	Wheels
decklid slats (C2S	F 8.5x20
has black).	R 11.5x2

Production numbers	In production
ssue featured	174
Engine capacity	2,981cc
Compression ratio	10.5:1
Maximum power	450hp @ 6,500rpm
Maximum torque	530Nm@ 2-5,000rpm
)-62mph	3.4 sec
fop speed	190mph
.ength	4,548mm
Vidth	1,852mm
Veight	1,565kg
Wheels & tyres	
8.5x20-inch; 245/3	5/ZR20
11.5x21-inch; 305/30	0/ZR21

revealed some nine months after the S. Visually different to the C2S thanks to smaller wheels and two singleexit exhaust tips.

992 Carrera

The base 992 was

2020

In production
183
2,981cc
Unknown
385hp
Unknown
4.0 sec
182mph
4,548mm
1,852mm
Unknown
Э
20

HEXAGON CLASSICS

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MODEL	COLOUR	MILEAGE
1964 356 C Carrera 2 2000GS Coupe	Bali Blue / Black Leatherette. 1of 6 RHD with E/sunroof	N/A
1973 911 2.7 Carrera RS Lightweight	Blood Orange / Black Cloth. 1of 17 RHD Versions	N/A
1974 911 Targa 2.7 MFI	Gemini Blue / Beige Leatherette & Twill, Total restoration	82,200
1986 911 Super Sport Targa	Grand Prix White / Black Leather piped white	29,300
1987 928 S4 Automatic	Venezia Blue / Navy Leather. Air Cond, Electric Sunroof	44,100
1988 911 Carrera Targa Jubilee Edn LHD	Diamond Blue / Dark Blue Ruffled Leather. G50 Gearbox	91,000
1989 911 Super Sport Cabriolet	Guards Red / Linen Leather, piped red, G50 Gearbox	28,000
1989 911 Carrera Sport Cabriolet	Guards Red / Linen Leather & Pinstripe, Air Con, Sports Susp	56,500
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1995 993 Turbo	Arena Red / Black Full Leather, Air Conditioning, E/sunroof	2,200
1996 993 Turbo X50 LHD	Grand Prix White / Black Full Leather, Air Cond, E/sunroof	26,200
1996 993 Turbo	Midnight Blue / Grey Full Leather. E/sunroof, Air Conditioning	23,600
1996 993 Carrera 2 Cabriolet	Midnight Blue / Grey Leather, Porsche Classic Nav, Varioram	43,700
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2010 997 GT3 Clubsport	Guards Red / Black Leather Clubsport. PCCB, DEM	13,600
2010 Carrera 2 PDK Cabriolet	Basalt Black / Black Full Leather, PCM Navigation, Heated Seats	10,700
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122 911 hero: Tony Lapine



Head of Porsche Design for almost 20 years, we take a closer look at the life and work of a true 911 hero

Written by Chris Randall Photography courtesy Porsche Archive

natole Carl Lapine – known to many as Tony – was born in Riga on 23 May 1930, but as World War Two loomed things were about to get very difficult for him and his family. As refugees from Latvia they moved first to Poland and then to Germany. But, having shown a flair for design, 1950 would see Lapine working for

Daimler-Benz, and just a few years later the family relocated to America and the state of Nebraska, where he ended up working on snow ploughs. The beginning of a glittering career was just around the corner.

After working for General Motors in the US and Opel in Germany – involved with the Chevrolet Corvette



potential demise of the 911. Indeed, as head of Porsche Design he'd worked under both Ernst Fuhrmann and Peter Schutz, and while he'd overseen the introduction of the G-series models, a much bigger challenge lay ahead. We've covered the 964's development and importance on numerous occasions, but suffice to say Lapine and his team faced a huge task in transforming the styling and

technology and ensuring the 911's long-term survival. Although reportedly unhappy with the restrictions imposed on the project, the result was a success, this being the Neunelfer that broke with the past and marked the beginning of the technological cars we know today. And it's even more of an achievement given that Lapine never owned a 911, nor did he especially like them. The development of the 964 would be his swansong, as he retired from Porsche in 1988, a move no doubt accelerated by the heart attack he suffered not long beforehand. It was the end of an amazing career, one that had seen him oversee a vital model in the 911 story. After all that, perhaps it's no surprise that a quiet retirement wasn't really on the cards, and his life post-Porsche would include sailing across the Atlantic. He passed away on 29 April 2012, and the automotive world lost one of its brightest stars - and a true 911 hero as far as we're concerned.

and as head of the Opel Research Centre respectively – he would join Porsche on 15 April 1969. He'd known Ferry Porsche since 1957, and they'd subsequently met on a number of occasions; it was perhaps inevitable

that someone as talented as Lapine would find himself welcomed
into the Zuffenhausen fold. Having owned a 356 for a number of
years he knew exactly what made these cars tick, and while his role
saw him oversee a number of significant models, including the 924,
944 and 928, it's his work on the Neunelfer that interests us here.
Lapine had lived through something of a tumultuous time at
Porsche, what with internal politics, strong characters and the

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