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PORSCHE**

**944 TURBO  
PROJECT**



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# GT PORSCHE

The world's premier Porsche magazine

Issue 220 December 2019 £4.99

**10**  
YEARS OF  
PANAMERA

## GRAND DESIGNS

TAYCAN STYLING SUPREMO, MICHAEL MAUER

### DEFINING THE LOOK OF AN ALL-ELECTRIC FUTURE

PLUS

1967 911 S RESTORATION

UNDERSTANDING CAMSHAFTS

DRIVER COACHING: ROAD vs TRACK

**914  
BUILD  
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**997 C4S: ROAD TO REIMS**

Heading to France in search of an  
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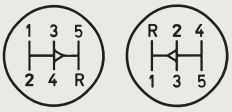
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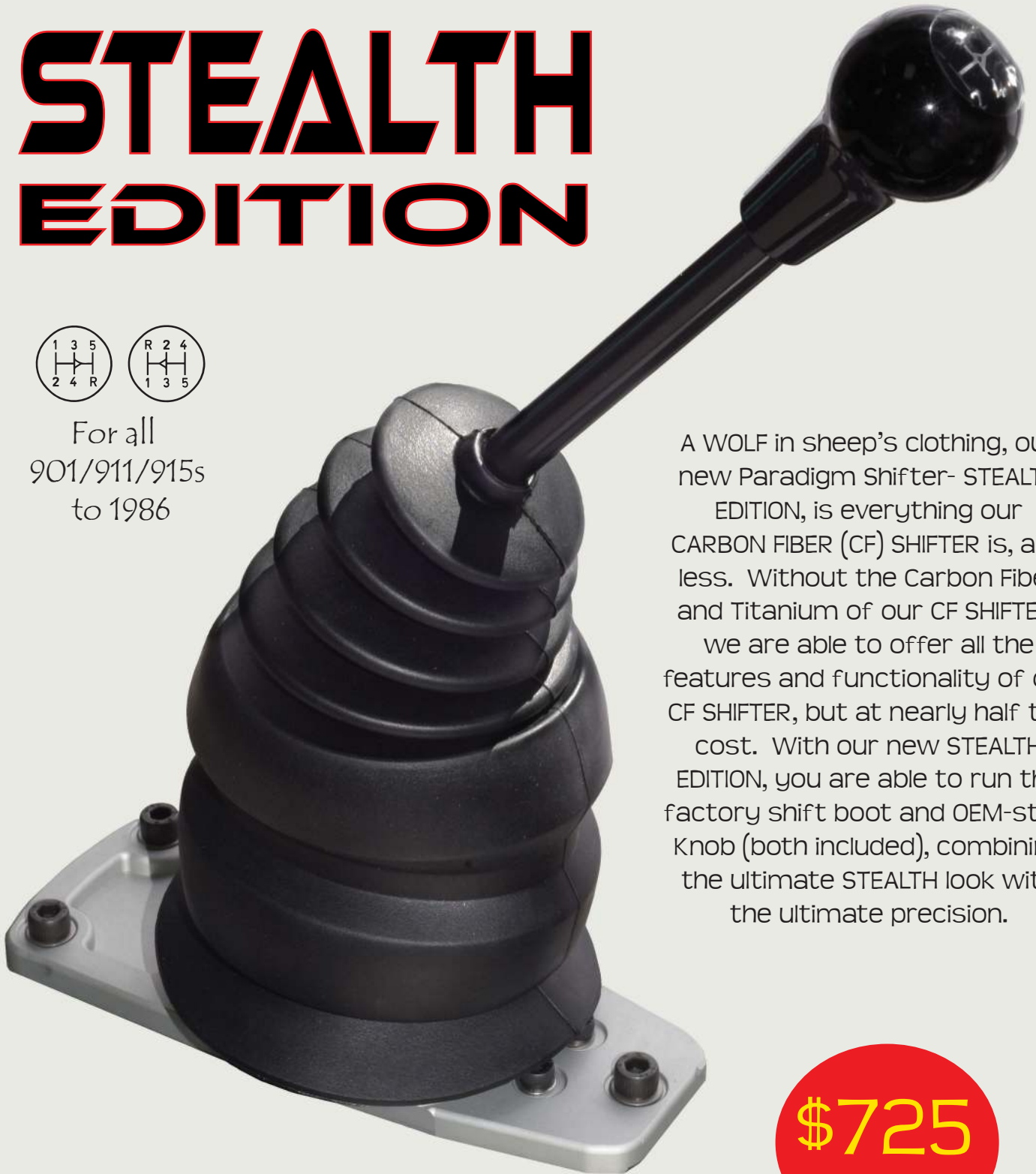
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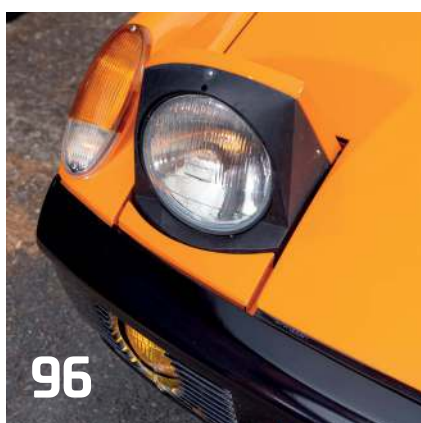
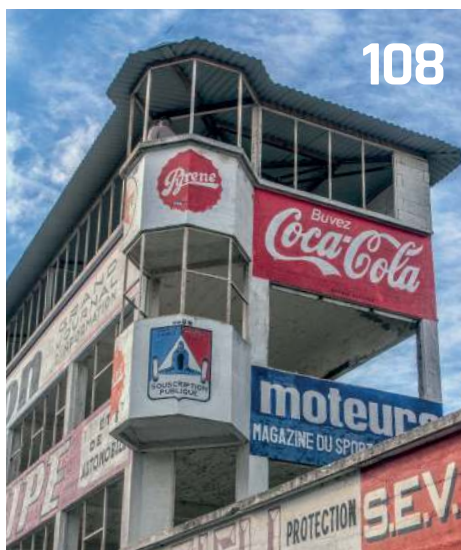
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# FORM AND SUBSTANCE



Please excuse the pun, but automotive technology is accelerating at rapid pace. In a world where car manufacturers are fighting over each other

to deliver ever leaner, ever greener four-wheeled machines, this constantly developing world of motoring progress is influencing the way cars look, as well as the way they're propelled. Irregular exercises in styling are becoming the norm, and though many brave design concepts are being developed, it's reassuring to know Porsche has an eye on its rich history as much as it's concerned with an all-electric future.

If you're one of the naysayers who thinks Porsche has disbanded its loyal base of enthusiasts, I urge you to take a look at the front end of the new Taycan. With no combustion engine to worry about, the company's designers, led by

former Mercedes and SAAB man, Michael Mauer, have been able to pay tribute to the 911 with a sloped bonnet ducking beneath torpedo-esque front wings. The rear end of the car is much more of a giveaway, with all new Porsches now adopting the same wide light bar made famous on the 992-generation 911, yet classic Porsche design cues are evident all over this ground-breaking new sports car. You just need to spend enough time looking for them.

In addition to mesmerising new Porsches, including the just announced Taycan 4S and Panamera 10 Years Edition, we've also been concerning ourselves with Porsche's classic output of late. Proof can found throughout this issue of *GT Porsche*, with air-cooled cars and transaxles in various states of tune presented for your enjoyment. I may have sneaked in a few photos from my recent road trip to Reims, too...



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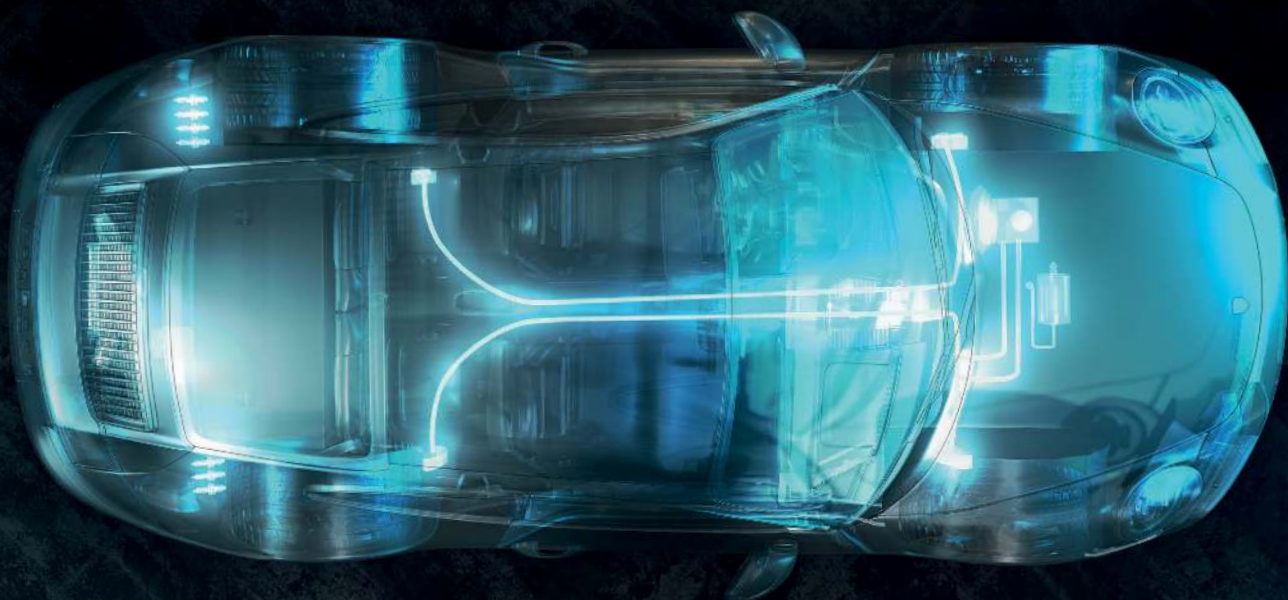
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**PORSCHE**



# REACH FOR THE SKY

This well-travelled 1967 911 S has been lovingly restored by the descendants of its one and only owner, a hero of South Africa's motorsport and aerobatics scenes...

Words **Johann Venter** and **Dan Furr** Photography **Michael Schmucker**

## ROLE MODELS

Porsche introduced the 911 S as its production car range-topper in 1967. The 911 T was also introduced during the same year, effectively replacing the 912 as Porsche's entry-level offering (prior to the arrival of the 914 in 1969). The standard 911 became the 911 L.









**J**acques Boulilliart was born in Trazegnies (a submunicipality of Courecelles, Belgium) in 1934. A happy child, his days of carefree fun were cut short when German forces occupied his homeland in 1940. His father's association with the *Armée belge des partisans*, a group of the Belgian resistance during World War II, saw the Boulilliarts go into hiding, not returning home until the close of conflict in 1945. Understandably, by the time Jacques reached his teens, memories of this threat to his family's security informed his desire to live life to the full, an outlook which resulted in a burning ambition to experience the finer things in life, both at work and at play.

While being employed part-time at a local Lancia garage during his high school years, Jacques made a promise to himself: to save enough money to buy a brand new car. In today's age of credit and finance deals, it might be difficult for the young to comprehend how much of a challenge he'd set himself, let alone the fact the object of his desire was a Porsche. As his thirty-fourth birthday drew near, however, he found himself grabbing the keys to a factory fresh 911 S. It'd taken a lot of hard work, time and determination, but the boy Boulilliart had come good on his word.

In 1967, seeing any 911 on the road was an event, but Jacques had bought himself extra exclusivity by taking ownership of the first 911 S sold in Belgium by Brussels-based Volkswagen agent, D'leteren. He'd worked his way into the jet set as a mechanical engineer for a global concern manufacturing industrial heaters and boilers.

The job enabled him to travel the world meeting clients and, so we're told, to regularly party with air hostesses! It was this fortunate position being able to spend time experiencing what various countries and cultures had to offer that enabled him to make an instant decision when his employers asked which of their new overseas outposts he'd like to manage. Given a choice of South America, Australia or South Africa, he immediately opted for the latter, not least because he'd visited no fewer than twenty-six times, favoured the country's temperate climate and had established a strong community of friends there. After accepting the job being offered to him, he made arrangements to have his trusty 911 shipped by boat, but not before his insatiable appetite for speed saw the pretty Porsche bounce across the cobblestones of central Brussels and take a swipe at a neighbouring wall with its rear end. Ouch.

## SPREAD YOUR WINGS

It's easy to see how time spent flying around the globe and high-octane action in a Porsche could combine to produce a keen interest in aerobatics, a pursuit Jacques became even more passionate about than playing with his 911. It was, therefore, amazing good fortune that when travelling to a holiday cottage he was renting from George Lindsay (a partner in South Africa's Volkswagen dealer network and former Porsche concessionaire, Lindsay Saker), the owner of the classic Mini Jacques was road racing in his Beetle turned out to be none other than champion aerobatic and air show pilot, Nick Turvey.







**Above** Structural damage required a custom jig to straighten the car before Wernher could begin with restoration work

Nick earned his wings in the South African Air Force in 1955 and went on to become Chief Instructor of the Johannesburg Light Plane Club. He was awarded Springbok Colours for his services to aerobatics in 1965 and, after he formed a firm friendship with Jacques, taught the Belgian how to barrel roll in the sky. The pairing proved so good, they went on to represent South Africa at the World Aerobatic Championships in Bilbao, Spain, with Nick flying solo (literally) to win the National Aerobatic Championships a staggering eight times.

With huge encouragement and 'tricks of the trade' being passed on from Nick, Jacques kept aerobatics as his primary passion for the next decade. He continued to use his repaired 911 S, but not cherishing it in the way he once did, the car was eventually retired from the road. Consequently, left exposed to the harsh Highveld climate, including substantial afternoon thunderstorms and hard winter frosts, the Porsche steadily deteriorated. Fast-forward to 1985, and things were about to change. "He rekindled his affection for the car," remembers Jacques' son, Anthony. "Unfortunately, by that time, the carburettors were full of water and the interior was in desperate need of disaster relief. The task of resurrecting the car was far greater than my father had anticipated, which is why, after much deliberation, he handed the poorly Porsche over to the experts at marque specialists, Carrera Motors, in Gauteng."

The motivation for breathing new life into the car was

the advent of gymkhana-style events being held by the Rosslyn contingent of Porsche Club of South Africa (PCSA). Hosted close to the BMW plant just outside Pretoria, these exciting contests provided the perfect excuse for Jacques to transfer his stunt skills from sky to asphalt. Carrera Motors head honcho, Frans Stangl, set to work completely rebuilding the car's engine, including a full strip and reassembly of the Weber 40IDS carburettors. A custom performance exhaust was installed to enhance the flat-six's breathing, while handling was sharpened through the appointment of thicker anti-roll bars and Bilstein dampers. "Our expectations were exceeded," Anthony gasps. "We couldn't believe how fast the car was. It was laying down circuit times quicker than some of the newer, more powerful Porsches in attendance. Carrera Motors did an excellent job."

His father's aerobatics-inspired precision behind the wheel was also a key contributor to strong results, leading to a steadily increasing amount of track time, initially with PCSA. "Competitors disparagingly referred to the car as 'Granny' because of its age, but they were soon silenced when it beat their more modern machines to the finish line!" Anthony laughs. Appearances in numerous historic tournaments and the 1991 Porsche Challenge at Midvaal Raceway followed, as did a haul of silverware. Jacques has been well and truly bitten by the bug.

**Facing page**  
Narrower wheels and tyres have been fitted below arches sourced from a donor 912





His infectious enthusiasm for racing was passed on to Anthony and his sister, Natalie, who both served as pit crew for the Porsche before trying their hand at track action themselves – Natalie competed in the Volkswagen GTI Challenge, Anthony used the Boullilliant clan's acquired Group N Opel Kadett to be crowned Class E Rookie of the Year. "Those were wonderful times," he smiles. "We'd have up to four cars at the track, hopping between each of them. We became very close, not only as teammates, but as the best of friends."

Later, the Boullilliants upped the ante by competing in Class B with a Nissan Sabres, but the Japanese joy toy didn't distract Jacques from continuing to achieve phenomenal success with the 911. "In both 1994 and 1995, he won the triple crown of the PCSA race series championship, the Porsche Challenge and the Historics Championship," Anthony recalls. These accolades made Boullilliant Sr South Africa's oldest motorsport champion, reward compelling him to transform a 911 T into an RSR replica with the assistance of the late Paddy O'Sullivan, co-owner of South African race car preparation specialist, Mosport. Paddy and his brother, Mike, became well-known for campaigning a V8-powered Rover SD1 in various endurance championships during the 1980s, and were perfectly placed to source desirable motorsport componentry for the Boullilliant build; among other equipment, the T-badged coupe benefited from the fuel system of a retired Carrera RSR 2.8.

Unfortunately, Jacques was involved in a serious accident when travelling to Mosport in order to have final tweaks applied to the car in readiness for racing. "He was never the same after the incident," Anthony sighs. "He moved us to a quiet farm in Grabouw on the Western Cape. Then, shortly after his seventieth birthday in 2004, whilst navigating his way along the treacherous mountainside route of Sir Lowry's Pass in a Jaguar Super V8, we think the car suffered a blowout taking a right-hand bend. The Jag collided with a Ford pick-up coming down the pass." A few days later, Jacques passed away as a result of serious injuries sustained during the crash.

## FLYING HIGH

Such was the impact Anthony's father made on the South African racing community, PCSA named a trophy after him. A well-attended PCSA tribute event held in Kyalami also confirmed his status as a popular fixture of his adopted homeland's Porsche scene, but where did this leave the 911 S he'd bought back in Belgium all those years ago? "We almost sold it," Anthony confirms. "It led a hard life on the track and ended up a mish-mash of 911s, with replacement bumpers and wings taken from random donor cars as repair panels. In our defence, Natalie and I attempted to turn the tired Porsche into a usable road car, but the project never worked out." Enter Wernher Hartzenberg, owner of boutique classic Porsche restoration specialist, Aircooled Wonders. "He

**Above** Anthony and Wernher take a step back to admire the quality of this very special build

**Facing page**  
Original steering wheel, complete with worn rim courtesy of Jacques' love of spirited driving, takes pride of place in the otherwise retrimmed interior





met with Natalie in 2015 when the two were drawing up a list of the 356s residing in Cape Town. He was interested in Natalie's late 356 drop-top and, during the course of conversation, she told him we were struggling to find a solution for the restoration of our father's 911 S."

"My team's philosophy is to treat every Porsche as though it was one of our own," Wernher tells us. "Each Aircooled Wonders restoration is a true labour of love." And what of the condition of the 911 presented by the Boullilliarts? "It was bad. The car had been battered at the track and had a major coming together with the pit wall at Zwartkops Raceway in 1993. There was structural damage to contend with, but we made a jig to straighten everything out, acquired new body panels and sourced a new nose."

As a competitive race car, the S had been retro-fitted with many fibreglass components, while the engine lid was from a later 911. "Of all the panels we looked at, only the doors seemed to be original," says Wernher. "At some stage, the quarters had been altered to accept wider wheels. With these concerns taken into consideration, we decided to source a donor car, which was a challenge in itself!" An early 912 gave up the ghost, providing its fenders to the cause, although it's worth noting Wernher and his technicians tried to retain and refurbish as much of the original equipment left on the car as they could. "This definitely isn't a concours restoration," he stresses, "largely because we've tried to keep as much of the car's hard-earned character as possible. For example, other than the windscreen,

we kept all original glass, which still wears the many stickers acquired over the decades. I don't believe in over-restoring. This is one of the reasons we left the retro-fitted manual-crank sunroof and the steering wheel as we found it. Its faded leather rim is directly attributable to Jacques. Keeping this wear means he continues to be a part of the Porsche, even though he's not around to drive it anymore."

To keep costs down, parts were sourced locally. A case in point is the front suspension, removed from another donor car. Completely refurbished, the setup now comprises 930 tie rod ends. Some of the restoration work was farmed out to other experts within the Porsche fraternity – Brian White, the man responsible for managing the Ernst Schuster team and the 356 C it raced to sixth overall at the 1986 24 Hours of Le Mans, took care of a fresh engine build. "The flat-six had been increased in displacement to 2.8 litres," Wernher continues. "Brian took it back down to a two-litre unit by fitting internals matching original specification. The cylinder head and crankcase were machined accordingly, while the wiring harness was painstakingly rebuilt by PCSA Concours winner, Johann Pienaar. Dave Corlett, a former aircraft trimmer and owner of Soft Top Specialists in Buccleuch, refurbished the interior. Many other experienced Porscheophiles offered their time and advice along the way."

These unsung heroes include air-cooled Porsche restoration expert, Tim Abbot of Kyalami's Porsche Master Craftsman, Anton Decker of fabrication firm,





Exclusive Conversions, and Wikus Rust of RSR specialist and Porsche racing outfit, R&D Motorsport. "There's an old African saying," Wernher smiles. *"It takes a village to raise a child."* Myself and my trusted technician, Petrus Skonsana, are thrilled with how everyone came together to restore this special 911 S for the Bouliliarts. For those of us at Aircooled Wonders, being involved with this project has been a privilege."

We join Anthony and his sons, Sebastian and Oliver, at the unveiling of the completed car. "The boys didn't get to meet their grandfather," he reflects. "His restored 911, however, goes some way toward providing them with an understanding of what the man was all about." The cover is pulled off the blue beauty and everyone is amazed at the transformation. Anthony won't get to drive the car just yet, though – Wernher wants to dyno test the engine after controlled run-in. Instead, we take it in turns to enjoy passenger rides.

## LEAVE THE NEST

Struck by the finesse of this early S, we meander our way through the suburbs of northern Pretoria towards the nearest freeway. The revitalised Porsche nimbly threads through streams of cars twice its size. We

hit the wider, faster roads and Wernher depresses the accelerator, quickening our pace to the legal speed limit of 120km/h. A tight hairpin approaches, the cogs swap to break our pace and, once into the tight left-hander, we take off again, the skinny rear rubber biting into the asphalt just enough to keep the back end from coming undone. With sights level, 4,000rpm is gradually reached. "No further," snaps Wernher. "Remember, we need to treat the mechanical components sympathetically during run-in." Not that he's expecting ballistic power from the car at the point it's ready to be driven in anger. "The gear ratios were shorted for track work. As such, they're holding back the reins, which is especially noticeable on the freeway. The car is definitely far tamer now than it used to be. It's more of a weekend cruiser than a track attacker."

Despite a difficult past, this brilliant blue 911 S has been thoroughly rebuilt to mirror as much original specification as possible without removing too many of the custom features Jacques introduced over the years. The special Porsche he bought more than five decades ago is, once again, a completely usable street car, allowing it to be enjoyed by his children and grandchildren. May they do so long into the future.

**Below** Tamer than when it was being beaten around South African race circuits, the Bouliliart build looks as good as it did when new

## PICK UP THE PACE

A short while after the 911 E joined Porsche's product range, the engines of all 911s were upped from 1,991cc to 2,195cc, with power increasing accordingly. Surprisingly, considering the E's lower output, road tests from the era gave it the edge when accelerating to 99mph alongside the S.





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# TAYCAN 4S JOINS ALL-ELECTRIC LINE-UP

Most efficient variant of battery-powered sports car now available to order





**R**evealed to the world in September, the four-door, four-wheel drive, all-electric Taycan is the first battery-powered Porsche sports car and is scheduled to land in UK showrooms in January. Following the launch of Taycan Turbo and Turbo S variants, the Taycan 4S is now ready to slot beneath both new cars in Taycan model hierarchy.

Rated at up to 530hp on overboost, output can be can be ramped up to 571hp if the Performance Battery Plus package is optioned. In both guises, the 4S accelerates from a standing start to 62mph in just four seconds, topping out at a limited 155mph. Range is an impressive 252 miles on the standard battery, with an extra thirty-five miles possible with Performance Battery Plus, making the 4S the most efficient Taycan of the models already announced.

When compared against the Taycan Turbo and Turbo S, the 4S's distinguishing features include aerodynamically optimised nineteen-inch Taycan S Aero wheels and red-painted brake calipers. A newly designed front apron, side skirts and rear diffuser in black ensure further visual differentiation. LED headlights, including Porsche Dynamic Light System Plus (PDLS+), are equipped as standard.

The Taycan 4S comes with front comfort seats equipped with eight-way electrical adjustment. Although half-leather trim is listed as standard equipment, Porsche is offering an entirely leather-free interior for the first time. Made from innovative recycled materials, the option underscores the manufacturer's determination to be the torch bearer for the concept of sustainable electric sports cars.

## STOPPING POWER

Six-piston calipers with 360mm vented discs sit at the front of the car, while four-piston calipers loaded with 358mm discs reside at the rear. It's a hefty setup, but one that's needed to slow the car swiftly from its rapid pace. Additionally, as standard, the Taycan 4S features adaptive air suspension with three-chamber technology, including Porsche Active Suspension Management (PASM) electronic damper control.

Keeping the chassis in check is an integrated Porsche 4D Chassis Control system, analysing and synchronising all working components in real time. The cockpit also signals the start of a new era of Porsche production with its clear structure and completely new architecture. The free-



**Above and facing page** Alignment with 911 styling cues is clear to see at both ends of the all-electric Taycan

standing, curved instrument cluster forms the highest point on the dashboard. This places clear focus in the driver's eyeline. A central 10.9-inch infotainment display and an optional passenger display are combined to form an integrated glass band in a piano black dash panel.

With an aerodynamic drag Cd value of just 0.22, the low air resistance of the 4S's body design makes a significant contribution to low energy consumption and the model's long range, but with two permanently excited synchronous electric motors on the front and rear axles (300 amp and 600 amp respectively) delivering all-wheel drive, plus a two-speed transmission on the rear axle, the overall drive architecture of the Taycan 4S offers the same main technical highlights as Turbo-badged models in the range.

The 4S is priced from £83,367 and is available to order from Official Porsche Centres. First customer deliveries are anticipated from January. Included in the price is three years' access to the IONITY charging network and the Porsche Charging Service, allowing roaming access to a network of different charge point operators. Electrical consumption will be billed via invoice to the owner's My Porsche account.

**Below** Three years' access to IONITY is included in the 4S purchase price







# CARRERA CUP GB 2020 CALENDAR ANNOUNCED

Big prize money and new young driver initiative launched

**T**he UK's fastest single-marque GT racing championship, Carrera Cup GB, will reinforce its position in the fabric of national motorsport in 2020 with a high-profile calendar, generous prize fund and a continued commitment to providing GT racing drivers with the best arena to showcase their skills, whether racing as a professional or doing so for pleasure.

Carrera Cup GB will enter next season sitting atop a refreshed domestic version of the Porsche Motorsport Pyramid, underpinned by the introduction of new, feeder race series (Porsche Classic Boxster Cup and Porsche Sprint Challenge GB) to the country's racing portfolio.

Once again, Carrera Cup GB will join the prestigious British Touring Car Championship calendar over a series of eight weekends, each televised live on ITV4. Porsche drivers and teams will be competing for an

unchanged prize fund, including £40,000 – one of UK motorsport's single largest prizes – for the season's overall champion.

At the core of Porsche's commitment to customer motorsport and racing driver development for more than twenty years, the Porsche Motorsport Pyramid has an unrivalled record in nurturing track talent and assisting generations of drivers to progress through Porsche ranks to the highest levels of international GT motorsport. With the aim of further developing the proven role of the Carrera Cup network in helping young racers follow in the footsteps of Porsche factory drivers, such as Le Mans winners, Nick Tandy and Timo Bernhard, Carrera Cup GB will introduce a Young Driver Development Programme for 2020.

An evolution of the Rookie category, and drawing on key elements of the successful Porsche GB Junior Programme, eligible drivers will compete for a generous



£55,000 prize fund. In addition, an exclusive wristwatch will be on offer for the driver accumulating the highest number of fastest laps. Drivers eligible for the Young Driver Development Programme will need to be under twenty-five years of age on 1<sup>st</sup> March 2020, and to have competed in any Carrera Cup for no more than two rounds. As is the case with the Rookie category in its current guise, drivers can be from any of the three core categories: Pro, Pro-Am or Am.

Carrera Cup GB 2020 will race exclusively on BTCC weekends in 2020: Donington (28-29 March), Brands Hatch Indy (11-12 April), Thruxton (16-17 May), Oulton Park (13-14 June), Snetterton (25-26 July), Knockhill (29-30 August), Silverstone (26-27 September) and Brands Hatch GP (10-11 October). For further information, visit [porsche.co.uk/carreracupgb](https://porsche.co.uk/carreracupgb)







## CAYENNE SET TO STAR IN NEW MIKE BREWER SERIES

Deepak is a hard-working police officer with two young mouths to feed. He dreams of owning a sports car, but lives in the real world. Luckily, *Wheeler Dealers* cheeky chappy, Mike Brewer, has the solution in the form of a Cayenne, offering all the practicality of a people carrier, but with the thrill of Porsche ownership. There's only one problem: Deepak can't afford a Cayenne. Follow the story on Discovery's new TV series, *Wheeler Dealers: Dream Car*, when Mike 'trades up' Deepak's Nissan Juke for "the cheapest Cayenne in the country", which, truth be told, sounds like a car capable of bankrupting poor ol' Deepak, especially when "things don't go according to plan". Co-presented by former F1 mechanic, Marc 'Elvis' Priestley, Brewer's new show airs exclusively on Discovery from 9pm, Monday 6<sup>th</sup> January.

## PORSCHE CLUB GB RETURNS TO BICESTER FOR XMAS

Make sure you mark Sunday 8<sup>th</sup> December in your diary, for that's when Porsche Club GB returns to Bicester Heritage for the club's end-of-year Christmas celebration, marking the second time the annual gathering will be held at the former Royal Air Force base. Chosen to ensure as many Porsche Club GB members as possible have the opportunity to attend, the site will offer prominent parking for club members, plus a series of special displays and freshly served coffee and tea. The event is free to visit and, following the overwhelming number of donations received at the 2018 event, punters are encouraged to bring items for the local foodbank. This is a fantastic chance for Porsche enthusiasts to get together before the year comes to a close, with hundreds of cars expected to descend upon the Oxfordshire classic car hub.



# SPECIAL EDITION 971 PANAMERA MARKS TEN YEARS

Celebrating a decade of success with lashings of luxury

**P**orsche is celebrating the tenth anniversary of the Panamera line with a special edition. The new Panamera 10 Years Edition (a name which, surely, must have been the product of the world's shortest-lived focus group) features extensive standard equipment, with extra focus in the cabin and around the chassis, both enhanced with exclusive design highlights.

For example, new 21-inch Panamera Sport Design wheels are presented in satin-gloss White Gold Metallic, as are *Panamera 10* motifs on the front doors. The same logo can be found on the front passenger trim panel and on the sill kick plates. The model's interior is designed in black partial leather, with decorative stitching finished in (yep, you guessed it) White Gold.

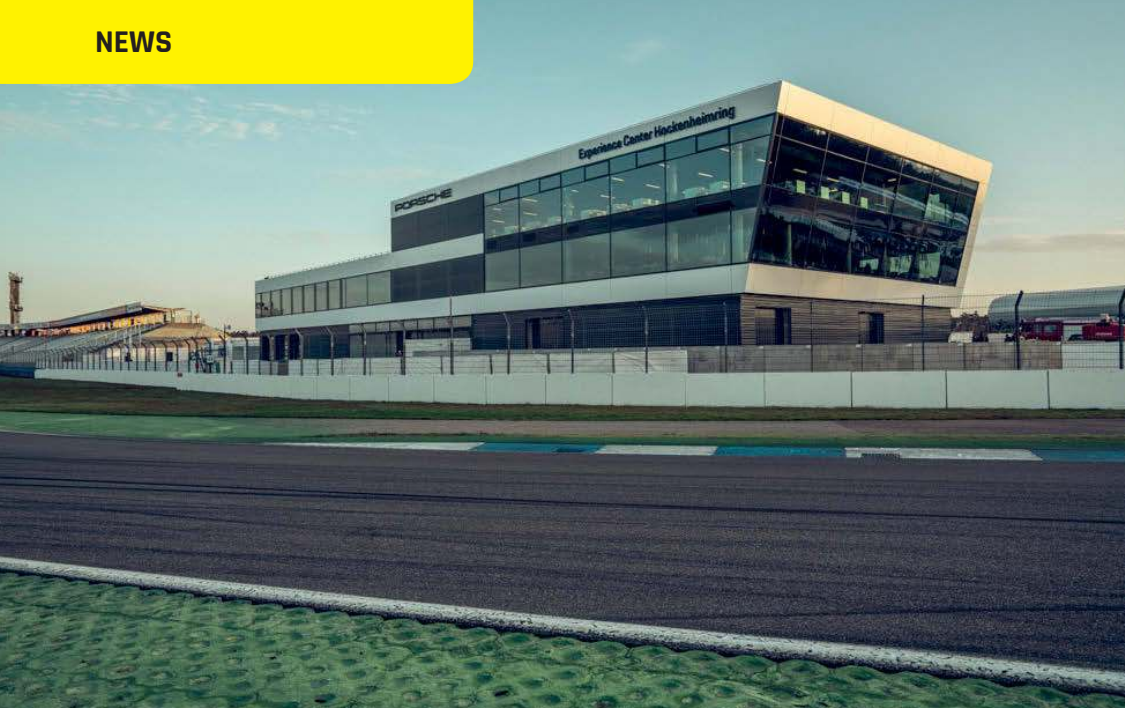
The Panamera 10 Years Edition is more of a heavily loaded trim option than anything else – beneath the pretty detailing is either a Panamera 4 or Panamera 4 E-Hybrid, in either standard or Sport Turismo body styles.

A host of additional comfort and safety features are included as standard, though. LED matrix headlights (including PDLS Plus), Lane Change Assist and Lane Keeping Assist – with traffic sign recognition and Park Assist, including reversing camera – are part of the package, as are a panoramic roof system, privacy glass, heated fourteen-way comfort seats with Porsche crest on the head restraints, soft-close doors and a BOSE Surround Sound system.

With Porsche's adaptive three-chamber air suspension, including Porsche Active Suspension Management (PASM) and Power Steering Plus as standard, a *Panamera 10* in any guise promises outstanding driving dynamics, but the real boon comes for buyers who opt for a 10 Years Edition E-Hybrid – an on-board charger with a charging capacity of 7.2 kW (instead of the otherwise standard 3.6 kW) is fitted as standard kit.

Panamera 4 versions are already available to buy, with order books opening for the 4 E-Hybrid models in the coming weeks.





# NEW EXPERIENCE CENTRE OPENS AT HOCKENHEIMRING

Stuttgart brand makes its mark on legendary German Grand Prix venue

**P**orsche has opened its seventh Porsche Experience Centre (PEC) with the launch of PEC Hockenheimring. Situated at the heart of the famous racing circuit, Porsche's new facility covers a 170,000m<sup>2</sup> and includes a handling course, driving dynamics areas and an off-road track. Around 70,000 visitors attended the launch, which took place mid-October as part of the highly anticipated Sportscar Together Day festival.

An estimated nine thousand Porsches were in attendance, a number far exceeding what organisers had been anticipating, although the venue's close proximity to Zuffenhausen makes the Stuttgart

brand's new site an obvious 'home from home'. "The location is very appealing," remarked Alexander Pollich, CEO at Porsche Deutschland. "Customers and enthusiasts can test our cars on challenging on-track and off-road courses, or they can kick back and enjoy the outstanding, direct view of the race track from this new Porsche Experience Centre's superb restaurant," he told us.

Porsche Experience Centre Hockenheimring offers its visitors challenging driving experiences in highly professional conditions. Customers can experience the most recent Porsche models with support from experienced instructors, choosing between passenger rides or taking control of the wheel as part of an individual

coaching session. A 1.73-mile handling course has been created to help brand enthusiasts explore different Porsche driving modes around challenging corners and along super-long straights. There are also areas dedicated to mastering kick plates and roundabouts.

The off-road track enables customers to test the capabilities of the Cayenne and Macan SUVs on a course covering 5,200m<sup>2</sup> and featuring a total of seventeen different routes, each varying in difficulty. The site also features a Porsche Selection Shop, a café, workshops and 800m<sup>2</sup> of exhibition space. High-power charging infrastructure for electric cars is a given, with Taycan testing expected in the coming months.



## FINAL PREPARATION FOR FORMULA E

The countdown has started: not long after this magazine hits newsstands, the TAG Heuer Porsche Formula E Team will contest its maiden race in the ABB FIA Formula E Championship in Diriyah, Saudi Arabia. While the main focus in the initial phase of testing was on the reliability of the 99X Porsche powertrain, the works team increasingly focused on performance. "With over 5,000 test kilometres, we gained important insights into the 99X race car," explained Malte Huneke, Technical Project Leader for Porsche Formula E. "The learning curve is rising steadily. In Weissach, we're currently analysing all the data we collected during the final days of testing at Valencia. We were able to come away with valuable information, especially from race simulations." Follow the team on Twitter at [@porscheformulae](https://twitter.com/porscheformulae)





# THE ULTIMATE IN PERFORMANCE UPGRADES AT DMS AUTOMOTIVE WE'VE BEEN UNLEASHING AUTOMOTIVE PERFORMANCE FOR OVER 20 YEARS



**DMS F10 M5 (EVO DEC '15)** "730BHP, 200MPH+ TYRE-SHREDDING MONSTER"

**DMS MCLAREN 650S (EVO OCT '15)** "REAL MUSCULARITY AND THE STRENGTH OF THE MID-RANGE IS STAGGERING"

**DMS M2 (EVO SEPT '15)** "MORE POWER DOES MEAN MORE FUN"

**DMS 1M (EVO MARCH '12)** "THERE'S A REAL RIP TO THE WAY THE REVS PILE ON ABOVE 4000RPM"

**DMS 997 TURBO 3.8 PDK (EVO JUNE '11)** "DELIVERY IS ALMOST UNCOMFORTABLY FORCEFUL"

**DMS SL65 BLACK SERIES (EVO OCT '10)** "IT FEELS LIKE THE LOVE CHILD OF AN SL65 AND A PORSCHE GT2"

**DMS 135i (BMW CAR MAY '09)** THE STANDARD CAR IS GREAT BUT DMS HAVE SOMEHOW MANAGED TO TAKE IT TO THE NEXT LEVEL"

**DMS 997 TURBO 3.6 (EVO SEPT '08)** "IT'S EPIC, HILARIOUS AND ADDICTIVE IN EVERY GEAR, YET DOCILE WHEN CRUISING"

## BELOW IS A SMALL SELECTION OF OUR MORE POPULAR UPGRADES:

### AUDI

RS6 4.0 T V8 » 700+BHP (+DE-LIMIT)  
RS6 V10 » 680+BHP (+DE-LIMIT)  
2017 R8 V10 » 650BHP (+DE-LIMIT)  
R8 V10 » 592+BHP (+DE-LIMIT)  
RS4/RS5 » 488+ BHP (+DE-LIMIT)  
RS3/TTRS » 420+ BHP (+DE-LIMIT)  
RS3/TTRS (NEW) » 480+ BHP (+DE-LIMIT)  
S3 / GOLF R » 375+ BHP (+DE-LIMIT)  
3.0TDI (ALL MODELS) » 315+ BHP  
3.0 BI-TDI (ALL MODELS) » 380+ BHP  
Q7/A8 4.2 TDI » 400+ BHP

### BMW

M2 » 435BHP (+DE-LIMIT)  
M3/M4 » 540+BHP (+DE-LIMIT)  
M5/M6 » 730+BHP (+DE-LIMIT)  
X5M/X6M » 730+BHP (+DE-LIMIT)  
X5M50D/X6M50D » 450BHP  
M135i/M235i » 410+BHP  
i8 » 415BHP  
120i/220i/320i/420i » 275+BHP  
116D/216D/316D » 160BHP  
118D/218D/318D » 225BHP  
120D/220D/320D/420D » 240BHP  
328i/428i » 295BHP  
335i/435i » 410+BHP  
330D/430D/530D/730D » 360BHP  
335D/435D/535D » 395+BHP  
550i/650i » 555+BHP (+DE-LIMIT)  
640D/740D » 395BHP (+DE-LIMIT)  
X530D/X630D » 360BHP  
X540D/X640D » 395BHP

### MERCEDES-BENZ

A45/CLA45 AMG » 420+BHP  
AMG GT/GTS » 560BHP (+DE-LIMIT)  
C43/E43/GLC43 AMG » 455BHP  
C63/63S 4.0T AMG » 620+BHP  
C63 6.3 AMG » 530+BHP  
500 4.7 BITURBO (ALL MODELS) » 498+BHP  
63 AMG 5.5 BITURBO (ALL MODELS) » 700+BHP  
55 AMG KOMPRESSOR » 600+BHP  
(+DE-LIMIT & SUSPENSION LOWERING)  
S65 » 780BHP (+DE-LIMIT)  
SL65 AMG » 690BHP (+DE-LIMIT)  
SL65 BLACK » 720BHP (+DE-LIMIT)  
SLK 55 AMG » 420BHP  
200 CDI (ALL MODELS) » 173BHP  
220 CDI (ALL MODELS) » 230BHP  
250 CDI (ALL MODELS) » 260BHP  
C300 HYBRID » 285BHP  
C300E » 350BHP  
C400/E400 » 400BHP  
350 CDI (ALL MODELS) » 315BHP  
420/450 CDI (ALL MODELS) » 358BHP

### ALL 2017 RANGE ROVERS AVAILABLE

RR 50SC/SVO/SVR STAGE1 » 600+BHP  
RR 50SC/SVO/SVR STAGE2 » 650+BHP  
2.0/2.2 DIESEL (ALL MODELS) » 220+BHP  
RR 4.4 TDV8 » 395 BHP  
RR TDV6 3.0D » 305+ BHP  
RR SDV6 3.0D » 350+BHP  
DEFENDER 2.2 » 180BHP

### PORSCHE

996 TURBO/GT2 » 600+ BHP  
997 TURBO 3.6 » 625+ BHP  
997 GT2 RS » 670+ BHP  
997 TURBO/S 3.8 INC PDK » 611 BHP  
997 GT3 RS » 480 BHP  
991.2 GT2 RS » CALL  
991 TURBO/S (ALL MODELS) » 750+BHP  
991 GT3 3.8 (ALL MODELS) » 490+BHP  
991 GT3 RS 4.0 (ALL MODELS) » 525+BHP  
997 CARRERA S » 376+ BHP  
997 CARRERA PDK » 368 BHP  
997 CARRERA S PDK » 400+ BHP  
997 CARRERA GTS » 435 BHP  
991 CARRERA (ALL MODELS) » 500+BHP  
991 CARRERA S (ALL MODELS) » 500+BHP  
991 CARRERA GTS (ALL MODELS) » 540+BHP  
BOXSTER/CAYMAN 718 GTS » 420+BHP  
BOXSTER/CAYMAN 718 S » 420+BHP  
BOXSTER/CAYMAN 718 » 380+BHP  
BOXSTER/CAYMAN 981 GT4 » 430+BHP  
BOXSTER/CAYMAN 981 GTS » 375+BHP  
BOXSTER/CAYMAN 981 S » 345+BHP  
CAYENNE GTS » 450 BHP  
CAYENNE TURBO 4.5 » 565+ BHP  
CAYENNE TURBO 4.8 (ALL MODELS) » 650+ BHP  
CAYENNE TURBO S 4.8 (ALL MODELS) » 650+ BHP  
CAYENNE 4.2 DIESEL » 450+ BHP  
CAYENNE 3.0 DIESEL » 318+ BHP  
MACAN S » 420+BHP  
MACAN GTS » 440+BHP

MACAN TURBO (ALL MODELS) » 480+BHP  
MACAN S DIESEL » 318+BHP  
PANAMERA TURBO » 600+ BHP  
PANAMERA DIESEL » 305+ BHP

### EXOTIC / MISC

FERRARI CALI T » 660BHP  
FERRARI F12 » 780+BHP  
FERRARI 599 » 647 BHP  
FERRARI 488 » 750+BHP  
FERRARI 430 » 525 BHP  
MCLAREN MP4-12C » 700 BHP  
MCLAREN 650S » 720 BHP  
MCLAREN 675LT » 750BHP  
MCLAREN 570S » 680+BHP  
AVENTADOR » 750+BHP  
HURACAN LP610 » 650BHP  
GALLARDO LP560 » 600+BHP  
BENTLEY 4.0 T V8 » 700BHP  
BENTLEY GT/F-SPUR » 680BHP  
GT SPEED / SUPERSPORT » 690+BHP  
BENTAYGA W12 » 700+BHP  
MASERATI Ghibli 3.0S PETROL » 470 BHP  
MASERATI Ghibli 3.0 DIESEL » 312 BHP  
MASERATI GT/QPORT » 438 BHP  
MASERATI GT S / MC » 479+ BHP



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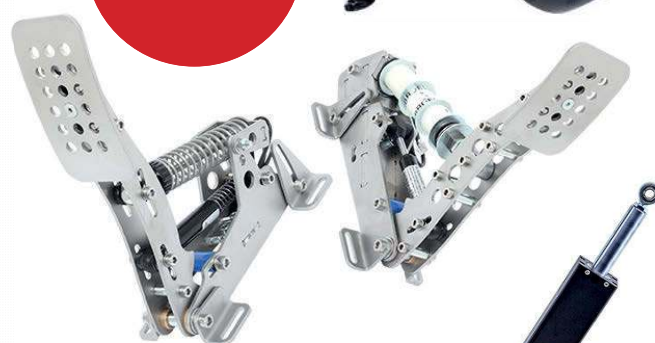
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## PORSCHE PRODUCTS

Each month, we present exciting parts and services designed to benefit you and your four-wheeled friend. From audio to engine upgrades, we've got you covered.

## RED HOT PRODUCT



# TRACKTIME 3MOTION ADVANCED MOTORSPORT RACING SIMULATOR

eSports is big business, with surveys concluding more people are now watching eRacing tournaments than real-world motorsport. Multi-player gaming, massive spend from software producers profiling the world's most famous circuits in the finest of detail (we're talking every bump and undulation), heavily promoted series developed and supported by key car manufacturers (including Porsche), big cash prizes for winners of competitions and the lack of spend on an actual race car make it easy to see the appeal, and that's before you find yourself scrubbing virtual bumpers with world champion drivers using eRacing platforms for practice and track familiarisation.

While most sim racers are making use of rigs built around the same seats, pedals and steering wheels found in a real race car, they lack the feel of lateral forces shifting weight from side to side. Even with a VR headset, the 'feel' of being in a real race car

is limited by the lack of movement outside of driver input. Away from the home environment, today's professional racing simulators are supremely realistic, with advanced multi-axis systems emulating the driving physics of a real race car through a series of hydraulic jacks and actuators, but how does a serious eRacing enthusiast transfer world-class simulator technology into his or her spare bedroom without breaking the bank?

Sim racing specialist, Tracktime, may have the answer. The company is trying to make high-end eRacing even more affordable with the introduction of its 3Motion Advanced Racing Simulator. Plug, play and ready to race, the stable tubular frame houses a Sparco Grid Q racing seat and adjustable brackets for the Ascher Racing Button Box steering wheel and eSport Sprint 2 Heusinkveld pedals (equipped with Loadcell sensors). SilentForce actuators offer realistic

simulation of track conditions, while 5.1 surround blaring through Logitech Z506 speakers takes care of the soundtrack. There's a 43-inch curved monitor and Lenovo Think Station P330 with Intel i5-8500 CPU, Windows 10 Pro, 16GB RAM, 512GB SSD and NVIDIA RTX2070 GPU included as part of the package, too. Most options (e.g. monitor size) are configurable at the point of purchase.

The price isn't what most of us would call cheap, but when you consider the amount of equipment you're getting for your one-time spend, not to mention the convenience of Tracktime's offering being supplied ready to race, providing immediate improvements to your eRacing lap times (which, in turn, may result in wins netting you prize money), there's a lot of sense in what's being pitched here.

**Price £13,786**

[track-time.de](http://track-time.de) or call +49 7971 963180





### ▲ **DANSK SPORTS SILENCER FOR 986 BOXSTER**

Manufactured from high quality 304/4301 stainless steel and providing the host 986 Boxster with an OEM+ finish by way of the included bolt-on Super Sound tailpipes, this direct-fit replacement rear silencer from Dansk promises a deeper exhaust note, improved throttle response and a hike in horsepower through the system's derestricted pipework. Made to suit 2.5, 2.7 and 3.2 986 Boxsters (2.5 models will require an optional fitting kit) and supplied with full TUV/EEC approval, this super silencer is a brilliant addition to any standard 986, but will perform even better as part of a wider range of performance enhancing mechanical and ECU upgrades. Visit the Parr website and place your order today.

**Price** £888

**parr-uk.co.uk** or call 01293 537911

### ● **WEBCON 70MM MESH AIR FILTERS**

To complement its reintroduced 56mm and 63mm mesh air filters, Webcon has announced details of a 70mm addition to the range. Manufactured in the UK and featuring the company's impressive three-layer mesh technology, these new, larger filters are suitable for Weber 48DCO/SP and 48IDA carburettors, as well most other 70mm airhorns. Recognised by part number AFM4870, the filters are sold in pairs and offer excellent filtration with the minimum of restriction. Simple to fit, they'll prevent the ingress of debris when your classic Porsche is being worked on, driven or stored.

**Price** £43.14

**webcon.co.uk** or call 019312 787100



### ▲ **GARBO STUDIO 917 ART PRINT**

Taken from the extraordinary graphic novel, *Steve McQueen in Le Mans*, by Swiss comic book artist, Sandro Garbo, and depicting the no.20 Gulf 917 airborne at Sarthe (as seen in the legendary actor's seminal racing movie), this 100x50cm presentation poster is printed full colour on 250g/m2 luxury satin artboard and makes the perfect wall decoration for any Porscheophile's home studio or workshop. The piece features a white border with a Garbo Studio watermark and is part of a collection of standalone frames from the book, which can be ordered in English or French language editions alongside acrylic prints on plexi and textured paper prints.

**Price** €59.95

**mcqueenlemans.com**

### ▼ **JL AUDIO C2-650X SPEAKERS**

JL Audio's Evolution C2 speaker systems deliver sparkling high-frequency detail, smooth midrange and powerful mid-bass thanks to real silk dome tweeters and precision engineered woofer designs. C2-650X speakers (sold as a pair) feature 6.5-inch (165mm) woofers with mineral-filled polypropylene cones, long excursion capabilities and stamped steel frames. The woofer design benefits from JL Audio's advanced modelling systems, ensuring a direct fit in most vehicles. Multiple mounting patterns are provided on the woofer frame for easy installation, while tweeters are coaxially mounted and built with 0.75-inch silk dome diaphragms delivering smooth, extended response, on and off axis. The small size of the C2 tweeter minimises protrusion, allowing C2 coaxials to fit behind most factory speaker grilles, although JL-branded grilles are included as an option, each consisting of a black tray with satin silver accents and a black steel mesh grille with an electroformed JL Audio logo.

**Price** £179.99

**jlaudio.co.uk** or call 01202 664390





## ► FIDANZA LIGHTWEIGHT FLYWHEEL FOR CLASSIC 911

This bespoke lightweight flywheel for 911s (2.2, 2.4 and 2.7, 1970-1977) from performance parts manufacturer, Fidanza, is made from the highest quality 6061 T6 aluminium for superb tensile strength, incredible heat dissipation and, of course, a huge reduction in weight. Delivering faster acceleration through the rev range, quicker throttle response, better braking and increased clutch efficiency, this fantastic flywheel can mate with many types of clutch material, including organic Kevlar, ceramic, metallic and sintered iron. The durable, long-lasting friction surface area (highlighted green) is replaceable, meaning you'll never have to resurface or replace your 911's flywheel ever again. Improved performance and money saved? What's not to love?! Enter promo code FIDANZA when ordering direct from the company's website and enjoy a huge twenty percent discount on us. You're welcome!

**Price** £418.37

[fidanza.com](http://fidanza.com) or call +1 440 259 5656



## TITAN 7 T-S5 FORGED RIMS

Track-developed and fully forged, Titan 7's new T-S5 features strengthening ridges strategically placed to provide extra rigidity whilst keeping weight to a minimum. Boasting a split five-spoke design paying tribute to motorsport heritage, the T-S5 features traction-improving bead seat knurling, a beefed-up inner rim flange for durability and machined accents. Clearing all popular big brake kits, T-S5 is a five-stud design available in sizes ranging from 17 to 20 inches in diameter with widths up to 11 inches, with a huge variety of offsets. Ideal for 987, 997 and 991 owners, T-S5 comes in a choice of colours, including satin black and the brilliantly named Cyber Gold.

**Price From** £530.41

[titan-7.com](http://titan-7.com) (customers in the USA) or [tegiwaimports.com](http://tegiwaimports.com) (UK and Europe)



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[bit.ly/subscribeptp](http://bit.ly/subscribeptp)



## GAN GA+ TUNING APP

Available for naturally aspirated Porsches built from 1999 onwards, Gan Tuning's smartphone-controlled ECU remap app adds more power and torque with the added benefit of up to 15% improved fuel economy. Configure three different driving modes (factory, economy and dynamic driving maps) and switch between each in an instant. Gan Tuning's product are supplied with a five-year warranty and meet the requirements of industry standards.

**Price** £199

[design911.co.uk](http://design911.co.uk) or call 01277 283443



## ► AUTO FINESSE 20TH ANNIVERSARY COLLECTOR'S DETAILING SET

Introducing the luxury twentieth anniversary collector's edition cleaning set from Auto Finesse. Limited to a strict five hundred units, this special gathering of products celebrates the detailing giant's first two decades of history and includes a handcrafted wooden presentation case with a unique production number. The treasures within are some of Auto Finesse's 'special reserve', essentially developed products which didn't make it into the company's mainstream range. The twentieth anniversary project allowed

Auto Finesse's car cleaning experts to move beyond the normal constraints of production to bring together what's being marketed as "the ultimate kit for the true die-hard Auto Finesse fan and detailing product collector." Each case includes premium car shampoo, pre-wax cleanser, gloss enhancer and show car wax.

**Price** £495

[autofinesse.com](http://autofinesse.com) or call 08446 931393



## VIOFO A119 V3 DASHCAM

Featuring an advanced 5MP IMX355 Sony Starvis sensor and F1.6 7G lens, capturing footage at 30fps and recording at 2K Quad HD+1600P resolution, VIOFO's award-winning A119 V3 budget dashcam produces images in stunning quality both day and night. License plate recognition is a cinch, while the 140° camera angle prevents 'fisheye' whilst still covering a wide view of the road. The two-inch screen allows access to settings, as well as playback of video and audio, in an instant.

**Price** £99.99

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# GANG OF FOUR

After decades of experimentation with family-friendly concepts, the Panamera finally brought Porsche's full-four-seater luxury sports car concept to life...

Words **Richard Gooding** Photography **Various**



**P**orsche is proudly a performance vehicle manufacturer, but sports cars come in different shapes and sizes. Indeed, sleek coupes and turbocharged cabriolets may be brought to mind when we think about Zuffenhausen's pure performance production machines, yet the past two decades have seen many other strings added to our favourite car maker's bow.

Considering how long Porsche remained without a series full-four-seater, it's amazing to think the seed was sown with the development of the 356-based Type 530 in the 1950s. Arguably more surprising to those outside the Porsche world is the fact the ongoing survival and development of the company's flagship product line now depends on the success of Stuttgart-crested 'more doors'. The Cayenne was the first of these models to break cover. Controversial for straying so far from what purists saw as the Porsche blueprint, the big-selling SUV was followed by the Panamera, offering brand loyalists more of a traditional, if somewhat elongated, silhouette. From the pen of Porsche Chief Designer, Michael Mauer, the new executive challenger had the look of an extended 997.

The covers were pulled off Porsche's first 'full size' luxury car – factory designation 970 – in 2009. The new arrival took obvious influence from 1987's H50, a 928-based test mule sporting suicide doors. Built in partnership with coachbuilder, American Specialty Cars, the long-body V8 was fully operational and followed on from the two-door shooting-brake 942 of 1984. Later, 1988's 989 took the idea of a family-friendly Porsche one step further. A new four-door concept with 996 looks, it took inspiration from the 1970 C20 915 (essentially a stretched classic 911) and a prototype four-door 911 S. Powered by a 4.2-litre, 350bhp V8, the 989 project was canned when recession arrived and challenged Porsche finances in the early 1990s.

## EVOLUTION OF THE SPECIES

The notion of a family-friendly Stuttgart-crested car surfaced again in 1991, thanks to a submission from Italian automotive design supremo, Giorgetto Giugiaro. His 932 design was more or less a rehashed SEAT Proto TL concept car with a 968-like nose. Visually more SEAT than Porsche, Stuttgart's men in suits dismissed the Italdesign concept and laid the family-ferrying Porsche idea to rest until the 2000s, when the era's Porsche President and CEO, Wendelin Wiedeking, thought it high time the company take the bull by the horns and develop a profitable series production four-door grand tourer to sit alongside the Cayenne in main dealer showrooms. Of the various design studies commissioned, the resulting Mirage would set the direction for the first Panamera.

Shoehorned into a lift at the World Financial Center in Shanghai, the biggest production Porsche conceived was elevated 425 metres to its press debut in March 2009, a month before production began. A powerful entrance befitted the G1 Panamera's importance – Porsche invested more than one billion euros in the development of the model. Sales projections were calculated at 20,000 units per year, with assembly taking place alongside the Cayenne and the Carrera GT in the firm's factory at Leipzig. »

## BUILDING DREAMS

Panamera production doesn't take place in a single location. Engines are assembled in Stuttgart, before bodies are assembled and painted in Leipzig, alongside the Cayenne and Macan. Bodies were also built at the Volkswagen Group plant in Hanover. Panamera production began in the spring of 2009 following the model's world premiere at Auto Shanghai.



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Just like Porsche's iconic Carrera moniker, the Panamera name was derived from the Carrera Panamericana road race, an event in Mexico which saw Hans Herrmann's 550 Spyder charge to third place in 1954. At almost five metres long, two metres wide and with a 2,920mm wheelbase, the original Panamera was luxurious and spacious in equal measure. Packing a potent V8, the 4,806cc engine gave the two-wheel drive S and all-pawed 4S power in the region of 400bhp, while the twin-turbocharged Panamera Turbo delivered an additional hundred ponies. If there was any doubting the big, front-engined, rear-wheel drive Porsche's pedigree, the Turbo's 188mph top speed and zero to 62mph time of 4.2 seconds laid fears to rest. As it turned out, buyers didn't need much convincing – in December 2009, three months after production started, the 10,000<sup>th</sup> Panamera rolled out of Leipzig. The 25,000<sup>th</sup> Panamera was finished just seven months later, far ahead of schedule.

**Top** Porsche Styling's drawings for the design of the first-generation Panamera

**Above** The 10,000<sup>th</sup> Panamera rolls out of Leipzig in December 2009 and the 25,000<sup>th</sup> example pictured in summer 2010

**Right** The press pack switches to overdrive during the Panamera's world premiere at Auto Shanghai





Exciting innovations included adaptive air suspension and a choice of six-speed manual or seven-speed Porsche-Doppelkupplungsgetriebe (PDK) dual-clutch gearboxes. Base-model Panameras boasted a 997-matching drag co-efficient of just 0.29, while a two-way automatic spoiler under the rear window deployed at 56mph to further refine aerodynamic qualities. The desirable Sport Chrono option sharpened performance and the Turbo's four-way wing added welcome extra downforce.

The stonking 543bhp Turbo S of 2011 completed the 62mph dash in just 3.8 seconds when its giggle-inducing launch control system was engaged. Outgunning the Turbo, the S-badged belter's firepower was developed through larger turbochargers, aluminium-alloy pistons and high-pressure fuel injection. With a mammoth 553lb-ft (750Nm) of torque – lifted to 590lb-ft (800Nm) through Sport Chrono's overboost function – the S proved the Panamera's credentials as a Porsche offering practicality and performance in equal measure.

## POWER OF HINDSIGHT

More sedate, a pair of 300bhp 3.6-litre V6-powered Panamera and Panamera 4 models were added to the line-up. A variant drinking from the black pump arrived in 2011. The three-litre diesel's 250bhp propelled it to 62mph from rest in 6.8 seconds, but many purists considered a derv-drinking Porsche car to be a step too far in the wrong direction. It was, however, one which factory bosses deemed essential to the survival of the brand – the world was trying to get to grips with the environmental impact of carbon emissions, making a diesel-fed Panamera seem like a positive step forward. Porsche had to show that while its sports cars were still performance powerhouses at heart, it was a manufacturer with a conscience. Of course, this was a time before *Dieselsgate*...

The diesel Panamera's path was trodden further by the 375bhp S Hybrid. Its Audi-sourced, parallel hybrid, petrol-electric powertrain was also used in the Cayenne S Hybrid, but in the greenest Panamera launched, the unit was still capable of a 167mph top speed and a 5.8-second sprint to 62mph from rest. The model's supercharged 328bhp three-litre six-pot, 46bhp/34kWh electric motor and 1.7kWh nickel-metal-hydride battery combined to produce emissions of just 159g/km, enough to make it both the cleanest car in the whole Porsche range and the fastest hybrid on sale. As bold as it was unconventional, the S Hybrid laid the foundations for the all-electric Porsche four-door, now in production as the Taycan following the Mission E concept study first unveiled at the 2015 Frankfurt Motor Show.



The S Hybrid may have captured the hearts of hippies, but Porsche wasn't about to forget its core customers. Indeed, in 2012, the Panamera GTS was introduced. Sitting below the Turbo in model hierarchy and sportier in character than the S, the 424bhp sports machine looked and sounded every bit a force to be reckoned with. Chrome was binned for black trim. A sports exhaust added an aural boost. As was the case with the rest of the Panamera family, a sizable (£91,239) price tag did nothing to dissuade buyers.

A refresh in 2013 brought forward a new Panamera in the shape of the Executive, a model deemed essential to strengthen Porsche's blossoming foothold in China and characterised by a 3,070mm wheelbase. The Executive was offered in selected left-hand drive countries as part of a revised Panamera product line, which could be identified by new front and rear bumpers. The updated entry-level Panamera now developed 306bhp, while the Turbo S and Turbo S Executive landed a 562bhp and 590lb-ft blow to its Mercedes-Benz CLS 63 AMG and Aston Martin Rapide S rivals. With a 193mph top speed and ceramic brakes, the tweaked Turbo S completed the benchmark sprint time in 3.6 seconds, making it almost as fast as a 997 GT2 RS. The 416bhp S E-Hybrid added plug-in capability for twenty miles of electric driving, 71g/km emissions, and a fuel economy figure of 91mpg.

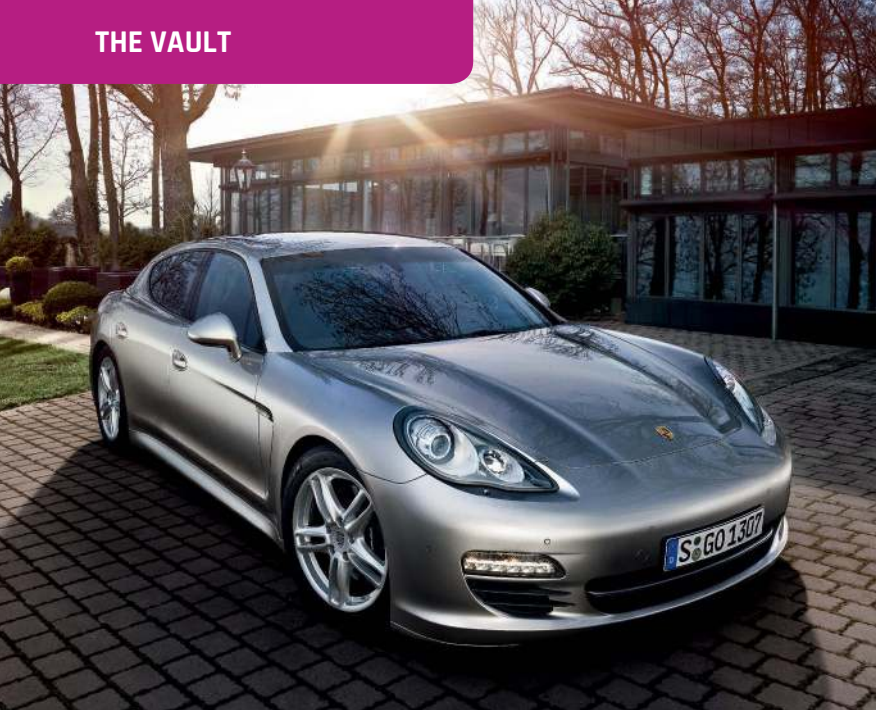
A new three-litre twin-turbocharged V6 propelled the 414bhp S and 4S, making the GTS (now with 434bhp) the only naturally aspirated V8 Panamera on sale. Special GIs included the Platinum Edition of 2012, the 100-only Panamera Exclusive Series of 2014 and 2015's imaginatively named Panamera Edition, but after 150,000 970s were built, the second and current-generation G2 Panamera broke cover in Berlin on 28<sup>th</sup> June 2016. Wider, taller



## THE RUNNERS UP

From left: the 356-based Type 530 full-four-seater, a prototype four-door 911 S, the C20 915 on display at the Porsche Museum, the 928-based H50, the 989 design study, Italdesign's SEAT-derived 932 and the Panamera-inspired Mirage concept.





and with a 30mm longer wheelbase than its predecessor, the 971 was afforded a more sports oriented appearance through the appointment of a 911-aping rear end in place of the 970's hatchback-esque profile. A full-width rear LED light bar previewed what was to become a defining feature of the 992, while more graceful proportions were in keeping with what traditional Porsche customers expected from the marque's output. Inside, the 970's horizontal-axis dash architecture remained, but the digital Porsche Advanced Cockpit was now a key feature. Comprising a pair of seven-inch driver information screens complementing a 12.3-inch smartphone-interface touchscreen, modern technology was balanced with a nod to Porsche heritage thanks to the look of a rev counter inspired by clocks of the 1955 356 A.

Launched in 4S, 4S Diesel and flagship Turbo trim, the new Panamera was initially only available with four-wheel drive (2017's £66,386 325bhp V6 reinstated rear-wheel drive to the range). The 4S Diesel offered the lowest power at 416bhp, the 4S delivered a G1 GTS-matching 434bhp and the Turbo romped home with 542bhp. An eight-speed PDK II gearbox was standard, although adaptive cylinder control trickery was able to turn the Turbo's eight-banger into a four-pot powerplant in mild driving conditions. The Turbo even made headlines as "the fastest sedan to lap the Nürburgring", a test completed in just seven minutes and thirty-eight seconds, the same short time taken by the Lamborghini Gallardo LP570-4 Superleggera, Chevrolet Corvette C6 ZR1, Nissan R35 GT-R and, of course, the 997 Turbo, when each model faced the same challenge.

**Top** Production G1 Panamera in 2010

**Top right** G2 body runs through the Porsche paint shop's light tunnel for inspection

**Above** Second-gen Panamera sketch design demonstrates lines and exterior furniture in keeping with new 911 looks

**Right** GTS (red) and shooting-brake Sport Turismo models side-by-side



**Right** G2 holds a 'Ring lap time of 7:38 minutes

**Bottom** 10 Years Edition, complete with White Gold Metallic accents







## GIVE AND TAKE

Many Porsche purists were upset by the arrival of yet another vehicle designed to broaden the appeal of the brand beyond traditional sports car enthusiasts, but as far as Porsche was concerned, the runaway success of Panamera and Cayenne models (the latter now Porsche's biggest-selling product) was essential to ensure the very survival of the company's signature product line.



New rear axle steering and an electronic 4D chassis control management system made the G2 Panamera feel more sure-footed than ever, and the Sport Response Button unleashed all the available power with just one press! Weight was kept down by extensive use of aluminium and, like the 970, a motorised rear spoiler enhanced aero. Executive models continued with an extended 3,100mm wheelbase.

## TAKING CHARGE

The Panamera 4 E-Hybrid made its debut at the 2017 Paris Motor Show. A system output of 456bhp from a combination of 325bhp V6 and 134bhp/100kW electric motor produced emissions as low as 56g/km and an all-electric range of thirty-one miles, along with a nought to 62mph time of 4.6 seconds. The flagship 671bhp Turbo S E-Hybrid married performance with parsimony, though, as well as being crowned the most powerful Panamera to date.

During the same year, Porsche launched the Panamera Sport Turismo. Previewed by the 2012 concept of the same name, this shooting-brake styled version of Porsche's big bruiser mirrors the standard Panamera range in all but body shape. Amazingly, the 671bhp Turbo S E-Hybrid Sport Turismo is the world's most powerful stock estate car, besting both the 604bhp Mercedes-AMG E63 S and the 597bhp Audi RS6 Performance. We'll go out on a limb and say the Porsche looks much cooler, too.

Earlier this year, the 454bhp twin-turbocharged Panamera GTS V8 arrived, but the model Porsche is

currently most keen to shout about is the just-released 10 Years Edition. Offering additional equipment as standard, with particular emphasis on chassis dynamics and passenger comfort, the new model includes exclusive 21-inch Sport Design wheels finished in satin-gloss White Gold Metallic, a 'Panamera 10' logo on the front doors and the same anniversary logo dotted about the cabin. Available in 4 and 4 E-Hybrid flavours (and Sport Turismo derivatives equipped with the same engine), the 10 Years Edition adds a panoramic roof system, privacy glass, heated fourteen-way adjustable seats, soft-close doors, BOSE surround sound, LED matrix headlights with Porsche Dynamic Light System Plus (PDLS+), Lane Change Assist and Lane Keeping Assistant with traffic sign recognition and Park Assist, including reversing camera.

While the world is a very different place to how it was a decade ago, demand for the Panamera hasn't dimmed. Largely, this is due to the model succeeding in its role as a contributor to China now being ranked as Porsche's biggest export market. In the 2018 financial year, Panamera orders ballooned by a massive thirty-eight percent. Moreover, more than sixty percent of Panameras rolling off the Leipzig production lines in 2017 were hybrids, suggesting buyers are becoming increasingly concerned with the impact of their carbon footprint. Whichever way you cut the Panamera pie, though, there's no doubting the model's status as the car which finally gave Porsche the successful full-four-seater production grand tourer designers and factory engineers had contemplated for so many years. ■







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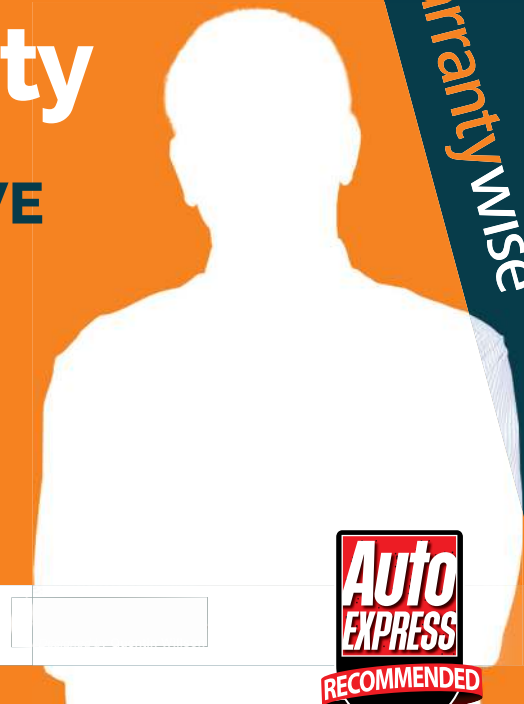
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Basalt black with black leather  
55,000 miles **£42,000**



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Meteor grey with black leather  
47,000 miles **£42,000**



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Basalt black with black leather  
55,000 miles **£40,000**



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**911 997 "2S" 3.8 (57 - 2007)**  
Meteor grey with black leather  
58,000 miles **£33,000**



**911 997 "4S" 3.8 (08 - 2008)**  
Basalt black with black leather  
62,000 miles **£32,000**



**911 997 "2S" 3.8 (08 - 2008)**  
Atlas grey with black leather  
48,000 miles **£32,000**



**911 997 "2S" 3.8 (07 - 2007)**  
White with black leather  
58,000 miles **£32,000**



**911 997 "4S" 3.8 (06 - 2006)**  
Seal grey with grey leather  
53,000 miles **£31,000**



**911 997 "4S" 3.8 tip (57 - 2007)**  
Meteor grey with black leather  
62,000 miles **£30,000**



**911 997 "2S" 3.8 (07 - 2007)**  
Basalt black with black leather  
72,000 miles **£30,000**



**911 997 "2S" 3.8 tip (06 - 2006)**  
Midnight blue with ocean blue leather  
31,000 miles **£30,000**



**911 997 "4S" 3.8 tip (06 - 2006)**  
GT Silver with black leather  
62,000 miles **£30,000**



**911 997 "2S" 3.8 (57 - 2008)**  
Silver with black leather  
59,000 miles **£30,000**



**911 997 "4S" 3.8 tip (06 - 2006)**  
Seal grey with ocean blue leather  
55,000 miles **£29,000**



**911 997 "2S" 3.8 tip (57 - 2007)**  
Silver with black leather  
53,000 miles **£28,000**



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Atlas grey with stone grey leather  
69,000 miles **£28,000**



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Meteor grey with black leather  
75,000 miles **£28,000**



**911 997 "2S" 3.8 tip (07 - 2007)**  
Meteor grey with black leather  
48,000 miles **£28,000**



**911 997 "2S" cab 3.8 tip (06 - 2006)**  
Basalt black with black leather  
66,000 miles **£26,000**



**911 997 "2S" 3.8 tip (56 - 2006)**  
Atlas grey with black leather  
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Aqua blue with black leather  
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# PAUL LOWE

A love of Porsche through the pairing of alcohol and driving? No need to raise an eyebrow — it's not what you think!

**B**ack in the late 1980s, I was a sales representative for the now-defunct Romford Brewery Company. I spent a lot of time out on the road in my trusty red Ford Orion repmobile, until one day, my employer set myself and my colleagues a challenge. The proposition and reward was clear: whichever one of us sold the most Löwenbräu beer over a two-month period would be thrown the keys to a nearly new 911 Carrera 3.2 Cabriolet. Challenge accepted!

We were told that whoever came up trumps would be able to take the car home for a weekend. It didn't matter to me that the E-reg drop-top was decorated in Löwenbräu livery (the Munich-based brewery and Porsche have a long history of working together, most notably through the former's sponsorship of 962-103, better known as the Al Holbert Racing Löwenbräu Special, one of the most successful and recognisable 962s raced in period), for this was a rare opportunity to get behind the wheel of the era's defining sports car.

"Sell Löwenbräu," they said, and sell Löwenbräu I did. Loads of the stuff. I certainly shifted more than anyone else who was present at the promise of a 911! True to my employer's word, I was let loose with the promo Porsche at the end of the two-month sales binge. I was in my element.

The car wasn't very old, yet it had already covered 130k miles by the time I jumped into the pilot's seat. My suspicion was that every high-performing Löwenbräu sales rep across the country had ragged the nuts off this poor Porsche at some point in its short life, but the car drove beautifully in spite of the considerable distance it had covered.

Bearing in mind I was used to pootling around in an Orion, setting foot inside the 911 was like boarding a spaceship! It went like stink, and I made sure I got full use out of the car in the four days it was parked on my driveway. Dawn until dusk, I was out and about enjoying every mile. I loved every minute. I was hooked.

I've been a fan of Porsche products ever since spending time with the Löwenbräu-stickered 911. It took me a while to be in a position to buy a Stuttgart-built sports car to call my own, but I did exactly that when I added my name to the logbook of a Copenhagen Blue 944 S2. Since then, I've indulged my passion for Porsche by frequenting Le Mans (where I saw GTIs fly across the finish line in first and second place in 1998), meeting Magnus Walker, driving a variety of amazing 911s, buying a Boxster and establishing my increasingly popular Porsche Sauce social media channels. I'll let you take a guess at what my favourite beer might be!



**Paul Lowe** is the man behind Porsche sourcing enterprise, Porsche Sauce, and is well-known through his highly active social media channels, where he constantly posts photographs, Porsche news and links to interesting sales cars.

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# CHRIS LANSBURY

A distressing and potentially expensive disaster has a very happy outcome thanks to the power of social media

Growing up, I was always in awe of the Porsche brand. As a teenager, never did I think I'd end up owning an independent Porsche specialist, let alone find myself writing a guest column for *GT Porsche* magazine! So, what to write about? My favourite Porsche? How to get the best bang for your buck? As fun as those subjects sound (to me, at least!) I've decided to focus this article on something many of us ignore, at least until it happens. I'm talking about car theft. More specifically, I'm referring to my father's stolen 1986 911 SuperSport, which was liberated from his garage a couple of weeks before I sat down to write these words.

This is where it gets silly. My company, PIE Performance, is an authorised installer of Trakker automotive tracking systems. All PIE technicians are qualified to fit this very capable security equipment, but like many, I'm guilty of thinking 'it'll never happen to us'. Unfortunately, it did. To make matters worse, we hadn't added a Trakker product to the car. Stolen without a trace, Dad's SuperSport looked to be lost forever. He was devastated.

Naturally, our first call was to the police, followed by a conversation with the insurance company. I also posted a cry for help on social media in a bid to raise awareness. Perhaps someone in the Porsche community knew what had happened to the car? I reasoned it had been stolen to order.

My phone started to ping. Again. Ping. And Again. Ping, ping, ping. The post had been seen by hundreds of fellow Porsche fans in just under ten minutes. An hour passed and a tally of two thousand people had reacted to the post. Two thousand rose to four thousand. The day came to an end with almost five thousand hits and a huge number of shares from Porsche enthusiasts all over the UK.

By the following morning, more than 10,000 people had seen my post. News of the theft had gone viral! I drove to PIE's Sudbury headquarters and, within an hour, I received a telephone call from someone who thought they'd seen the car. I immediately passed the information to the police.

Another day passed. 24,000 people reached, but no further information, no word from the police and, sadly, no recovered car. Into day four. Yet more social media interaction, but before I got the chance to give up all hope of finding Dad's treasured SuperSport, I received the phone call I'd been hoping for, but not before ignoring my ringing phone in response to not recognising the incoming number. Telepest? Whoever was trying to get hold of me was persistent. The phone rang again and again. I end up pulling over to find out who was on the other end of the line.

It was someone who said they'd seen my Facebook post and thought they'd spotted Dad's car dumped on the side of the road. The chap calling said he'd drive back to where he saw the abandoned 911, take a smartphone photo and send it my way. To my astonishment, I was soon looking at a picture of my father's missing SuperSport.

We decided to head straight to where we were told the car had been dumped. An hour later, we were stunned to be standing next to the classic Porsche we didn't think we'd ever see again. Yes, there was damage to the car, but the overriding sense of relief more than countered any feeling of upset concerning the required remedial work.

I'm immensely thankful for the power of social media, and to everyone who took time to share my Facebook post. Without this interaction, we'd never have seen the car again. Of course, had we fitted a Trakker system, we could have located the car in an instant, although I wouldn't have this story to share with you! Lesson learned. Needless to say, the car is now equipped with an active tracker, as are all the other cars in the Lansbury family fleet.

We were lucky to have been able to recover Dad's 911. My advice is for you not to wait until your car is stolen before taking preventative measures. Act now and make sure your Porsche is secure. How much would you pay to get it back if it was missing? A tracker costs from as little as £250 with a yearly subscription. And you know where to come for purchase and installation!



**Chris Lansbury** is head of PIE Performance, East Anglia's leading independent Porsche servicing, maintenance, modification and sales specialist. Established more than a decade ago, the family-run firm has forged a reputation for excellent customer service and competitive pricing.

**Twitter** @pie\_performance  
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**AN HOUR LATER,  
WE WERE STUNNED  
TO BE STANDING  
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PORSCHE WE  
DIDN'T THINK WE'D  
EVER SEE AGAIN**





# TALKING TAYCAN

In this eye-opening interview, Vice President Style Porsche, Michael Mauer, talks about the challenges of defining Porsche brand and product identity in the design of the marque's first all-electric sports car...

Words **Robert Smith** Photography **Porsche**



## NAMING CONVENTION

Composed of two terms of Turkic origin, the name Taycan can be roughly translated as “soul of a spirited young horse.” The name reflects both the source and the future of Porsche, perfectly summed up in the slogan of the model’s exciting new advertising campaign: *soul, electrified.*



**Taycan brings us a Porsche like no other. We're at the dawn of a new era for the design and manufacture of the company's production cars. How did you approach the design of an all-electric Porsche?**

It was, without doubt, one of the most exciting and challenging tasks of my career with the manufacturer, simply because we didn't have an existing model to use as a starting point. Not that we were working entirely from scratch — it was important, of course, for us to ensure the new car was recognisable as a Porsche at first glance, but Taycan needed to embody the company's existing brand identity. It was also of the utmost importance for us to pursue the Porsche strategy of offering the sportiest vehicle in every segment in which the marque is represented. In terms of design, this was initially expressed in Taycan's

proportions — sports cars tend to have a more dramatic width-to-height ratio than any other type of vehicle. I'd even go as far as to say we've managed to redefine the architecture of purely electric vehicles.

### How so?

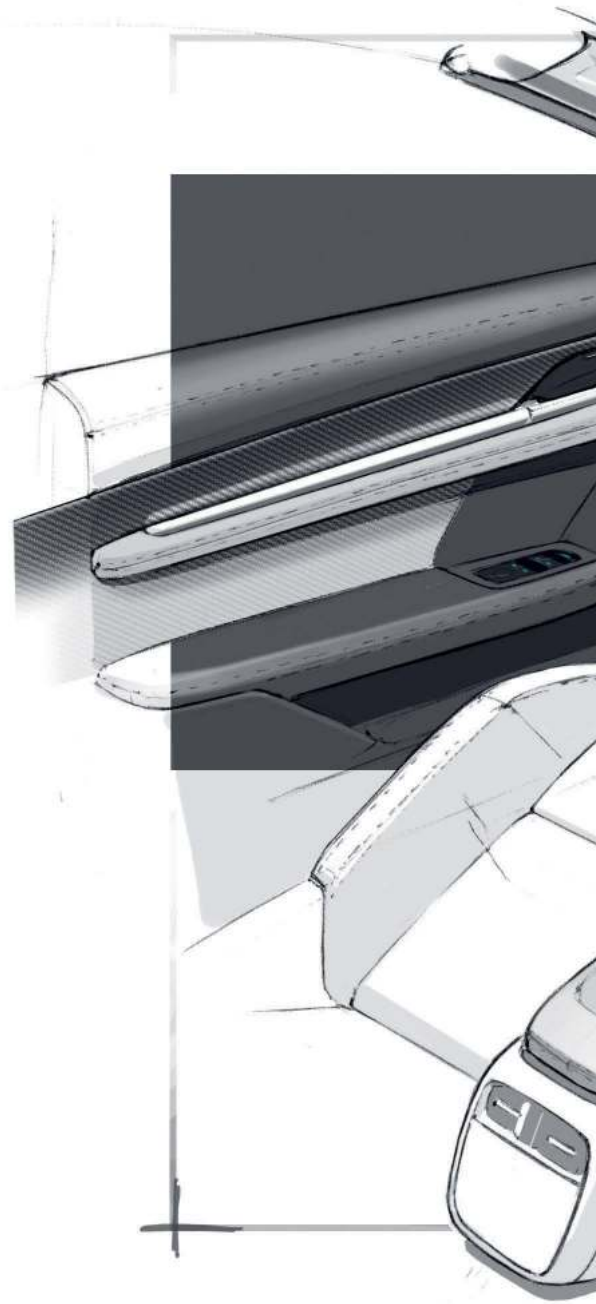
The Taycan is absolutely unique in terms of its proportions. Usually, purely electric vehicles are higher than their conventionally powered counterparts because the relatively heavy and large batteries are positioned in the floor of the vehicle while the occupants sit above them. We weren't willing to accept this uncompromising standard, but you can't just go installing the batteries in a different place without careful consideration. For reasons relating to driving dynamics alone, the centre of gravity must be as low as possible. You also

can't add loads of width to the car's body, which is why the specific challenge when designing the Taycan was to position the passengers as low as possible without them having to assume a reclined position. The same principle is applied to the design of a Formula One racing car.

### How did you solve the problem?

We call them 'foot garages'! They enable a comfortable sitting position, even in conjunction with the sporty vehicle height. It might sound strange, but people packaging was the greatest challenge we faced when designing the Taycan. How high can the vehicle be? How long and how wide should it be? How horizontal or upright will the passengers sit? To me, this kind of problem solving and delivering the ideal solution is what Porsche is all about. »





**How early were you involved in development of the Taycan?**

From the outset. In the past, it wasn't unusual for a Porsche product package to have already been defined by the time my team joined the project. Consequently, a fundamental design decision had already been made. This is why I'm always keen to explain our process, which essentially consists of three steps: defining proportions, styling and, last but not least, the details. The proportions are elementary. Nailing them is the most important prerequisite for Porsche vehicle design. If they're not right, you can't really do much to correct them with retrospectively applied styling and details.

**Was it clear which direction Taycan development was going to take?**

We had many discussions regarding

all aspects of the project. At times, we even talked about whether embracing electromobility with a new Porsche SUV might be a more sensible move. Ultimately, however, we made the decision to take an important step for Porsche with the design and development of an all-new, all-electric sports car. Then, the challenge was to ensure the look of resulting vehicle represented the dawn of a new, purely electric automotive era. How to do achieve this generated interesting conversation. For example, we discussed whether the fact we're flying the flag for electromobility with a class-leading offering meant we needed to change the look of our entire product line!

**What's your opinion on the matter?**

It'd be a mistake to ignore all of Porsche's characteristic design cues. I always think of

Porsche automotive design as comprising two components: first, there's the brand identity – you need to recognise the car as a Porsche. Then there's the question of product identity – which Porsche are you looking at? Brand identity is shown by different characteristics, starting with the vehicle's proportions. It's demonstrated in the 911-esque topography of the bonnet and front wings, the air intakes instead of a dominant radiator grille, our 'flyline', the falling roof line and a strong shoulder at the rear. These are elements that characterise every Porsche. Differentiation then takes place at product identity level.

**Is Taycan your first attempt at defining the appearance of Porsche models with an alternative power source?**

Yes, it is. In terms of product identity,



**WE INTRODUCE NEW ELEMENTS THROUGH PRODUCT IDENTITY, BEFORE THEY GO ON TO BECOME PART OF PORSCHE BRAND IDENTITY**



**Above** Maurer's Taycan sketch designs during project development

we give each Porsche model series its individual characteristics. One of the crucial elements we've defined in this context is the shape of the Taycan's headlights. We've invested a huge amount of development time in this part of the project, effort resulting in a concept making its debut on a series production Porsche. These special headlights go further than those we've developed for previous models and will be key to the character of Porsche's purely electric vehicles long into the future. The four-point daytime running lights, for example, are not only evident from the light pattern, but also from their shape. This sculptural design is important, because it's the dominating element at the front of the car. Pleasingly, modern lighting technology has provided us with the ability to enjoy much greater freedom of design. »

**Facing page** Maurer imbues each of his Porsche illustrations with design cues key to the brand's identity





## STAR QUALITY

Designers at Porsche and Lucasfilm are collaborating on a fantasy starship design that will be presented at the world premiere of *Star Wars: The Rise of Skywalker*. The sports car manufacturer and the US production company teamed up specifically to create the starship in support of the upcoming film, the final episode of the Skywalker saga.

"Developing a spacecraft with clear Porsche design DNA is exiting and challenging," says Michael Mauer. "Even though they do not seem to share many elements at first glance, both worlds have a similar design philosophy. The close collaboration with the Star Wars design team inspires and fascinates those of us at Porsche. I'm sure that both sides can draw major benefits from this exchange."

"The worldwide appeal of the Star Wars and Porsche brands is shaped decisively by their iconic designs," says Doug Chiang, Vice President and Executive Creative Director of Lucasfilm and the man responsible for overseeing all designs for the Star Wars franchise. "We're bringing together two worlds with this project: the exotic film design of a galaxy far, far away and the precision work that goes into developing Porsche sports cars. This collaboration promises to produce an innovative design that will blend the best of both brands to create an exciting new fantasy starship." Creatives will meet regularly in Stuttgart and San Francisco over the coming weeks to design the spacecraft and create a corresponding model. In addition to its unveiling at the movie's premiere in December, Porsche will also be showcasing the Taycan in advance of the first customer deliveries.



### **Does the fact you're not forced to fit a large combustion engine beneath the bonnet simplify the design process?**

I wouldn't say it made Taycan design any easier than, say, that of the Panamera or Cayenne, but it certainly resulted in less constraint. Through a lower, sweeping bonnet, we could align the Taycan's design with the 911, which, of course, massively helps in terms of achieving and maintaining Porsche brand identity. That said, Taycan goes a step further within the context of product identity: aerodynamics and airflow quality are of paramount importance when designing an all-electric vehicle, largely due to their influence over achievable range. This is one of the reasons we did away with traditional headlights and used a light source located in the air intake. Unimpeded by the innovative light clusters, the air enters

laterally from the front and exits again behind the wheel housings. As a result, airflow at the wheels is calmer, bringing about significant aerodynamic benefits and greatly improved range.

### **How much did you refer to the Panamera when designing the Taycan? After all, the older model is also a sporty four-door.**

I think it probably goes without saying that we benefited from the experience working on different generations of Panamera. In the side view, I think the downward slope of the roof line, our 'flyline' and the look of the side windows are successful design elements clear to see in both models, but we were determined to give Porsche's first all-electric production sports car its own product identity. It was important not to make the Taycan look like a small Panamera! And it



**YOU RECOGNISE THE ICONIC PORSCHE BRAND THROUGH A STRONG SHOULDER AND THE RECESSED 'GREENHOUSE', DELIVERING BEAUTIFUL PROPORTIONS AND SURFACES AS CLEAN AS POSSIBLE**



doesn't. The differences are so great there really is no risk of confusing the two.

**This brings us back to the challenge of reconciling the goals of both recognisability and differentiation. It's fair to say a new Porsche model needs to be familiar, yet seem new at the same time.**

We've managed to achieve exactly this with the Taycan. For proof, just look at its rear end. On the one hand, you recognise Porsche brand identity through a strong shoulder and what we call the 'greenhouse', delivering beautiful proportions and surfaces as clean as possible. On the other hand, the Taycan lacks tailpipes, which is why we emphasised the aerodynamics and focused intensively on the design of the rear diffuser. It's free of exhaust pipe apertures, thereby contributing to the

product identity of Porsche's developing range of purely electric vehicles. The light bar running across the rear reflects this fundamental philosophy, where we introduce new elements through product identity, before they go on to become part of Porsche brand identity; for many years, only all-wheel drive 911s featured a light bar, and now all Porsche models make use of the same feature. The task before us is to differentiate the feature again for each individual model series.

**Is it true your team considered redesigning the iconic Porsche crest while working on the Taycan project?**

It's widely known that Porsche has repeatedly adapted its iconic crest over the years. I'm of the opinion that a brand's trademarks should evolve as much as its

product line. This is why we updated the 911 logo attached to the 992. The adopted lettering is slightly more jagged and will be carried through Taycan production. We've already experimented with a black-and-white crest as a high-quality engraving in aluminium on the bonnets of our show cars. It's an effect creating a more contemporary impression, but I'll hold my hands up and admit it breaks with tradition. I'm sure many of your readers will be relieved to know we opted to keep the current crest!

**Speaking of tradition, how is Porsche vehicle design work changing as a result of digitalisation? Do you still need to make use of traditional tools?**

Good question. Let me put it this way: creativity is still paramount and is drawn from designers' minds, not digital pens »



or intelligent milling machines, but it'd be churlish of me not to acknowledge the fact we can work much quicker when straddling both the physical and digital worlds. Today, we can create data models from simple sketches and immediately reproduce them as 3D graphics on computers or large video screens. Obviously, this accelerates the design process, but I remain a firm believer that 3D graphics are no substitute for crafting a physical model. There are things you just can't see on a computer that will only stand out in reality. Sometimes we need to design a surface on the basis of mathematically 'incorrect' parameters to make sure we've achieved the right effect later down the line. For this reason, we still rely on tried and tested clay models up to a scale of 1:1, where each surface and each line is created entirely by hand. It goes without saying that the cost involved in this

process is something we have to consider carefully, but the bottom line is that most people can tell if extra care was taken to design a vehicle.

**It's reassuring to know car design doesn't need to be expressed in formulas!**

It's good to employ the physical as well as the virtual, but one of my greatest challenges is reminding myself that I'm not designing the vehicle in question for me, but I'm doing so for Porsche's customers. Quite rightly, they expect an exclusive product demonstrating quality craftsmanship. The Taycan's surfaces are charged with an engaging tension, with convex, concave and everything flowing together. These are signs of quality. Porsche customers greatly value the effort that goes into developing the cars they love. Taycan is no exception.

**And Porsche's future looks set to be focused on electromobility. These must be exciting times for you personally?**

Definitely! My time at Porsche started at when the development of the Panamera initiated a massive extension of the company's product range. We now find ourselves at another crucial stage in Porsche history. It's humbling and very special to carry so much responsibility during these important times. My vision is for the all-electric Taycan to become the icon of this new era, almost like a synonym for the purely electric sports car. Ultimately, my ambition for the Taycan is for it to achieve what the 911 has accomplished in its segment over the course of past decades.

**It's safe to say you're well on the way to reaching that goal. Thanks for your time, Michael. It's appreciated!**



**LIGHT  
FANTASTIC**

The Taycan's rear light bar includes a unique feature besides the glass-effect design: the lettering is embedded in a three-dimensional black circuit board. Porsche Exclusive Manufaktur optionally offers this graphic with dark metallisation and the deep glass letters in a choice of either Glacier Ice or Black.

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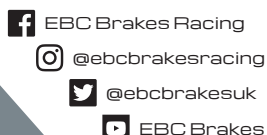
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# NORM GOODALL

**T**he youngest Aussie to fly solo (ten days after his sixteenth birthday), the first to fly 1,000 hours in a supersonic Mirage fighter jet for the Royal Australian Air Force, a man awarded a Distinguished Flying Cross when serving as Bushranger gunship Flight Commander in Vietnam. Norm Goodall has led an exciting life. Little wonder he spurned a desk job in favour of building a 37ft yacht for an eight-year voyage round the world! All of this, however, is gazumped by his achievements on the race tracks of Southern Australia. From within the confines of a modified and Martini-striped 1978 911 SC, he enjoys showing young drivers a clean pair of heels at the track and when regularly competing in hill climb tournaments.

Norm is the current Porsche Club of

South Australia Drivers' Champion, a title he achieved by dominating five sprints, three hill climbs and three motorkhanas with his orange-bumpered air-cooled classic. He's 'King of the Hill' at Ararat (a city in south-west Victoria, about 120 miles west of Melbourne) and has been class champion at the immensely popular Legend of the Lakes Hillclimb in Mount Gambier for the past three years in a row.

Norm has been – and still is – a bastion of the South Australian Porsche Club and South Australian Sporting Car Club, holding various roles, including Competition Manager. When not competing, he officiates at the Collingrove Hillclimb and Mallala race track, efforts contributing to him being recognised by the Confederation of Australian Motorsport for his services to racing Down Under.

Immediately after buying his SC in the year 2000 for \$37,000 (less than £20,000), the car was shipped to Keswick-based Porsche racing specialist, Buik Motorworks, to give it an edge over the hard-working 911s of his racing rivals. The chassis was upgraded with coilovers and 930 brakes, while the engine benefits from high-compression pistons and twin spark cylinder heads, the latter imported from the USA and fitted alongside electronic fuel management equipment from Australian manufacturer, Microtech. The changes contribute to a power output of 298bhp, pronounced poke made even more potent thanks to the car going on a strict diet – this beautifully presented race car tips the scales at less than a thousand kilograms.

## DOUBLE ACT

Norm is a Porsche guy through and through; the other car in the former fighter pilot's garage is a stunning 1982 911 SC Targa. Believe it or not, this newer classic Porsche acts as tow car for the competition SC! The two make a fine pair pulling into the pits of some of Australia's best-known race tracks.

As you can see, he's super-competitive, a character trait responsible for his decision to build the aforementioned yacht. Setting sail with his wife and three-year-old daughter, he navigated his way across the Indian Ocean, the Pacific, Cape Horn and then back home to Adelaide, before coming close to smashing a class lap record at Bathurst!



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# MAKING TRAX

Once again, Silverstone played host to a huge celebration of fast cars and modifying...

Words **Dan Furr** Photography **Dan Furr and Chris Frosin**

**O**ctober 6<sup>th</sup> is known for many things. In 1949, it marked the Soviet Union's creation of East Germany. In 1966, the same date saw the hallucinogenic drug, LSD, declared illegal in the United States. More recently, in 2008, the 6<sup>th</sup> October saw stock markets suffer massive losses in response to the George W. Bush administration's bailout of the American finance industry following the global banking disaster brought about by the subprime mortgage crisis. Thankfully, the sixth day of October in 2019 will be remembered for something altogether more positive. We are, of course, talking about this year's TRAX show at Silverstone Circuit!

Tens of thousands flooded 'the home of British motorsport' to enjoy a fun-filled day of high-octane action. Visitors were afforded to the opportunity to put the pedal to the metal on the venue's world-famous Grand Prix track, as well as admire the massive number of highly polished performance cars wheeled out by the many clubs and traders in attendance.

Thanks to massive downpours all over the country, the day got off to a damp start, but those who travelled far and wide to attend this highly anticipated annual event were rewarded with blue sky, sunshine and warmth when Silverstone opened its gates for festivities to begin. Lowrider demonstrations (starring a bouncy Boxster), a fun fair, various 'show and shine' competitions and a thriving trade area were waiting to greet eager showgoers, as was a special paddock presenting stands from many of the UK's most popular motoring magazines.

Naturally, *GT Porsche* made itself known with a strong selection of past, present and future feature cars,

including David Watson's unusually optioned 930 SE, Al Kingsley's Amazon Green 964 Carrera 4 (both featured in the July issue of *GT Porsche*), Kieron Maughan's late '98 993 Carrera 4 and Barrie Powell's spotless 944 Turbo.

## A DIFFERENT TUNE

Of the more heavily modified Porsches on our stand, Angus MacDougall's 997 Carrera 4 – a cool coupe wearing a coat of BMW Carbon Black and knocking on the door of 500hp thanks to the appointment of a General Motors LS3 6.2-litre V8 in place of the car's broken flat-six – and the hot-rodded classic 911 brought to the party by the boys at independent Porsche servicing, sales and maintenance specialist, PIE Performance, generated a massive amount of attention throughout the day. If awards were being dished out for the size of crowd any one of our display cars could attract, however, Nash Hunter's harlequin-esque 1987 944 Turbo, complete with its bright green OZ wheels and race-ready interior, would have bagged top honours. Starting life as a standard example of the turbocharged transaxle, the car was transformed into the vision you see on the following spread as a consequence of its starring role in an episode of popular television series, *Goblin Works Garage*. Unsurprisingly, the car was on the receiving end of a constant stream of admirers at Silverstone.

*GT Porsche* contributor and presenter of Quest TV's *Salvage Hunters: Classic Cars*, Paul Cowland, took care of compèring. He also announced the names of the show's competition winners. Chief among the lucky punters was Kevin Last, who'll undoubtedly remember October 6<sup>th</sup> for a long time to come – he was crowned champion of the 'win a car' contest, bagging himself a Subaru Impreza! ■

## THE RIGHT TRAX

A staple of Silverstone's show scene for as many years as we care to remember, TRAX is a multi-marque celebration of performance motors, from standout examples of new models through to heavily modified retro rides. Keep an eye on [traxshows.co.uk](http://traxshows.co.uk) for info concerning next year's TRAX event.







**Top** LS3-powered 997 Carrera 4 made a huge amount of noise, drawing admirers throughout the day

**Above** Proof Dan's 997 Carrera 4S was clean before its European road trip!

**Left** In addition to exhibiting a tuned classic 911, PIE Performance displayed their 986 race car on the GT Porsche stand





**Above** Like it or loathe it, there's no denying this 1987 944 Turbo (once a standard Maraschino Red example) and its 924 Carrera GT styling is a strong talking point



**Right** The show's bustling trade area featured everything from detailing gear to tuning products



**Facing page** Cowland shirks work and gets busy with the local takeaway's menu











**Above** In stark contrast to the Coblin Works Garage 944, Barrie Powell's lightly modified Turbo looks just like it did when new in 1991



**Right** Expect to see this hot-rodded classic 911 in a forthcoming issue of GT Porsche







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# TANGERINE SCREAM

Fast, loud, based on a 1970 911 E and very, very orange, this superb Carrera RSR 2.8 replica gets our juices flowing...

Words **Emma Woodcock** Photography **John Rampton**





## NEW MODEL ARMY

More than 1,500 Carrera RS 2.7s were constructed, far exceeding the 500 required for FIA Group 4 homologation purposes. The resulting limited production RSR 2.8 (factory designation M491) went on to become one of the most desirable and most valuable 911s ever conceived.





## REINVENT THE WHEEL

Fuchs alloys are far more than a pretty wheelface: the classic five-spoke pioneered forging as a wheel construction method. Porsche was impressed and, after two years of design collaboration with Otto Fuchs, the first ever Fuchs production wheels appeared on the 911 S in 1967.

**Above** Three-litre SC lump is now a 3.2-litre unit loaded with Web Cam racing camshafts

**S**tripes, speed and spoiler. It's a combination that made an icon of the 911 Carrera RS 2.7 and one that hotrodders around the world itch to evoke. Workshops, from Singer to RAUH-Welt Begriff (RWB), have borrowed cues from the 1973 machine when developing their own creations, while visually faithful RS replicas can be found throughout the backdating community. The popularity is easy to understand: a 210bhp lightweight that paved the way for the GT3 and GT2 models of today, it's a nonpareil of the 911 range, yet the RS 2.7 wasn't designed to be a hero in its own right. Sights set on Group 4 sports car racing, Porsche created the model to homologate an even more exotic 911 variant in the form of the 911 Carrera RSR 2.8. Based on the RS road car, the RSR benefits from a sky-high 10.5:1 compression ratio, upscaled valves and a two-millimetre cylinder overbore yielding increased displacement. Power is knocking on the door of 300bhp. Away from the engine bay, the RSR gains toughened chassis elements, a front-mounted oil cooler and brakes from the 917 Le Mans racer. Substantially wider Fuchs alloys and flared wheel arches complete the transformation into a formidable motorsport machine.

Success was immediate and overwhelming. The RSR took victory at the 1973 Daytona 24 Hours and won again

at the 12 Hours of Sebring. With both premier American endurance titles to its name, the 2.8 success story continued in Europe. Fourth at Le Mans, an upset overall victory on the Targa Florio road race and class victory in eight out of ten World Sportscar Championship rounds secured the RSR legend. With around fifty original cars constructed and values today sailing past £2,000,000, many enthusiasts mark their love for the legendary model by creating and enjoying a Carrera RSR 2.8 evocation based on a standard street-spec 911. Searing in a shade inspired by Porsche Continental Orange, the wide-hipped machine you see on the pages before you is one such retro riot. Owned and refined by lifelong Porsche enthusiast, Jason Graham, the 2.8 replica was first converted by project builder, Chris Nielsen, and stands today as a testament to both men's attention to detail.

## IN THE SHADE

Life for this air-cooled classic may have started when it rolled off the production line as a 2.2-litre E in 1970 but, by the mid noughties, almost every element had been replaced in the name of RSR-style fun on four wheels. Even the rain gutters have been excised for the sake of an accurate appearance. Dressed in matte black and hitting





the road in the summer of 2006, the car would be painted orange less than a year later.

When construction of the car was completed by Chris in his hometown of Seattle, photographs of the cool creation hit the internet. Thousands of miles away, Jason was bowled over by the brilliance of the build. There was no doubt about it – the zesty 2.8 evocation was coming to the UK! Needless to say, after it landed on British soil in early 2008, Jason jumped straight into enjoying his new toy. Doing so, however, meant leaving the engine exactly as it stood, a policy he's followed to this day. "I've never touched it," he says, "and, if you drove the car, you'd also be reluctant to start meddling with its beating heart!" The spec sheet reinforces his argument. Based around a three-litre 911 SC block, the engine's displacement is increased to 3.2-litres and benefits from aggressive Web Cam 20/21 camshafts and rebushed Weber 40mm carburettors. Other Porsches also provide parts, the RSR using Carrera 3.2 pistons alongside the crankshaft and connecting rods from a 3.3-litre 930. It's not a direct copy of the RSR 2.8 engine, but with peak figures around 260bhp and 240lb-ft, it's a testament to the engine building skills of Seattle-based Porsche technician, Bernd Buschen, owner of celebrated workshop, European Autowerke.

The other mechanical components are equally well chosen. Carrera 3.2 suspension and Bilstein shock absorbers are joined by 930 19mm and 25mm torsion bars, the latter a move by Jason to soften the car for road use, while a 915 five-speed gearbox and factory ZF plate-type limited slip differential take power to the half-shafts. The braking system strays from Porsche parts, meanwhile, employing a set of period Hurst/Airheart four-piston aluminium calipers. A popular modification amongst American racers past and present, the NASCAR-specification brakes are one of few designs that can fit beneath the wheels.

And what wheels these Fuchs alloys are! Adhering to the specification of a factory RSR 2.8, all four are fifteen inches in diameter. The fronts boast a nine-inch width and the back wheels measure a scarcely believable eleven inches across. Originals are hard to come by, which is why the rears on Jason's car have been extended by Californian Fuchs restorer, Weidman's Wheels, and wear 295mm-wide Michelins. As a direct reissue of a 1970s rally tyre, the TB15 black circles are another key component in getting the drive and look spot on.

It's not just the tyres, though. Jason's pursuit of detail ensures the car presented on these pages is virtually »

**Above** Interior is tastefully upgraded with colour-coded Recaro buckets and period-correct felt carpeting in place of previously installed roll cage



indistinguishable from a genuine RSR 2.8. A fibreglass front bumper and rear ducktail spoiler adhere to the race car's appearance, with the subtle lip spoiler a sole deviation. Smaller components – like the driver's side mirror and external rubber boot releases – tally perfectly with the specification of an original 2.8.

To ensure the correct lines and use of the right material, Jason enlisted the help of award-winning bodywork restorer, Iain Strachan. As head honcho at iKustoms in Kettering and a veteran of managing Porsche projects, he was perfectly placed to replace the previously installed GT Racing fibreglass wheel arches with custom-made steel components. "The template Iain used came off an original 2.8," Jason explains. "We were also lucky enough to have access to genuine RSRs when checking the profile of new metalwork." The reward is a car that simply looks right.

## INSIDE STORY

Close adherence to the factory style continues in the cabin, thanks to a double-stitched steering wheel with the correct 'hockey puck' horn, leather straps in place of window winders and boutique dial faces which read up to 10,000rpm and 300kph, both courtesy of Palo Alto Speedometer. It doesn't stop there, though. In place of the half roll cage installed under Chris's watch, Jason has added thin felt rear carpeting to the same specification as that found inside an original 2.8. Only the Recaro Pole Position sports seats – brought to life with body coloured backs and unique diamond-stitched suede upholstery expertly applied by Garry Hall at ClassicFX in Horley – stray from Porsche's original intent.

After more than a decade of fast driving, taking in twelve European countries and the best roads Britain has to offer, the time has now come for Jason to part with his 1970s stunner. "Everyone will ask me how I can possibly replace

it," he says, "but life is about memories and I've made hundreds in this car. I feel it's now time for somebody else to enjoy what this special RSR evocation has to offer." It's a 911 that's traversed the Alps twice in the past eighteen months, attended the Le Mans Classic, repeatedly visited the Spa Six Hours and proved the star of several DDK Club road trips. Indeed, get Jason talking about the driving experience and it's clear this awe-inspiring Porsche is best enjoyed from behind the wheel. "It drives like it looks!" he smiles. "It's very different from a standard early 911, primarily thanks to its vastly reduced weight and the immense power produced by the modified flat-six." Weighing less than a tonne, this is an old-school Porsche which knows how to cover ground quickly.

"It's a lot faster than I'd expected it to be," confirms Paul McLean, owner of GT Classics, a dealer in Andover specialising in track-focused 911s of all ages. He's helping Jason's 2.8 replica find a new home. "You can feel the lack of bulk right away, while the suspension and brakes have noticeably more control and more power than a 2.2 or 2.4-litre 911 of the same era."

"It's overwhelming," Jason adds. "This car is both physical and aural in a way that few other 911s can match. On mountains roads, like those in Wales or the Alps, it truly comes alive. The sound is epic." The use of an early base car enhances the period driving experience, bringing a level of lightness and authenticity alien to a 964 chassis. "The absence of weight makes a huge difference to how my car feels and handles when compared to a build based on a much later air-cooled 911. Due to this being a true early example, you're afforded the opportunity to understand what it'd be like to drive a real RSR on the road. My car looks and sounds like a genuine RSR 2.8, but only once you've enjoyed seat time do you realise it feels the part too." Still want that RS 2.7 replica? ■

**Below** Muscular metalwork was custom-made from steel and replaces fibreglass components added many years ago





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# BALANCE OF POWER

Even before the world was introduced to the 911's silhouette, air-cooled flat engines were hugely important in defining Porsche's identity...

**T**he air-cooled flat engine has a special place in the hearts of Porsche fans, but emotion only tells half the story. As well as revving its way into our affections, from a design point of view, the flat configuration has many features giving it the edge over other engine layouts. It's older than you might think, too.

The design's history dates back 123 years to 1896, when Karl Benz developed the idea into a working powerplant. Back then,

he referred to his creation as the 'contra' engine in recognition of the fact the unit's two cylinders worked in opposition to one another. Later namechecked by many as the 'boxer'—so-called because opposing pistons move inwards and outwards at the same time, mirroring the behaviour of boxers punching their gloves together before a fight—the flat engine was originally intended to have a displacement of more than 1.7 litres and be capable of delivering five horsepower. The underlying

design principle, both then and now, is that cylinders should lie flat and slightly offset to each other, on opposite sides of the crankshaft.

The Porsche family tree of flat engines can be traced back to the Volkswagen Beetle (and the 1937 W30 prototype before it). Primarily the brainchild of Adolf Hitler, the *People's Car* was intended to be a basic vehicle capable of carrying two adults and three children at 100km/h (62mph) using equal to or, ideally, less





than seven litres of fuel per 100km along Germany's newly introduced autobahn highways. From a practical point of view, Hitler wanted the engine of the new car to be air-cooled due to anti-freeze additives not being widely available outside the aviation industry. Moreover, at a time when the German automotive sector was focused on producing little else but luxury cars, his desire was for every home to be able to accommodate the vehicle he had in mind, irrespective of whether a garage was available to protect water in engine systems from freezing during winter months. Ferdinand Porsche's engineering concern was commissioned to develop an air-cooled car for production.

## BUG'S LIFE

The resulting Beetle's 1.1-litre four-cylinder engine delivered 35hp and would be installed by Ferdinand's son, Ferry, in the ground-breaking 356-001. Continued development of the design followed, with the flat-four layout being beefed-up to a flat-six for the introduction of the 356's replacement, the 901 (the original factory designation for the 911). The now legendary air-cooled six-cylinder

## THE 917 RACING MACHINE MADE EFFECTIVE USE OF A FLAT-TWELVE

engine went through a number of major revisions during its lifetime, with gradual increases in displacement, ignition, fuel and airflow taking place in direct response to Porsche's monumental achievements at the race track. At its production peak in the 3.8-litre 993 Carrera RS, the air-cooled flat-six developed 300hp without the assistance of forced induction. Strapping a duo of turbochargers to the engine boosted output to a massive 450hp.

The air-cooled flat engine is lightweight, one of the reasons it became recognised for being phenomenally successful in professional motorsport applications. The compact design is another attractive quality for owners and racers of sports cars, ensuring a low centre of gravity, which encourages a more aggressive and more dynamic style of driving, and not just in corners – when situated at the rear

of a Porsche, traction is greatly improved due to weight being carried above the driven axle. Until all-wheel drive vehicles conquered the roads, Beetle, 356, 912 and 911 drivers agreed a car with a rear-mounted engine was by far the best choice for winter conditions. The opposite is also true: when braking, the weight of a rear-mounted engine allows more force to be transferred to the rear wheels.

The flat engine – especially the six-cylinder variant – is smooth running, with an ideally balanced crankshaft allowing short-stroke sports cars to cruise at high speed without excessive mechanical strain. All good things must pass, however, and this was certainly true of the air-cooled flat-six. Tight emissions legislation made it increasingly difficult for Porsche to maintain high performance without compromising its requirement to meet stringent industry standards, hence the switch to a water-cooled flat-six for the 993's successor, the 996-generation 911.

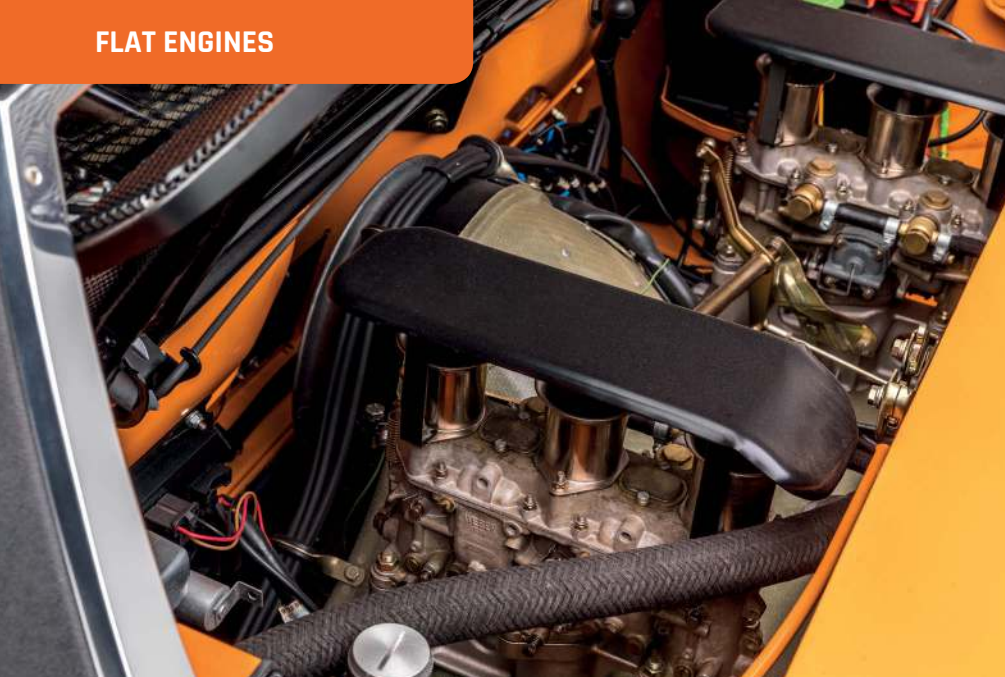
Over the years, Porsche's air-cooled engines came in flavours other than flat-four and flat-six. The 908 racer, for example, was propelled by a flat-eight, while the iconic 917 endurance racing machine



**Facing page** Porsche two-litre air-cooled flat-six from 1963

**Top and left** The 1937 Type 60 (W30) Volkswagen prototype, Porsche 356-001 and the 901





made effective use of a flat-twelve. Those new to the Porsche scene might also find it interesting to note the marque's air-cooled engines weren't always located at the rear – the 914, a blueprint for the Boxster and a model currently enjoying its fiftieth birthday, was a hugely successful mid-engined roadster available with either flat-four or flat-six powerplants.

As a basic rule, it takes more effort to manufacture a flat engine than an inline engine, simply because a greater number of components are needed to complete assembly – the flat engine needs two banks of cylinders with a valvetrain, plus cooling or injection. On the flip side, the flat engine is a particularly good candidate

for air-cooling because the individual cylinders are located far enough apart from one other to benefit from a direct flow of cooling air.

## LEAGUE OF NATIONS

Porsche continues to use flat-four and flat-six rear and mid-mounted engines (albeit water-cooled) in its sports production and racing machines, but our favourite manufacturer isn't the only car maker to adopt the technology. Since the 1966 Subaru 1000, a water-cooled, front-mounted, flat-four or flat-six engine has been an identifying feature of all the Japanese manufacturer's mid-sized cars, most famously the World Rally

Championship dominating Impreza range. Toyota has also got in on the act by collaborating with Subaru on the development of the recent GT86 and BRZ, near identical models often collectively referred to as 'Toyobaru', but while speed machines from the Land of the Rising sun, as well as vehicles built by Citroen, Panhard, Chevrolet, Lancia, Alfa Romeo, Ferrari and DAF have all made use of flat engines, it's Porsche which has become most associated with the design. And, though its post-993 water-cooled cars signalled a new age of flat engine powertrain development, few would argue against the celebrated air-cooled engines of old as being anything but a Porsche calling card. ■

**Top** Mid-mounted 914-6 GT air-cooled engine and three-litre turbocharged flat-six from 1975-930



**Right** Top-mounted intercooler dominates later 930 engine bay





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## WHAT IS A CAMSHAFT?

A camshaft's job is to control the air/fuel mixture that enters its host engine's cylinders. It also regulates the amount of exhaust gases that exit the cylinder and the speed at which they travel in and out of the cylinder. As such, a camshaft can massively affect an engine's operating behaviour, dictating power, torque, emissions, idle conditions and overall driveability.

# FOR THE DURATION

This month, we team up with Newman Cams to take a look at camshafts, what they do, and how you can make sure you've got the right parts for your Porsche...

**W**hen pulling together a list of upgrades to increase engine power, changing camshafts should be a job you prioritise. With a few relatively minor adjustments to your Porsche's cam profile, you can wield massive influence over the engine's performance characteristics. Whether you're on the hunt for more power at maximum revs for racing, or if you simply need more low-down grunt, installing uprated camshafts

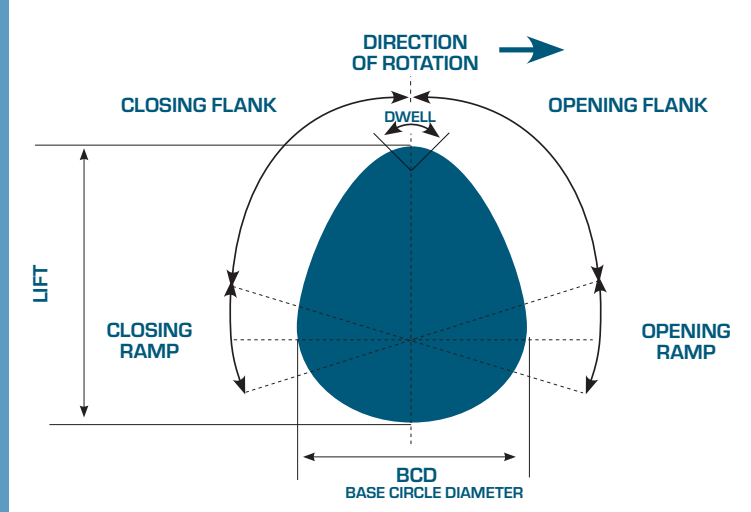
can help to produce the desired results. Get it wrong, however, and you can inflict hardship on your pride and joy, resulting in dire consequences preventing the engine from performing at its best.

We took time out to speak with Ken Newman, partner at celebrated Farnborough-based automotive engineering outfit, Newman Cams, to find out more about the design of camshafts, what they're made from, how they influence engine behaviour and the differences between turbo and n/a cams.

## SHAPE SHIFTING

Forget ECUs — many people consider a camshaft to be the thinking part of an engine. The design of the camshaft determines how, how long and how far valves open and close relative to piston behaviour. When you hear petrolheads refer to the 'cam profile', they're talking about the shape of the camshaft lobes. Different shapes deliver different types of motion.





## LIFT

You've probably heard people talk about 'high-lift' camshafts when discussing engine tuning, but what does this term actually mean? In essence, it refers to the increased distance the valve is lifted from the valve seat when fully open. The further it is lifted, the more room there is for the air/fuel mixture to enter the cylinder. This results in more energetic combustion and more power. That said, it's not true to say that more lift is always best. Any cylinder head will have a physical limit to how much gas it can flow, and when this optimum is reached, there's no point in lifting the valve any further. There are simply no further gains to be had.

## FLANK

A camshaft's 'flank' is its lifting edge. Its job is to rapidly open and close its corresponding valve. In terms of design, this is one of the most important parts of the camshaft profile. It must accelerate and decelerate the valve within the working limits of the valve spring, which is why it's crucial to use the correct valve springs for the camshafts you've chosen and the engine power output you're trying to achieve. If the flank is too aggressive for the application,

you run the risk of encountering 'valve float' (where the valve does not properly follow the closure phase of the cam profile) or 'coil bind' (where a valve spring's coils stack solid at or before full lift), both of which are bad news for engine performance and reliability.

## DWELL

All camshaft designs feature what's known as 'dwell'. This is the point of camshaft rotation when the valve movement is stationary (the cam stops valve opening and starts the valve closing procedure). Dwell usually only lasts for a couple of degrees of cam turn. Correct cam fitment and timing is absolutely essential for dwell to be correctly observed; a camshaft will come supplied with a set timing figure at which point full lift must occur. To time the camshaft correctly, the point at which 'true full lift' is experienced must be observed. This is the mid-point of dwell.

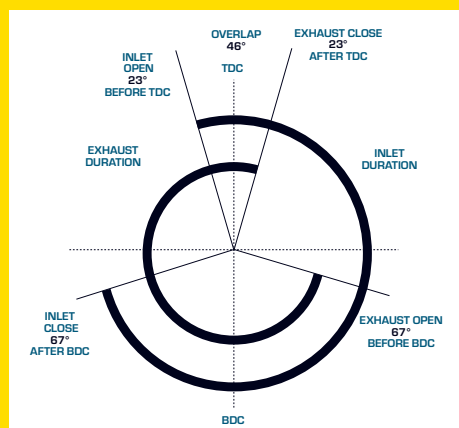
## TIMING

No matter what camshafts you use, setting timing correctly is essential. When we talk about cam timing, we're referring to the position of the camshaft in relation to the position of the crankshaft. Cylinder head valves need to open and close at

precisely the right time to achieve their best performance. Ergo, setting the correct timing is crucial.

On modern cars, you may gain as much as 20bhp simply by altering cam timing, and that's without having to switch to alternative camshafts. In their OEM fitment, factory cams are timed to meet commonly adopted emissions requirements, but by simply adjusting timing, you can change your pride and joy's engine characteristics to trade lower emissions for more power and torque. A set of adjustable cam pulleys allows cam timing changes to be made. The pulleys enable rotation of the cam while the crank remains motionless.

Many modern performance engines feature Variable Valve Timing (VVT), a process which alters cam timing while the engine is running. Cam timing can be set for best idle conditions at low rpm while retarding to suit high rpm performance, usually through the activation of hydraulic pressure or an electronic actuator. Obviously, there is a limit to the amount of adjustment available, and many VVT systems will only work if the cams are timed in accordance with factory settings. This is why many tuners prefer to disable VVT and manually alter cam timing to suit their needs.



## OVERLAP

As mentioned earlier, 'overlap' is the period when both the inlet and exhaust valves are open at the same time. Long overlap usually occurs when cams with long duration are installed. The valves remain open for a lengthier period than normal, meaning that overlap time will also be increased.

Having both sets of valves open at the same time might sound like a negative. Indeed, you may be under the impression that only one set of valves should be open at a time. It's true to say this is the best operating action for clean emissions and the most complete combustion, but it doesn't necessarily follow that this configuration is ideal when it comes to boosting the performance of your Porsche.

For example, having an overlap as the exhaust valve closes and the inlet valve opens helps increase the speed of the air/fuel mixture entering the cylinder. As the exhaust gases are forced out of the cylinder, the movement helps draw intake air into the cylinder. This isn't very good as far as emissions testing is concerned because some of the unburned air/fuel mixture will be forced directly out of the exhaust, increasing hydrocarbon output.

As a rule, you'll find that cams with a shorter overlap will produce more torque and peak power than those with a longer overlap period, although cams with greater overlap tend to produce more power higher up the rev range.



## VALVE SPRINGS

Far from just making sure that valves close after they've been opened, valve springs play a crucial role in controlling the valvetrain as a whole. They ensure the valve is kept in contact with the camshaft (via followers, lifters, rockers, pushrods) so that the cam controls the motion of the valves.

It's vital you use suitable valve springs for your chosen camshafts. If the springs are too soft, they won't be able to keep control of the valve, resulting in valve float (as outlined in the 'flank' section). Also, if any of the installed height, seat pressures or distance between coils is incorrect, then the engine will almost certainly underperform. In unfortunate cases, your Porsche's powerplant may even destroy itself!

Valve springs with too much pressure for the application are just as bad. Overspringing can cause the valves to shut too aggressively, causing damage to the valve seat and cylinder head.



## DURATION

One of the biggest factors in camshaft design is what's known as 'duration', a unit of measurement indicating how long the corresponding valves remain open (not fully open, but also not fully closed). The measurement is taken as 360° (one full rotation of the camshaft) minus the amount of time the valve is fully closed. The longer the duration, the longer the valve remains open, and the longer the valve is open, the more gases can flow through it.

The trade-off for a longer duration is an increased period of overlap (when both inlet and exhaust valves are open at the same time). In some cases, this can cause lumpy idle and poor performance at low rpm. These

unwanted operating conditions mean cams with long duration are usually reserved for race engines, where maximum power is needed at the top of end of the rev range. In these applications, the positives outweigh the negatives, primarily because race engines are pushed to the limit and spend most of their time at full chat.

It's worth keeping in mind that due to today's strict emissions controls, newer series production engines with advanced fuel injection and electronic ignition systems tend to include cams boasting more lift and less duration. In contrast, tuning of older vehicles tends to involve fitting cams with longer duration and less lift.



## NATURALLY ASPIRATED VS FORCED INDUCTION

There are many differences in profile design between cams intended for naturally aspirated engines and those packing forced induction, but the two most important contrasts are duration and overlap.

With a naturally aspirated engine, you want to encourage the flow of as much intake air as possible. Longer duration and the resulting increased overlap help to achieve this. With forced induction, the opposite is true – you don't need to worry so much about encouraging air into the cylinder on a boosted engine due to the fact that it's already being forced in by the accompanying turbocharger. Even so, you don't want any of the exhaust gases to slow the speed of intake air as a consequence of escape through the inlet tract, which is why most turbo camshafts feature a shorter duration and a resulting shorter overlap than naturally aspirated equivalent parts.

Forced induction cams are designed to work in conjunction with a turbocharger when full boost is reached. With this in mind, consider the fact there's no point in having a set of cams designed to rev at 9,000rpm and make peak power at 8,500rpm if your car's turbo runs out of puff at 5,000rpm! Conversely, it makes no sense to buy a set of cams that'll make peak power and peak torque early on in the rev range if you've installed a massive turbo which doesn't start producing boost until 4,500rpm.



## LOW-FRICTION COATING

Many steel billet components, including camshafts and followers, can be treated to a low-friction coating. These coatings not only reduce friction between moving parts (thus reducing wear and increasing reliability), but they also help to reduce engine operating temperatures. After all, any form of friction will create heat, and by reducing friction, you'll reduce heat! Perhaps unsurprisingly, low-friction coatings are costly, and tend only to be used in motorsport where maximising every last bit of power is essential.

## MULTI-PROFILE CAMS

Many modern engines cleverly utilise multiple cam profiles machined into a single camshaft. Honda's three-stage VTEC system is a good example of what we're banging on about. The cam features three cam lobes per cylinder. This has the effect of providing the engine with three different camshafts per actual camshaft. In other words, the engine can have a cam profile assigned to low engine speeds, another for cruising and an aggressive profile designed for maximum power at higher engine rpm. The engine physically switches between these profiles to provide the best profile possible for the active operating conditions.



## BILLET CAMS

Most camshafts are produced from chill-cast iron. This process involves casting the blanks in a rough camshaft-like shape, meaning the cam profiles and bearings are ground onto the cast lobes. This is by far the most cost-effective method of producing cams in large volume, which is why almost all factory and mass-produced aftermarket performance cams are made this way. For one-offs and high-end motorsport applications, however, camshafts are often made from steel billet. The result is a much stronger, hardwearing cam, not to mention extra bragging rights!

Billet cams are mega-strong because they're made from a single piece of billet steel. Starting out as a round bar, the material is then turned down to the required size to suit the expected bearings and fixings. Cam lobes are left circular to begin with, before being ground into a shape on a computer-controlled stone grind wheel. The cams are then heat-treated and case-hardened to prevent wear.

Additionally, billet cams allow for gun-drilled centres. This helps reduce weight but also allows for the centre of the cam to be used as an oil channel with cross-drilled holes feeding the lobes or bearings.

Billet cams are best suited to high-revving applications, but the expense involved in producing them means they're almost always only found in professional motorsport environments.

### THE FINAL COUNTDOWN

Camshaft bearings are very similar to crankshaft bearings, but camshaft bearings tend not to have replaceable shells, meaning a new cylinder head is often required if the camshaft bearings have suffered excessive wear through the continued use of contaminated oil, or through oil starvation.





## CAMSHAFT MATERIALS

Rockwell is a hardness scale based on indentation hardness of a material. There are different scales, denoted by a single letter to highlight different loads and indenter types. When testing metal, indentation hardness correlates linearly with tensile strength. The higher the number on the Rockwell scale, the harder the metal is. Camshafts can be made from various materials, where Rockwell scaling is observed to ensure each part is fit for the intended application.

### 1. HARDENABLE IRON

This is Grade 17 cast iron with an addition of 1% chrome to create 5-7% free carbide. After casting, the material is flame or induction hardened, producing Rockwell hardness of 52 to 56 on the C scale. This material was developed in 1930s America as a low-cost replacement for steel camshafts. It's mainly suited to applications where there's an excess of oil e.g. camshafts running in an engine block and splash-fed from the sump. Consequently, Newman Cams only uses this material for performance camshafts if the camshaft is splash-fed by a sump.

### 2. SPHEROIDAL GRAPHIC CAST IRON (ALSO KNOWN AS SG IRON)

A material giving similar characteristics to hardenable. Its failing as a camshaft material

is hardness in its cast form, which tends to scuff bearings in adverse conditions. The material will heat treat to 52 to 58 Rockwell C. This material was commonly used in the 1980s by Italian automotive giant, Fiat, and various other European car makers.

### 3. CHILLED CHROME CAST IRON

Chilled iron is Grade 17 cast iron with 1% chrome. When the camshaft is cast in the foundry, machined steel influencing the shape of the cam lobe are incorporated in the mould. When the iron is poured, it hardens off very quickly (known as chilling), causing the formation of a carbide matrix (this material will cut glass) on the cam lobe. Chilled chrome cast iron is exceedingly scuff-resistant and is the only material for manufacturing high-quality OHC performance camshafts.

### 4. CARBON STEEL: EN8/EN9

Used mainly between 1930 and 1945. Due to the through-hardening characteristics of the material, carbon steel is currently used for induction hardened camshafts in conjunction with roller cam followers.

### 5. ALLOYED STEELS: EN351 AISI 8620 AND EN34 etc.

Used by British Leyland in its A Series and

B Series engines and best adopted when supported by a chilled cam follower.

### 6. NITRADING STEEL: EN40B

The best steel for camshafts. When nitrided, it gives a surface hardness and finish similar to chilled iron. Newman Cams uses this material when replacing chilled iron camshafts in competition engines. Interestingly, this material is used on several of the current competing engines in Formula One.

## CONCLUSION

In general, steel is a good camshaft material, but the type of steel has to be matched with the cam follower it runs against because different grades of steel have different scuff characteristics. When purchasing camshafts, enquire which material the parts you're thinking about buying are produced from. This will help you find a fit for purpose solution for your engine build. For example, a chilled iron camshaft may be more expensive, but its resistance to wear in all conditions far exceeds any other type of cast iron. Of course, this has been a very simplified explanation of camshaft materials, but it's based on Newman Cams having more than fifty years of trading and manufacturing experience and may help you to ask the correct questions when purchasing performance camshafts.

## ASK THE EXPERTS

In 1967, David Newman commenced grinding performance camshafts on a Churchill cam grinder modified for non-production camshaft manufacture. One of the first camshafts he worked on was for the Competition Department of the Rootes Motor Company (now Peugeot), grinding Hillman Hunter and Imp cams. After taking the decision to establish Newman Cams, he continued to manufacture and grind performance camshafts, albeit on a much, much bigger scale!

During the early 1980s, the automotive industry experienced a substantial increase in the production of overhead camshaft engines, many of which suffered from premature camshaft and cam follower wear. Newman Cams received enquiries regarding the manufacture of replacement camshafts, rocker arms and cam followers. Before long, David decided to expand into the production of new parts. Manufacturing led to a large expansion of plant and staff. His son, Ken, joined the family firm in 1985.

During the late 1980s, the Newman Cams team realised that hardenable iron camshafts, which had long been the norm in the USA and for some manufacturers in Europe, wasn't wear-resistant enough for overhead cam engines. Working with a UK foundry



to develop small batch runs of chilled iron castings, not to mention making its own pattern equipment, this development enabled Newman Cams to offer, in many cases, camshafts of better quality than the OEM part they were designed to replace. And so, the company was able to offer replacement camshafts for engines long out of production, as well as bespoke cams for sports car and motorcycle engines.

By the mid-1990s, the Newman Cams was

receiving enquiries for prototype camshaft work from engine development companies, and by 2002, David and Ken's efforts saw Newman Cams move into the production of performance camshafts in steel and chilled iron, manufacturing parts for F1, F3, BTCC, ETCC, DTM, FIA, GT Le Man and MOTO GP, as well as many other world-famous championships.

Today, Newman Cams offers one of the widest range of aftermarket camshafts available, including performance parts for Porsche. Among the company's offerings are fast-road, race and rally camshafts for classic 911s, as well as camshafts for transaxle models. The company can also regrind and superfinish your Porsche's rocker arms and supply new OEM-spec cam followers. Visit the Newman Cams website to download a brochure showcasing the company's latest range of products for all makes and models.

## CONTACT

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# SAME OR DIFFERENT?

If you think improving skill behind the wheel can only be achieved at the track, Porsche Driving Consultant, Neil Furber, encourages you to guess again...

I'm not a pigeon, yet it's amazing how often my role as a performance driver coach leads many to assume the race track is my figurative pigeon-hole of choice. You see, when I meet a new Porsche owner wishing to learn more about the capability and limits of their sports car, they often start talking about time at the track. The assumption is there's little to be learned on the road and that I spend the majority of my time coaching at circuits. The truth of the matter is that the road and race track are not as different as they may first appear to the untrained eye.





## SPOT THE DIFFERENCE

Granted, if we're talking motorsport, the race track is the ideal venue. Closed-road racing still has a role to play, but safety and atmosphere make the 'arena' format much better for spectator enjoyment. As far as celebrating driver skill is concerned, however, there is a downside: ignoring racecraft for a moment, it's an intimate knowledge of a track that plays the greatest part of raw lap time, which often settles position and bragging rights. Spending hours getting to grips with each circuit in a simulator is now the norm for any driver wishing to compete at a high level.

I'm very much in support of the tremendous work Formula One veteran, Jackie Stewart, has carried out in the interests of furthering safety in motorsport over the years. And yet, as a driving purist, there's something I find special about the racing drivers of yesteryear dicing with death whilst competing for pleasure and a love of the craft, rather than the promise of fame and sponsorship. Those heroes-of-old would drive the 'track' as they would drive the road, albeit with some constraints lifted. But, as most of you will already know, the 'tracks' were often road courses anyway!



A road is a drivable surface following a series of straights and curves with some undulation and elevation along its course. This sounds like my favourite local haunt as much as it does your commute to work, but how does it differ to the race circuit? Put simply, it doesn't! The road has a series of performance-related restrictions, traffic and white lines painted on its surface, just like a race track!

Kerbs are present to prevent corner cutting and rules are in force to dictate exactly how much cutting is allowed when bounded only by the white lines on the ground. Oh, and racecraft is all about mastering traffic. And there are rules for overtaking! As you can see, similarities between driving on the road and track are far greater than many might believe to be the case.

## THE ART OF THE CRAFT

Working on the assumption you'd like to learn about the capability and limits of your Porsche, if we break it down, you're probably asking for the chance to feel and understand the acceleration, braking and maximum grip of your Stuttgart-crested high-performance machine. Adrenaline. Excitement! What can it do? A blend of specially prepared training areas and a full race track (such as Porsche Experience Centres) are ideal places to get to know your car. I encourage you to visit them.

Just for a minute, however, let's go back to the skateboard I described in my 'mid-engined versus rear-engined' driver coaching article, as published in the Autumn 2019 edition of *GT Porsche* (get hold of a back issue by visiting [bit.ly/issuesgtp](http://bit.ly/issuesgtp)). That devastatingly cool deck could do amazing things. Popping an 'ollie', sliding down handrails or getting 'air' in the local skatepark's halfpipe. I'll let you into a secret: my childhood skateboard didn't perform any of these tricks. I rode it down the hill in my mum and dad's garden and did my best to jump off before I hit the cluster of nearby bushes! Even so, I had fabulous fun. As for the skateboard I bought in my teens, I

spent three days straight learning to 'ollie' and then, finally, progressed to the skatepark.

Why am I sharing these memories with you? Well, in many respects, sports cars are expensive skateboards for grown-ups, with Porsches being some of the very best available. Perhaps you can identify with my story? After all, you haven't got to be the world's greatest driver to enjoy seat time in a Porsche. For some of you, a 911, 924, 968, Boxster or 944 (or whatever else takes pride of place in your garage or on your driveway) is simply a lovely

place to sit, even when traffic lights burn red. For others, only the rush of a GT3 performing at full chat at the track will do. I love both experiences and everything in between.

No matter what Porsche you're in possession of, your car should always bring you pleasure. It's the continued desire to improve your skillset that ensures you'll continue to enjoy driving for years to come. With this in mind, try to consider driving as an art, rather than just a skill — the art is choosing which skill to use, when to use it and doing so with finesse.







## NEXT MONTH

Extracting performance from rear and four-wheel drive layouts

## RACING TO WORK

Now for the fun bit. I'm certainly *not* going to encourage you to 'race' to work. That said, almost every skill you'd use in a racing environment can be tuned and perfected on the public road without breaking any rules. Steering, changing gear, braking, weight transfer, vision, lines and position. It's easy to see how these can be tuned and practised until you approach perfection. For those of you who have engaged in 'advanced' road driving over the years, you'll be familiar with vision and planning, observation and preparation. Perhaps you've even learned about defensive driving: space management and escape routes? The best racing drivers are masters of these disciplines, too. In my opinion, the greatest artists are not measured simply by the stopwatch, but in their adaptability to all situations, be it competition, winter conditions, making smooth progress in traffic or minimising wear and tear whilst providing a safe, comfortable ride for passengers.

In his book, *The Racing Driver*, motorsport journalist, Denis Jenkinson, told the wonderful story of Fangio's win at the 1950 Monaco Grand Prix. On the first lap, where much of the field was caught up in a multi-car incident, the Argentinian speed merchant — at this point, leading the second lap — arrived at the entry to the blind corner hiding the accident. Rather than turn in at full entry speed, he rapidly slowed his Alfa Romeo and was able to navigate through the wreckage. Making the difference was his clever observation of the crowd's reaction to what was happening further up the road, as well as his ability to anticipate what stunned spectators might be focusing on. In other words, he wasn't concerning himself with only the racing line.

Your adrenaline 'fix' and earning reward from learning to walk the tightrope of grip are best suited to the track. Again, we come back to the Porsche Experience Centres and their outstanding facilities (PEC Silverstone

is a particularly excellent venue), but try not to forget that it's the wealth of experience available from each centre's highly skilled coaches that'll help ensure you continue to gain skills and finesse en-route to the ultimate goal of driving artistry.

Many of my Drive 7Tenths driver coaching clients are most interested in driving on circuit or engaging in a bit of skid control when I first hear from them. The majority are pleasantly surprised by just how much can be learned safely on the public road. This is ideal, not least because the road is where they use their car most of the time. Plus, let's not forget the welcome lack of circuit hire cost! Naturally, we enjoy track time when looking for adrenaline and excitement, as well as when the driver is already deeply into the thrill of circuit driving, but don't dismiss just how good the public highway is for vastly improving your skill as a driver and for ensuring you get the maximum amount of enjoyment from your Porsche.



## DRIVING FORCE

Neil Furber is GT Porsche's resident driving expert. With a background as a mechanical engineer in Formula One, he brings a unique technical insight to driver coaching. Splitting his time between the French Alps and the UK, Neil coaches drivers through his brand, Drive 7Tenths ([drive7tenths.com](http://drive7tenths.com)) and is also a Porsche Driving Consultant at Porsche Experience Centre Silverstone. Have a question about coaching? Email him at [enquiries@drive7tenths.com](mailto:enquiries@drive7tenths.com).



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# A KIND OF MAGIC

When it comes to what enthusiasts look for in a classic car, Porsche Club Great Britain's 1960 356 B ticks every box...

Words **Dan Furr** Photography **Dan Sherwood**







**W**hat do you look for when you buy a car? Good overall condition is usually the bare minimum, but what else floats your boat? Low miles? An interesting history? The near mythical one owner from new? If the answer to each of these suggestions is a resounding 'yes', then you'll be able to appreciate why it is Porsche Cars Great Britain decided to keep hold of the Heron Grey 356 B you see on the pages before you after it was traded in at Porsche Centre Reading on the 15th April 1987.

In the three decades preceding the pretty Porsche's arrival in Berkshire, the car had been used as a daily driver by a London-based magician who went by the stage name, Robin Hood. In the context of today's Porsche modifying habits, there's something decidedly pleasing about the existence of a 356 owner who shared his name with a heroic outlaw, yet the magic man refrained from tuning or tweaking his trusty two-door, save for a trio of main dealer cost options (an electric cabin clock, striking Super 90 hub caps and an extended steering column) contributing to a final sale price of £2,077.5s.6d from Archibald Frazer Nash (AFN), the UK's sole concessionaire of Porsche cars until 1965.

## HOOD COVERED 87K MILES IN HIS PRIDE AND JOY AFTER SIGNING ON THE DOTTED LINE IN APRIL 1960

Even in 1987, a one-owner classic Porsche was something of a rarity, which is why the boys at Porsche Cars Great Britain grabbed the 1.6-litre stunner's keys and made it one of the star cars in their collection of Stuttgart-crested four-wheelers brought out to wow punters at trade shows and exhibitions. It is, however, worth noting that Hood covered 87k miles in his pride and joy after signing on the dotted line at the end of April 1960. In other words, it's fair to say that by the time the illusionist parted with his car, it was rough around the edges as a consequence of spirited road use in all weather conditions. That said, the cool coupe was mechanically sound, meaning its 60bhp powerplant and four-speed manual transmission wanted little more than regular servicing during the sixteen years it performed as a promotional tool for Porsche Cars Great Britain before being handed to the guys at Porsche Club Great Britain (PCGB).

At this point in the story, it's worth us stressing the A-plater wasn't gifted to PCGB – it remained the property of Porsche Cars Great Britain, but was supplied to the club on indefinite loan. "There weren't any conditions attached to our guardianship of the car," recalls PCGB archivist, Peter Cook. "We kept it in good working order, enabling our members to hop in and take the controls during club-organised fun runs. Even so, as time went by, it was becoming apparent that an increasing amount of work was required to ensure the vehicle's survival." »



He cites the rapidly deteriorating condition of its Light Brown leather-trimmed interior as providing cause for concern, and hints at the welding needed to ensure a clean bill of health come every successive MOT. "It was clear to see the car needed to be properly restored if it was expected to last long into the future," reiterates Peter. "By this time, PCGB had acted as custodian for eight years, but the car was still the property of Porsche Cars Great Britain. Despite our desire to be involved in the required remedial work, logic dictated the cost of restoration would have to be met by its owners."

Faced with the prospect of shelling out a significant sum of money on a 356 B that'd driven off into the sunset (well, it got as far as PCGB's Gloucestershire headquarters!) in 2003, the chaps at Porsche Cars Great Britain decided the time had come to pass ownership of Robin Hood's former steed to the club. All parties recognised the car's increasing value justified a full restoration, and the company was keen to contribute. It did so by transferring the coupe's title to the club without charge, thereby kick-starting the car's transformation from a vintage vehicle showing signs of wear and tear into the pristine Porsche PCGB is proud to be in charge of today.

## HEAVEN FOR EVERYONE

Roger Bray Restoration was called upon to provide many of the parts required for the project, while Prill Porsche Classic managed most of the work, from a complete rebuild of the car's flat-four engine to the expert re-trimming of its interior. Fresh leather replaced the distressed hide covering the original seat frames, while new carpets joined an expertly crafted headlining.

As per the car's interior, its 'matching numbers' powertrain was exhaustively restored to factory

## A NIMBLE CHASSIS FEELING AMAZINGLY SOPHISTICATED FOR THE AGE OF ITS DESIGN

specification, although Peter tells us the biggest challenge of the project concerned the car's bodywork. "There's a huge number of new parts available to buy for 356s built in the 1960s, which made the restoration far easier than it would have been had we found ourselves in possession of an earlier example of Porsche's first production car. Nevertheless, you can't be too sure about the amount of corrosion you'll find on a classic car until you start stripping it. Thankfully, the many years of dry storage at Porsche Club Great Britain and PCGB's base in Moreton-in-Marsh prevented serious rot from taking hold, although new door skins were required," he says.

Resplendent in a flawless covering of its original colour, boasting factory glass and decorated with super-shiny brightwork, the 356 B Robin Hood bought all those years ago came to the end of its restoration in 2015. Don't be fooled into thinking the car is kept as nothing more than an expensive ornament in PCGB's reception area, though. "It's covered a significant number of miles since completion of the work!" Peter smiles. "The car is regularly exhibited at PCGB events and motor shows all over the UK. Additionally, it's often driven by club members keen to experience seat time behind the wheel of a restored example of the car largely responsible for putting Porsche on the automotive map."

Adding to those miles, we took the opportunity »



**Far left** 1.6-litre flat-four has plenty of poke and makes a fantastic noise



**Left** Not exactly enough room left to accommodate the weekly shop





### DON'T STOP ME NOW

Porsche Club GB is the largest officially recognised Porsche club in Europe. With an estimated seventy percent of all Porsche cars built surviving to the present day, the club is experiencing continued growth, leading to an increasing number of local and national events. Visit [porscheclubgb.com](http://porscheclubgb.com)



**Top** The car's original owner, Robin Hood, standing next to his pride and joy at a time when people could only see in black and white



**Left** Prill Porsche Classic oversaw most of the work, including the awe-inspiring retrim

### UNDER PRESSURE

During early stages of production, the 356 was little known outside motorsport circles. Early sales came from Porsche customers in Austria and Germany, but by the mid-1950s, after turning in an impressive performance at Le Mans and racking up a high number of class wins elsewhere, the 356 gained a strong following of enthusiasts both in Europe and the USA.

The 356 was the first series production Porsche and the design of Ferdinand 'Ferry' Porsche. Much like the Volkswagen Beetle penned by his father, the 356 was launched with a rear-mounted, four-cylinder, air-cooled engine and rear-wheel drive. The 356's chassis, however, was completely new. The same was true of the car's body, designed by Porsche stylist, Erwin Komenda.

Though there was a short period of overlap, the 911 replaced the 356, but sensing dissatisfaction with Porsche customers upset at the 911's comparatively high cost, a four-cylinder variant, the 912, was introduced at the price of a 356 SC.





to find out just how much fun this 356 B really is on the road. A cold day in the Cotswolds plays host to our adventure, which sees us travel in and out of Chipping This, Chipping That and Chipping the Other as we zig-zag our way through an area known for being England's second largest protected landscape.

While we weren't expecting the car's 0-60mph time of 16.5 seconds to see us smash any sprint records, there's no denying how quick this poky Porsche feels, a trait encouraged by a nimble, lightweight chassis feeling amazingly sophisticated for the age of its design. The ride is surprisingly sure-footed considering how far the car's wheels tuck inside its body, and the nose is quick to respond to input from the slim, out-of-proportion steering wheel populating the beautifully presented interior of this curvaceous air-cooled classic.

## ONE VISION

The rasp of the four-banger behind us rings loudly, attracting admiring looks and the occasional 'thumbs up' from fellow road users and the pedestrians we pass. We very nearly witness a collision as the pilot of a recently registered SUV pays more attention to us than he does to the road, a lapse of concentration that sees him veer into the path of a flat-faced HGV carrying a trillion tonnes of yellow limestone from a local quarry. Thankfully, the brakes of the towering truck are powerful enough to bring

**Above** Porsche pocket rocket shifts at rapid pace when its 1.6-litre engine is allowed to let rip

## A CAR THAT'D PREFER YOU TO GIVE IT THREE WEEKS' NOTICE BEFORE YOU WANT TO COME TO A STANDSTILL

it to an immediate halt, which is more than can be said for the stopping abilities of the Porsche we've borrowed, a car that'd prefer you to give it three weeks' notice before you want to come to a standstill.

We're exaggerating, of course, but it'd be daft to forget we're driving a near sixty-year-old car, even if the smooth, well-balanced delivery of power from the rev-happy 1,582cc lump impresses by modern standards. And impress it does, not just those lucky enough to be afforded the opportunity to drive this immaculate Porsche, but also anybody who lays eyes on it.

While the motoring press continues to celebrate the impact of the 356 on the wider automotive landscape in the seventy-plus years since the model was introduced to the world, PCGB has ensured a bright future for Robin Hood's second-gen gem thanks to a comprehensive restoration sympathetic to original specification. And judging by how well the car performs, it's safe to say this particular classic Porsche has a few tricks up its sleeve!



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#### Porsche contacts

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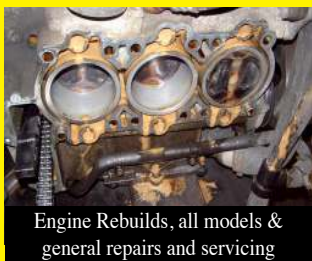
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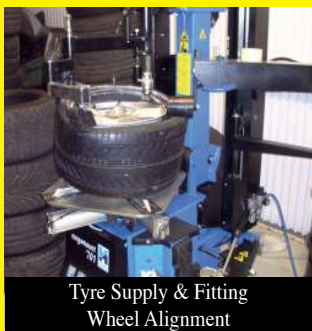
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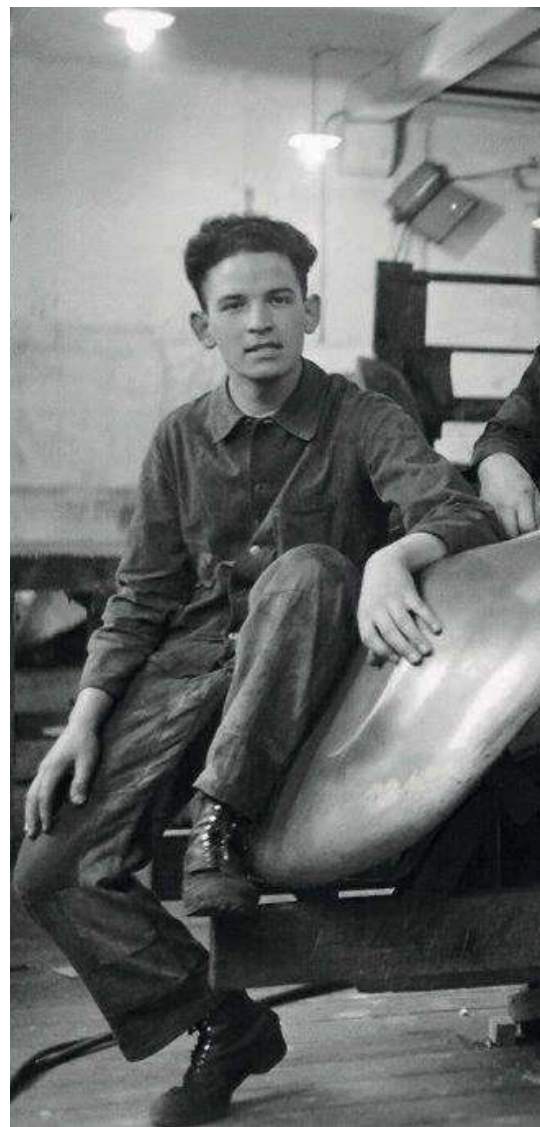


# IN THE DRIVING SEAT

Recaro and Porsche share more than seventy years of sports car manufacturing history

**L**ittle more than fifty-five years ago, the starting signal was given. It was 3<sup>rd</sup> December 1963, and Recaro GmbH began producing automotive seats in Stuttgart. At the same time, the esteemed company's predecessor, Stuttgarter Karosseriewerk Reutter und Co. GmbH, was sold to Porsche. Many milestones have linked both firms over the decades, from building prototypes for the first Volkswagens to creating bodies and frames for the 356, but even today, Recaro remains closely linked to our favourite manufacturer.

As early as 1906, Wilhelm Reutter understood clearly where mobility was heading. Rather than continuing with work on horse-drawn carriages, he wanted to build automobile bodies. He quickly formed his own company, developing relationships with chassis and engine manufacturers before swiftly winning their business. He turned many of his early ideas into a reality, including his patented Reutter-Reformkarosserie, an advanced vehicle body featuring a folding roof. It was the constructional precursor to what we now know and love as the cabriolet.







Reutter's solid, quality craftsmanship – combined with innovative foresight – was highly successful. Indeed, by the 1920s, all major German car makers were customers. Daimler, Benz, Wanderer, BMW, Opel, Adler and Horch relied upon Reutter's expertise. Before long, Ferdinand Porsche also came calling with a request for Reutter to build car bodies. One of these early collaborations was the 1930 prototype for a streamlined 3.25-litre eight-cylinder drop-top. Though it failed to reach series production, the unique vehicle (afforded the Type 8 designation) was used for many years by Porsche as his cherished private and company car.

In the late 1930s, the collaboration between Reutter and Porsche intensified when the latter settled into Zuffenhausen. Behind the gates of the then-new Reutter plant and under a veil of secrecy, prototypes for the Volkswagen *People's Car* emerged. The general public, it was »

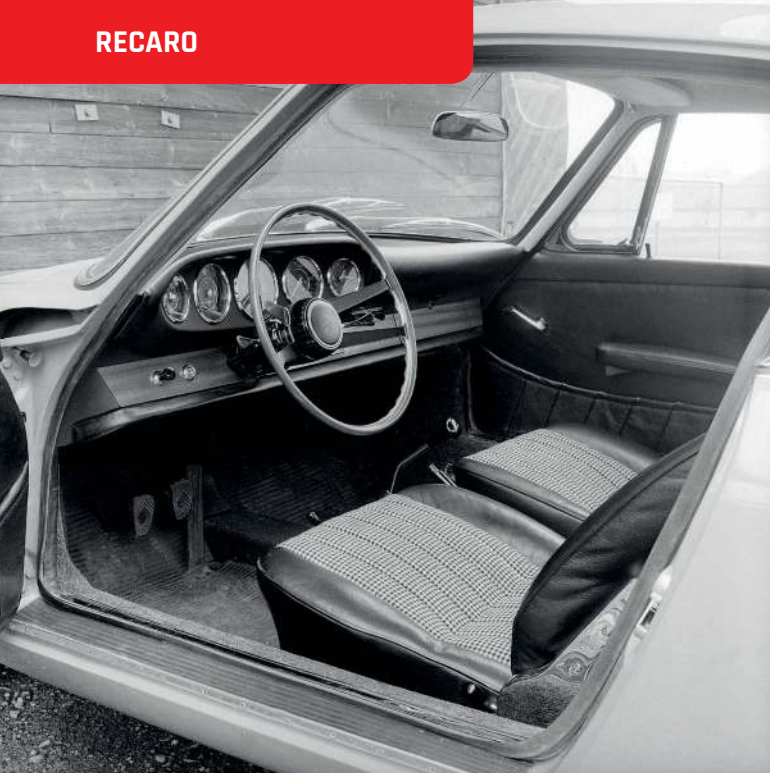
**Top left** The Reutter team responsible for assembly of the eagerly anticipated Volkswagen prototype

**Top** The 10,000<sup>th</sup> 356, fresh from the Reutter production line in the spring of 1956

**Above** Reutter seat production taking place at the firm's assembly plant

**Overleaf** Recaro "Tombstone" seats being prepared for Porsche in early 1980





planned, would get a first look at the new four-wheeler on 26<sup>th</sup> May 1938, at a highly anticipated ceremony held at the new Volkswagen factory in Fallersleben. For the occasion, Reutter prepared two prototypes: a hard-top and a cabriolet. Forty more prototypes followed for testing purposes, including those exhibited at the 1939 International Motor Show in Berlin.

In October 1949, Ferdinand 'Ferry' Porsche (son of Ferdinand Porsche) issued Reutter a spoken-yet-firm order for the production of five-hundred bodies and frames for his new creation – the 356. Additionally, Reutter was asked to supply the seats, all of the interior trim and to install the vehicle's electrical and heating systems. As if that wasn't enough, Porsche also entrusted Reutter with conducting the final inspection of each finished vehicle!

An array of options was included from the very start of 356 production so that, even in 1950, Porsche customers could choose between eight different exterior

paint colours and eleven contrasting seat finishes, including seven textiles and four leatherette coverings. Impressive outings for the 356 in endurance racing competitions led to sensational sales, ensuring that as early as 1956, the 10,000<sup>th</sup> 356 body left the Reutter production line. In the same year, the company celebrated its fiftieth anniversary.

## FORWARD PLANNING

Despite many observers considering the 356 to be a niche product, the plucky Porsche became a worldwide hit and played a major role in Reutter's success story. The original run of five-hundred cars ended up totalling more than 76,000 units by the time the 912 was brought in to replace the 356. Most examples of the earlier car were built by Reutter, with twin body plates exhibiting Karosserie and the Reutter word mark, one on the inner A-pillar and one clearly visible between the wheel arch and door.

In November 1961, Porsche awarded Reutter a development contract to design coupe and cabriolet versions of a new car body. A joint team of Reutter and Porsche engineers set to work on a prototype intended to form the basis of the latter's new flagship offering. Born in 1962 as the T8 and swiftly renamed 901, the new car was nicknamed *Stormvogel* (Stormbird). The corresponding prototypes were all built by Reutter's dedicated design department.

Although not yet ready for series production, the 901 marked its world debut at the Frankfurt Auto Show in 1963. Peugeot

bosses kicked up a stink about naming conventions, resulting in the 901 being rebranded as the 911. Not long after the model was revealed to the world, however, Reutter shareholders voted to sell the company's car body plant to Porsche. After fifty-eight years, the history of Stuttgarter Karosseriewerk Reutter und Co. GmbH came to an abrupt end. Porsche acquired the Reutter factory and all 950 members of staff, not to mention a massive pool of technical knowledge.

The Reutter story doesn't end there, though – a new company was formed! Named Recaro (an identity derived from *Reutter* and *Carosserie*), some 250 former Reutter employees started work at the new firm's headquarters on Stuttgart's Augustenstrasse, where seats and their fittings were manufactured under the Recaro name. Recliners quickly became a popular product, and an agreement was swiftly put in place with Porsche ensuring Recaro would supply all seats for the sports car maker's output for the following decade. In fact, the close partnership between Porsche and Recaro has endured to the present day – Recaro has supplied seats for almost every variation of the 911, along with cabin furniture for the 914 and Porsche's transaxle family of cars.

Even now, Recaro is supporting Porsche and its flagship 911 racing machines, as evidenced by the iconic Recaro logo seen stitched into each car's seat driving seat. Here's to a long and fruitful Recaro-Porsche future as terrific as the past has been for this pair of automotive giants.







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# 996 TURBO (2000-2005)

When compared to earlier and later turbocharged 911s, the 996 Turbo represents one of the Porsche's scenes best buys...

Words **Dan Furr** Photography **Matt Woods**

**M**ore than twenty years have passed since the 996 debuted, yet talk of its radical departure from previous 911 architecture fails to quell. Arguments for and against the first water-cooled Neunelfer rage on, but whichever side of the fence you find yourself sitting, there can be no doubt regarding the merits of the 996 Turbo, a model unveiled at the Frankfurt Auto Show in September 1999 and respected as one of the best production sports car of its era.

Equipped with four-wheel drive and a 3.6-litre, twin-turbocharged, dry sumped, water-cooled flat-six, the 996 Turbo is no slouch, but where previous turbocharged 911s were considered aggressive, the 996 Turbo feels altogether more refined. Yes, there's 420hp and 415lb-ft on tap, and anyone thinking about buying a 996 Turbo will almost certainly be aware of the fact this particular boosted Porsche makes use of a force-fed powerplant which can trace its roots back to Porsche's Le Mans-winning GT1 racing programme, but brand loyalists looking for a raw driving experience were encouraged to shell out for the already released GT3. The Turbo was much more of a grand tourer in stock trim, even if it was capable of delivering monstrous pace when the throttle was planted.

Emphasising the 996 Turbo's capable cruising potential, the model was offered with either a six-speed manual or a five-speed Tiptronic transmission. Both options proved popular, meaning it's worth holding

out for the right car – there are plenty of available examples to choose from in the classifieds. Those of you able to exercise patience may even be rewarded with the availability of a 996 Turbo kitted out with Porsche's desirable X50 performance package, comprising larger K24 turbochargers, an updated ECU map, revised intercoolers and a strengthened gearbox. Introduced in 2002, the X50 option bumped power to 450hp.

Eighteen months later, 911 fans looking for the classic combination of a turbocharged flat-six and a drop-top were offered the 996 Turbo Cabriolet. The first model of its kind since the 964 Turbo Cabriolet in 1989, the newer car proved to be a big hit, encouraging Porsche to release the Turbo S in both coupe and cabriolet formats for the 996's final stint of production. More or less a 996 Turbo with an X50 performance package as standard, the Turbo S also featured upgraded audio gear, model-specific cabin trim and super-effective Porsche Ceramic Composite Brakes (PCCB).

Unlike earlier and later 911 Turbos, the 996 variant represents something of a bargain on today's used car market, arguably as a result of negative press concerning the standard 996's reliability. Tarring the Turbo with the same brush is a mistake, but one which has kept ownership of a turbocharged 911 accessible to those working with a modest budget – a Tiptronic-shifting 996 Turbo can be yours for as little as thirty grand (less if you can drive a hard bargain). That's a lot of car for the money! Here's what to look out for.

**Right** The 996 Turbo cuts a fine figure and is one of the best value 911s available right now

**Below** Luggage space is tight, but there's certainly enough room to accommodate soft cases for those who can travel light





## SPOT THE DIFFERENCE

Four-wheel drive variants of the 996 share the wide-body look of the Turbo, but tell-tale signs you're not looking at a boosted Porsche include a lack of intakes on the muscular rear quarters.



## ENGINE

"Providing oil changes have been carried out regularly and in accordance with manufacturer instruction, the 996 Turbo's engine is generally bulletproof," confirms Chris Lansbury, owner of Suffolk-based independent Porsche servicing, maintenance and restoration specialist, PIE Performance. "The main concern with these powerplants is the potential for over-revving at the hands of previous owners, where poor gear selection at speed causes the engine to exceed the constraints of the factory rev limiter. The only way to determine if this is the case with the 996 Turbo you're looking at is to link the car's ECU to a genuine Porsche diagnostic interface."

Service intervals are listed at

every 12k miles (minor), 24k miles (intermediate) and 36k miles (major). Check the car's paperwork to verify these jobs have been done in a timely fashion.

"It's not unusual for the 996 Turbo to drink a litre of oil every 3,000 miles," remarks Chris, before citing alternators and starter motors as parts known to be problematic. The front radiators are also prone to failure thanks to the large open intake apertures situated in the front bumper. Combined with the Turbo's low ride height, the lack of effective grilles proves irresistible to debris and small stones flicked up from the road by vehicles ahead. These flying missiles can perforate radiators, but aftermarket mesh grilles are available to purchase.







## HISTORY

Make sure you paw through all documentation supporting claims of servicing and maintenance in accordance with Porsche's recommended intervals. Demand to see receipts or invoices proving the seller's suggestion of repair work and replacement parts. Be wary of any unexplained periods of the 996 you're looking at being off the road. If in doubt, have a full inspection carried out by a marque specialist. If you're in an owner's club, check to see if this is a service you can take advantage of as a benefit of membership.

Enter the Turbo in question's details into the DVLA's online vehicle enquiry service (visit [bit.ly/dvlaenquiry](http://bit.ly/dvlaenquiry)). It's free to use and will give you key information about the Porsche you're looking at. Additionally, take a few minutes to view information held on the DVLA's MOT history database (visit [bit.ly/dvlamot](http://bit.ly/dvlamot)). Another free service, it'll provide you with details of all passes, fails, advisories and mileage at the point of each test. Check to make sure the details match what's listed on the car's accompanying paperwork. Don't be afraid to ask questions. The seller should have nothing to hide.

**ENSURE ALIGNMENT IS SET UP  
CORRECTLY AND ANY TIRED  
SUSPENSION ITEMS ARE RENEWED**





## BODYWORK

"We've yet to see a 996 Turbo with heavy bodywork corrosion roll through PIE Performance's workshop doors," muses Chris. "The metalwork on these cars was fully galvanised at the factory. Rust is rare, but it's worth keeping an eye out for signs of accident damage and repairs."

Check to make sure panel gaps are as they should be. Look for differences in colour between sections of bodywork. Invest a couple of quid in an online history check from [mycarcheck.com](http://mycarcheck.com). You'll get instant confirmation of any registered accident history (insurance claims), details relating to changes of registration, any outstanding finance and the number of previous keepers. You'll also be able to tell if the 996 you're eyeballing was ever stolen or subjected to a change of colour..

Headlamps can discolour. They can also attract surface imperfections through stone chips. Replacement lights are expensive, so consider purchasing a headlamp restoration kit as your first attempt to rectify the problem. Rear lenses can crack. The light clusters are sealed, meaning a full replacement is the only solution.

"If looking at a cabriolet," continues Chris, "check to make sure the roof fully retracts quickly and without signs of stuttering. Also, test the active rear spoiler, which raises when the car hits 70mph. The part's rams and pump can wear over time." He also recommends prospective purchasers remove under-bonnet cowlings and check the bulkhead for signs of damage. "You shouldn't find anything untoward, even on the earliest of 996 Turbos," he stresses.



## FAMILY JEWELS

The 996 was replaced by the 997 in time for the 2005 model year, but the 997 Turbo didn't arrive until 2007. Immensely popular, a total of 175,262 996s were produced between 1997 and 2005.



## BRAKES AND SUSPENSION

While Porsches enjoy being used regularly, adding miles contributes to the wear of steering, suspension and braking components. 996 Turbos used at the track are especially prone to deterioration in these areas, so check the car's history file to see when parts were last replaced.

You're unlikely to feel much of a difference by fitting one or two new bushes, so consider investing in a complete suspension kit, including fresh dampers, springs, bushes and professional four-wheel laser alignment. This might sound like overkill, but shock absorbers and bushes celebrating double-digit birthdays simply won't be performing at their best. You want your Porsche to feel tight in the twisties, don't you?! Consider the cost of some or all of this kit in the price you're prepared to pay for your new 996 Turbo.

Aftermarket suppliers offer a range of performance parts ensuring you don't have to dig deep at your local main dealer. Bilstein, KW, GAZ Shocks and Öhlins offer various damper solutions, while polyurethane bushes from Powerflex, springs from H&R or Eibach and braking equipment, including pads in a wide range of compounds to suit different driving styles, are available direct from EBC.







## INTERIOR

Aside from bolster wear caused by clumsy drivers climbing in and out of their 996 Turbo, there shouldn't be damage to the hard-wearing upholstery, but have a good poke around to be on the safe side. While you're in the cabin, make sure you test every switch and electrical component. "The climate control system's display screen can fail, causing distorted readings through a loss of digits," says Chris. "Window regulators like to fail without warning. The fix isn't expensive," he adds, "but a knock-on effect of poorly executed remedial work is a compromised membrane behind the door card." The result is unwanted moisture released into the cabin. Make sure all audio equipment and electric seat functionality is free of fault.



## TALKING SHOP

PIE Performance keeps a strong stock of low mileage Porsches as sales cars and regularly acquires pristine 996 Turbos, including the car on these pages. View the firm's online showroom at [pieperformance.co.uk](http://pieperformance.co.uk)



## ...AND ANOTHER THING!

The 'Mezger' engine is a strong unit capable of big miles without complaint if treated right, but clutches on 996 Turbos with manual transmission can take a pasting. "The slave cylinder can fail," Chris tells us. "It's a complaint you'll be able to detect through pedal creep." Despite this frustrating fault, he doesn't think of it as enough to favour Tiptronic. "Turbos with manual gearboxes are in higher demand, as indicated by their higher values. If you've got enough cash to be able to buy a manual Turbo over Tiptronic, then do it. You'll be rewarded with a more engaging driving experience and you'll have made a far better investment." What about modifying? "It sounds like a cliché, but unless you're preparing the car for track work, I'd recommend leaving everything exactly as Porsche intended. Replace worn parts with OEM-specification components. Most of all, ensure alignment is set up correctly and any tired suspension items are renewed. A 996 Turbo with compromised road manners is a 911 far from fulfilling its role as a capable supercar."





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914 RESTOMOD

# THINK TWICE

Equipped with a 911 SC's three-litre flat-six, this wide-arched 914 has the power to shift opinion...

Words **Dan Furr** Photography **Dan Sherwood**









**R**ichard Attwood, the veteran racer who brought home Porsche's first Le Mans win, says he hasn't set foot inside a 914 for almost fifty years. "Given a choice between the Targa-topped roadster or a 911 as a practice car prior to racing, you wouldn't find me running away from the 911," he tells James Puttock, owner of the wide-arched Signal Orange GT evocation sitting outside the Porsche Experience Centre at Silverstone. Richard, it must be said, is known for being a harsh critic – his honesty is one of the reasons he's always been popular with race engineers and pit crew – and James is understandably concerned his 914 might end up being on the receiving end of a negative review from the former works racer following his appointment as tutor for James's impending driver coaching session. Nothing could be further from the truth.

Five decades may have somewhat clouded the memory. "I wouldn't say Richard ate his words, but he was genuinely surprised at how well my 914 handled. He said his lasting impression of the model from his days racing when it was a new car was nothing like what he experienced from behind the wheel of my GT evocation. He was genuinely taken aback by how well balanced it was," James smiles, although he shouldn't be too surprised at the ability of Porsche's classic roadster to change opinion. After all, by his own admission, he "hadn't looked twice" at the model prior to being taken out for a spin in a mate's modified example a few years ago.

"I traded a 1972 911 2.4 E in exchange for a faithful Carrera RS 2.7 replica built by the guys at Dorset-based air-cooled Porsche restoration specialist, Canford Classics," says the film and television translation operative. "I've had plenty of use out of the car in the UK and overseas, taking part in many historic racing competitions. As 911 prices have crept up, however, I've been made acutely aware of the financial value of the car and the significant cost of losing it to an accident. To my mind, Porsches are there to be used, and while I don't intend to treat my 911 as a garage queen, I want to avoid causing it damage in a racing environment."

## HUNTING GROUND

The solution was to begin the hunt for a second classic Porsche which could be used in anger at the track. "I'd dismissed the 914 prior to time spent in my mate's car, which had been treated to a 2.2-litre flat-six conversion. I was amazed at how well the little Porsche handled around the twisty country lanes we were bombing along. The car was super-quick!" The afternoon served to open his eyes to the merits of the mid-engined air-cooled classic, leading to his decision to search the classifieds for 914 a short while later.

"Europe was the obvious place to start looking, but the truth of the matter is the 914 was far more popular in the United States," James concedes. Furthermore, there's a big community of 914 owners and parts suppliers across The Pond." He registered with the US-based 914world.com online forum and published a post outlining his hope of finding a 914 already converted to GT specification. "You're going to have to be patient!" was the response he received after announcing his requirements. Nevertheless, he was soon alerted to the availability of a number of potentially suitable cars. "For one reason or another, none of them fit the bill," he

sighs, citing misinformation, bidding wars and the high risk involved in buying a car without seeing it in the metal as key obstacles in securing a successful purchase.

The model known as the 914/6 GT was a race-oriented version of the 914/6 (so-called because it featured a two-litre flat-six in place of the standard model's flat-four) optioned with Porsche's GT racing package. Immediately identifiable by its boxy steel wheel arches, the model surprised crowds at race circuits through impressive performances, including a sixth overall finish at the 1970 24 Hours of Le Mans – the very race 917 pilot, Attwood, and his co-driver, Hans Herrmann, secured the first of Porsche's many overall wins at Sarthe. The 914/6 also wowed at the same year's Marathon de la Route, a Nürburgring-hosted endurance race lasting eighty-six hours. Staged between 1965 and 1971, the event's exceptional distance was chosen to reflect that of the Liege-Rome-Liege Rally, hailed as one of Europe's toughest rallies. Having completed the punishing test of man and machine for Mercedes, as well as the later Liege-Sofia-Liege rally, Porsche

## THE 911 SC ENGINE WAS JOINED BY A REBUILT 901 TRANSMISSION FITTED WITH RACE RATIOS

works driver, Dieter Glemser, described it in the following terms: "at some point, after four days and four nights, you'd cross the finish line completely exhausted and often almost unmoved by the proceedings, a result of covering more than 5,000 kilometres in just ninety hours." Porsche test driver and racer, Herbert Linge, also noted that "anyone who could get sleep as a co-driver, including Paul Ernst Strahle, who managed to do so in my car, was at a distinct advantage. Unfortunately, I just couldn't manage it!" After safety concerns regarding running the rally alongside regular traffic were raised, organisers turned to the Nürburgring. The Marathon de la Route was born.

Porsche entered a 911 R featuring a new Sportomatic gearbox in 1967, recording a convincing victory with Hans Herrmann, Jochen Neerpasch and Vic Elford at the wheel. Three 911 models were at the head of the pack in 1968, with Glemser, Linge and Willi Kauhsen ultimately taking first place. In 1970, Porsche wanted to put the sportiness of the 914/6 to the test. The race was subject to strict regulations,





## HIP TO BE SQUARE

Striking 914 design features include a very long wheelbase, short overhangs, a removable roof centre panel (made from glass fibre-reinforced plastic) and a wide safety bar. At the time of launch, the model was available with a 1.7-litre flat-four from VW or a two-litre flat-six from Porsche.



**Above** Steel wide wheel arches and orange paintwork bring to mind the 914s entered into 1970's Marathon de la Route race



such as a rule limiting pit stops to a maximum duration of sixty seconds. Even if a car was only a few seconds over, a lap would be taken off the total number accrued at race end. Given that it took around thirteen minutes to complete a single 28.3-kilometre circuit of the North and South Loops, this was seen as a harsh penalty. Thankfully, while refuelling and driver changes had to be completed within the one-minute window, tyre changes were not, leaving the door open for Porsche to exploit the rulebook with a tactical masterstroke: when it was time for a tyre change, the driver stopped the car in front of the entrance to the pit lane. He then loosened all but one of the wheel nuts, removed them and placed them in his overalls. With each of the wheels secured by only one nut, he subsequently drove up to his pit crew. Once the team had changed the tyres, the driver brought the car to the exit of the pit lane before securing the remaining nuts!

## TOP TRUMPS

Thanks to the use of hard tyres, only one change was needed during the entire race, enabling the six-cylinder 914 to show the world what it was really capable of: a one-two-three finish perfectly demonstrated the plucky roadster's abilities. The winning trio of Gérard Larrousse, Helmut Marko and Claude Haldi completed a total of 360 gruelling laps, »

**Right** BF Torino seats are the perfect choice for this 914's neatly refurbished interior





with the remaining 914/6s running close behind. These cars were driven by Björn Waldegård, Aake Andersson and Guy Chasseuil, and by Claude Ballot-Léna, Günter Steckkönig and Nicolas Koob respectively.

More than forty years later, James was beginning to lose faith in the notion of being able to secure a suitable 914 to call his own. Thankfully, before he gave up on the idea, Lady Luck played a blinder by presenting him with the 914 he would go on to import to the UK. Boasting just three owners from new and originally built as a two-litre car in 1974, it had been fully restored in the early 1990s. Then, in 2012, a historic Porsche racing specialist (the owner of several short-wheelbase classic 911s) converted the car to six-cylinder power by fitting the three-litre engine from a donor 911 SC. Completely overhauled and treated to JE forged pistons and Weber carburettors, the engine was joined by a rebuilt 901 transmission fitted with race ratios, including a longer first gear. GT-aping equipment fitted included a chassis strengthening kit, bigger brakes and a front-mounted oil cooler. Finished in dazzling coat of OEM Ivory White, the car wanted for nothing. James didn't think twice about arranging for it to be shipped to Blighty.

"In many respects, the car was perfect," he tells us, recalling the inspection he subjected the new arrival to after its arrival at Southampton docks. "The extensive engine and chassis upgrades meant most of the hard work had been done, yet I needed a wider track width for circuit use, which meant bigger wheels and wider wheel arches. I also wanted the car's styling to pay tribute to the trio of Signal Orange 914/6 GTs which triumphed at the 1970 Marathon de la Route."

Serious bodywork alterations were required. There was also the not insignificant matter of applying a fresh lick of paint in a completely different colour. Fortunately, help was

**Below** Tuned 911 SC engine is a snug fit inside the 914's tight engine bay

at hand. "I'm good friends with Richard Morgan, owner of Electric Classic Cars," continues James, namechecking the modifier who built the all-electric 1979 911 SC Targa in the October issue of *GT Porsche* (order a copy at [bit.ly/issuesgtp](http://bit.ly/issuesgtp)). "He has plenty of experience racing, rallying and tuning 914s, and being based in Wales, he's able to take advantage of a huge number of rally car and bodywork specialists located close to the Electric Classic Cars workshop."

Richard acted as project manager for the desired changes, which saw James dash to Germany and back for fibreglass GT bumpers, sills, valances and oil cooler scoops from aftermarket parts specialist, FSH, before sending each component to Wales along with a new set of steel wide wheel arches. Rally car preparation specialist, Harry Hockly Motorsport, was given the job of fitting the curvaceous panels, as well as fabricating steel sill extensions to match the contour of each revised wing bottom.

## CLASSIC PACKAGE

A flat-four feels cramped in the confines of a 914's engine bay, so you can imagine how tightly packed it is with a six-cylinder lump bolted into place. Routine maintenance often involves dropping the engine, something James is keen to avoid. "A hole was cut in the bulkhead to enable easy access for belt changes," he reveals. Continuing the theme up front, a louvered panel was installed where the car's air-conditioning pump usually sits, enabling air to pass through the oil cooler and out through the floor. Additionally, safety harness anchor points were welded into place before the car was painted in its flawless covering of Signal Orange. The routing of heat-resistant oil cooler pipes through the car's fresh bodywork was completed thereafter.

With a Classic Retrofit CDI+ ignition unit upgrade, a RennShift short shifter, BF Torino seats, wide Minilight rear wheels, Toyo Proxes R888R street-legal track tyres and an order placed for a Safety Devices roll cage, the reborn 914 was handed to classic Porsche specialist, Maxted-Page, for a fuel system tweak, including a rebuild of the carburettors and the installation of a Holley high-flow fuel pump. The result is an estimated 210bhp. Since that time, James has enjoyed familiarising himself with his trick track toy, a 914 which handles like it's on rails. "Anti-roll bars front and rear, plus Koni suspension certainly helps," James smiles, recognising how swift his Signal Orange sensation is and how much he's looking forward to exploring its capabilities during additional track time at Silverstone, as well as a planned outing to Spa and on future visits to the Le Mans Classic. The car was also a popular fixture of Porsche Club GB's super-colourful 914/50 static display at the Brooklands Motor Museum, a recent gathering celebrating fifty years of the model and featured in the last issue of *GT Porsche*.

If you're looking for a route into air-cooled Porsche ownership which won't deplete your bank balance as severely as the purchase of a classic 911, then you'd be well advised to consider acquiring a 914. It's a brilliant roadster offering a lot of fun in stock trim, but as James's track toy proves, with a few choice modifications, the terrific two-seater has the potential to surprise even those who may have previously dismissed the model. Don't believe us? Just ask Richard Attwood!





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# DIFF'RENT STROKES

Dan's 944 Turbo's active ingredients now include a Quaife ATB limited-slip differential...



DAN FURR

**W**ith the not insignificant challenge of remedying my 944

Turbo's bad bodywork taken care of, it was time to start overhauling the car's mechanical components. A compression test suggested the engine was in fine fettle despite years of inactivity, leading Nash Hunter (boss of transaxle servicing, modifying and restoration firm, Retro Restorer) to treat the 2.5-litre lump to all new seals, belts, fluids, filters and service equipment without having to worry about taking the engine apart. After a mountain of vintage aftermarket security system wiring was removed, the force-fed inline-four fired up without issue and was happy to drive in and out of Nash's Banbury workshop under its own steam, although further evaluation will take place following shakedown

subsequent to the passing of the car's first MOT test since November 2011.

With the engine seemingly in good health, it made sense to overhaul the transmission, a task providing the perfect opportunity to fit a Quaife ATB limited-slip differential. Unlike a conventional plate-type differential, Quaife's design relies on gears rather than clutch plates, ensuring smoother operation and the elimination of harsh locking. There are huge benefits to using a Quaife ATB limited-slipper (proved time and again in drag racing, rallying, circuit and fast-road driving environments) when compared to a standard open differential, which is why I set off cross-country with diff and camera in hand to visit Nash and my resurrected red road racer.

## STUCK FAST

A Quaife ATB can't be fitted with the host vehicle's gearbox attached to the car, a fact forcing Nash to wrestle



**Above** And to think this gorgeous 944 Turbo was dragged out of a hedge!



**Left** New Quaife ATB differential and a genuine Porsche gearbox transponder and diff bearing from the Design 911 store







**Far left** Knackered bolts meant taking the gearbox casing apart required care and patience

**Left** The outgoing bearing certainly left its mark!

with my 944's cog cruncher prior to my arrival at his workshop. After liberating the five-speed unit from where it was comfortably bolted into place, he then had the unenviable task of grappling with seized and corroded bolts holding the transmission casing and bellhousing together. The parts proved difficult to separate, but after much cursing, the 'box was split and work could begin removing the factory open differential (no M030 option here, I'm afraid) ready for the installation of the shiny new Quaife kit.

With the gearbox out of the car and sitting safely on a solid workbench, »





**Above** Porn for those of you who like looking at 944 gearbox internals

## WHAT EXACTLY IS A QUAIFE ATB LIMITED-SLIP DIFFERENTIAL?

If you're after serious grip and enhanced performance on the road or at the track, you're the kind of driver who should be investing in a Quaife ATB limited-slip differential. ATB – which stands for Automatic Torque Biasing – diffs have been in continuous production since the 1980s. The ATB product range caters for hundreds of applications, spanning makes and models of car from Alfa Romeo to Volvo. Trusted by Ford for three generations of Focus RS and the new Fiesta ST, BMW for the Mini JCW Challenge, General Motors, Chrysler, Lotus and many other manufacturers as essential OEM equipment for high performance model lines, ATB diffs are renowned worldwide for their effectiveness, quality of construction and reliability.

The unit works by biasing torque to the driven wheel with the most grip. It's a gear-loaded differential, meaning it's extremely strong and is smooth in operation. When one wheel starts to slip, the helical gears inside the differential begin to rotate with speed proportional to the torque of the wheels. Excess torque is then reduced on the wheel which is slipping. At the same time, torque is increased on the wheel with the most grip. The effect of this activity is that unwanted wheel slip is vastly reduced, resulting in low levels of understeer, more controlled oversteer and noticeably improved acceleration.

Thanks to the advanced design of a Quaife ATB diff, there's no friction. In other words, an ATB diff contains no parts susceptible to wear. This makes it a true 'fit and forget' product for your Porsche. Besides, you can take comfort from the fact there's a lifetime warranty supplied with each Quaife product, even if you're using the part for track day action or professional motorsport.





**Left** The crown wheel is removed from the old diff and fitted to the new Quaife ATB



the fun part of the job could begin. I'd ordered new bearings, seals and a new genuine transponder from Design 911, which was just as well, because it became immediately apparent the old Porsche parts had seen better days. With the offending bearings removed, the original differential came out quickly and easily. Then came the job of switching supporting equipment between diffs.

## MAKE SHIFT

When fitting a Quaife ATB, the toothed-ring pump drive for the transmission oil cooler and the crown wheel need to be carried over from the outgoing diff to the new part. All bolts need to be thread-locked and torqued correctly. With this work covered and the new bearings secured, the new differential can be offered up to its new home. Nash checked to make sure the crown wheel was meshing together properly with the rest of the transmission, at which point it was time to start the process of reassembling the gearbox, which Retro Restorer apprentice, Jacob, »





**Left and below**  
Crown wheel bolts need to be correctly torqued and thread-locked before the new differential is fitted



**Left** Every factory rubber bush is to be replaced with a Powerflex purple polyurethane part

spent time freeing of much muck generated by the many years my car spent stuffed into a hedge bordering the previous owner's garden. Glamorous stuff, this Porsche lark!

New bolts and sealant were used during reassembly, but we're not ready to refit the gearbox just yet – while Nash was playing with the underside of my turbocharged transaxle, we decided now would be a good time to fit the new suspension equipment I've amassed in recent months. To start with, Jacob busied himself with the installation of Powerflex front wishbone bushes, removing tired, stubborn rubber bushes before cleaning each lower arm and installing the new polyurethane parts. This part of the process preceded the removal of anti-roll bars and rear suspension equipment ready for powdercoating. The car's cylinder head cover is to get the same treatment.

All things considered, it made sense to pull together a stack of parts for the coating company to blitz at the same time. Plus, I've ordered new wheel bearing assemblies from Heritage Parts Centre in preparation for when the refreshed hardware is ready to be pushed back into place alongside the brand new GAZ GHA coilovers waiting patiently in the wings. More next month.

## THANKS

**Retro Restorer**  
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# THE ROAD TO REIMS

The 997's first stop en route to Lake Geneva



DAN FURR

**B**ack in 2015, I embarked on a 'seven countries in seven days' tour of Europe. Organised in partnership with a magazine I was contributing to, the event hosted more than thirty cars ranging from new Porsches to old Fords. The format of the road rally was pretty standard, with a clearly defined start and end point for each day, allowing participants to choose how they reached each destination. The majority of those driving newer cars whizzed from A to B in the quickest time possible, hoping to bask in whatever the target town or city had to offer, whereas those of us in older cars (I was driving my better half's modified classic SAAB 900 Turbo drop-top) took 'the long way round', navigating our way along whatever amazing driving roads we could find. As a case in point, when travelling from mid-France to Monaco,

many of us took the legendary Route Napoléon from Grenoble, carving our way through the very same mountain roads taken by Napoléon in 1815 on his return from Elba. Others hit the nearest motorway.

In between each camp was a group who took little notice of amazing driving roads, and who didn't care for the target destinations presented by the trip's organisers. Instead, these guys chose to visit nearby landmarks they considered better suited to them than what the published itinerary offered. On the day of our drive from Monaco to Lake Como, for example, some of the gang sped off to Milan to go shopping, others visited Turin to trace the footsteps of characters in *The Italian Job*. I stayed put and took a leisurely wander around the harbour, downing ice cream like there was no tomorrow and eyeballing yachts. I may have also completed a dozen laps of the iconic street racing circuit!

On an earlier leg of the same trip, when travelling between Paris and Lyon, some of the more motorsport





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mindful guys took a detour to Gueux in search of the former Grand Prix road racing course. Located five miles outside Reims in the Champagne region of north-eastern France, the venue's grandstands and pit garages are still erect today and, being situated on a public road, can be accessed by anyone who takes time to find them.

### FLOAT THE BOAT

When mapping a route for my recent road trip to Lausanne, Switzerland, it was clear a stopover would be required after disembarking the ferry at Calais. Reims seemed like the perfect pit stop, not only because it took care of a fair chunk of the »



**Above** Pit boxes and grandstands are taken care of by a local trust dedicated to part restoring sections of the venue when funds allow



**Left** Don't worry, these loose bits of motorsport history were already on the ground inside one of the site's towers!









**Above** We're already looking forward to seeing the restored 944 Turbo on this exact spot before long



**Left** Take a wander and you'll soon discover the towers at Reims-Gueux are fully accessible

less interesting stretches of road needed to get to Lake Geneva in decent time, but also because it offered me the opportunity to visit the very same street circuit I'd seen in photographs so many times before. Without delay, I booked a room in the centre of Reims and looked forward to visiting the tired-but-colourful vintage grandstands.

While I realised the worn infrastructure was on the roadside and offered visitors the opportunity to get close to the very same blocks of concrete frequented by Fangio, Hawthorn, Moss, McLaren, Clark, Brabham, Stewart and many other well-known racing drivers, I had no idea the stands were completely accessible, to the point you can climb stairs to the top tower and take in a panorama of the entire site. A visitor centre and small workshops are situated nearby, highlighting the efforts of a local trust which has taken on the responsibility of part restoring different sections of the site, whenever funds allow. It's great to see such rich motorsport heritage cared for – Reims-Gueux was once known for being among the fastest circuits in the world thanks to long straights closing in on almost two miles each. It's probably this claim to fame that sees so many tourists scream past at breakneck speed today.

## SPEED DEMONS

Indeed, while I was pottering around the place, taking time to explore every building, high, low and at ground level, sports cars and superbikes with registration plates from all over Europe made themselves known by doing »





their best to cross the long disbanding finish line at record speed. Classic 911s, McLarens, Audis, M-badged Bimmers, Lamborghinis, Ferraris and other exotic machinery hammered by, each driver then returning at a leisurely pace to do exactly what I was doing. I guess there are no speed cameras on this stretch of road. Only a matter of time, eh?!

To my surprise, considering the huge number of mega-expensive four-wheelers flowing in and out of the former pit lane while I looked down from above, a high number of petrolheads took time out to gawp at my 997, seemingly unaware that I could see them from my vantage point in the heavens. When driving a 911, it can be easy to forget these are the supercars people lust after, regardless of whether the car generating attention is cooled by water or air. As many of you will attest, seeing others get enjoyment from your Porsche is a nice feeling. Well, until you remember the car is loaded with luggage, much of it on display. Perhaps I was looking through rose-tinted spectacles? Are these people really admiring my pretty Porsche, or are they actually thieves trying to work out how to break into my car and nick all my valuables? Yikes!

### ON WITH THE SHOW

Away from the grandstands, Reims itself is a lovely place. If you like the fizzy stuff, then you'll be pleased to learn a large glass of good champagne in Reims is less expensive than a small glass of crap wine in Lausanne! Ah yes, Lausanne, the target destination for this particular trip. Two days in Reims preceded the next stretch of driving, but having enjoyed wandering around the French city so much, I booked another couple of nights' stay to follow my return from Switzerland. I'll report back with photos from the next chapter in this exciting adventure in the January issue of *GT Porsche*. Subscribe by visiting [bit.ly/susbscribegtp](http://bit.ly/susbscribegtp)





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# SHOCKING BEHAVIOUR

A warm, dry workshop and limitless tea. This month's Flachbau project update should have been easy work for our man, Cowland...



**PAUL COWLAND**

I can only blame myself. "My Flatnose project is really starting to gather steam," I commented to a mate, remarking how easily various stages of the build were progressing. And so, with a spring in my step, I decided to tackle the car's suspension before fitting the previously mentioned restored bumper and new oil cooler. Less painted parts to scratch and extra room to fettle? It made perfect sense.

When working with any German car (or almost any other, for that matter), I invariably look at the Bilstein product catalogue for suspension solutions. Not only is this greatly respected brand a serial supplier to Porsche, but Bilstein also manufactures some of the best aftermarket upgrades, making an older Porsche handle as good as it

did when it was new and, in many cases, even better.

I rang my old mate, Aaron Quilter, a man serving as Bilstein UK's Sales Manager, for advice regarding a fit for purpose suspension solution for my Flachbau. His first suggestion? "Whip off the front wheel and see if the car is riding on Boge dampers," he offered. "If Boge is what's on there, I can get replacement Bilstein inserts sorted in around a week." This sounded great to me and, as luck would have it, despatching the fronts revealed the Boge legend displayed large on the damper bodies. Suitably assured, or so we thought, the order for new inserts was placed. A week later, Aaron invited me down to Bilstein UK's headquarters for a brew, a catch up and the opportunity to collect my car's new dampers. This was all going so well!



**Above** Don't quote us on this, but that engine lid stay may not be an original Porsche part



Fast-forward a week or so later, and I'd cleared a little space at Cowland Towers to work on the old girl. The front dampers are easy to access, but the rears? They're the exact opposite. The offside back damper can just about be accessed, whereas the nearside is a complete nightmare, requiring the removal of several bits of plumbing and hosing. The G-series 911 features many wonderful design facets, but take it from me, this ain't one of 'em!

Two brews in, I removed the front wheels and started to free the first damper. Thanks to my 911 spending most of its life as a California car, everything came undone easily





### BUMP AND GRIND

In the mid-1970s, USDM safety regulations demanded all new cars withstand a collision at 8km/h without damage when driving forwards or reversing. Porsche responded with impact bumpers and rubber protection blocks for the G-series 911.

enough — even before I'd reached the bottom of the mug, the whole unit was off and ready to inspect. Unfortunately, I could see trouble ahead. This was a Boge damper alright, but it wasn't the one I was expecting. The top mount seemed to be an amazing concoction of silicone and rubber donuts, whereas the damper body itself looked nothing like the new Bilstein units.

### HIDDEN IDENTITY

As I soon discovered, this was correct. The new inserts are designed to screw inside the old units, leaving a slightly scruffy looking outer, but having pristine, upgraded and »



**Facing page** Worn suspension parts confused Paul almost as much as trying to access the rear dampers







perfectly working Bilstein parts within. After looking at online fitting guides, it became clear I was faced with an involved job (one that would take a little longer than the couple of hours I'd allocated to sort it all out!). It seemed as though I'd be better off clearing one of my workshop's ramps in order to fully go at it. Besides, do I really want to stick a slightly rosey old damper body back into my car's newly painted and pristine front end?

I started to wonder about the possibility of either refurbishing the old Boge outer struts, or maybe even returning the new inserts in exchange for Bilstein's sexier complete legs. I'm not trying to not make this 911 some kind of concours rebuild, but I'm finding it hard not to perfect every little detail as the car goes back together. I've wanted a Flachbau for so long, it's hard not to make everything as good as it can be. Plus, with winter fast approaching and the car being retired from the road while councils cover their pothole-inflicted strips of tarmac with salt, I can take my time to make sure everything is exactly as I want it.

## WAITING LIST

And therein lies the bigger issue. When tackling challenging jobs like this, one thing always leads to another! As if to prove the point, I'm now considering a comprehensive rebuild of the car's brake calipers. Well, they've got to come off in order for the suspension work to be completed, so I might as well get them looking as good as new, eh? And if I'm doing that, I should probably swap the discs and pads. And the lines. How far do I go? Joking aside, the removal of chassis equipment provides me with a great opportunity to detail the inner wheel arches. Bear with me folks – this might take a while!



**Above and right**  
New Bilstein kit,  
complete with fresh  
front inserts for old  
Boge struts

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# SWAP SHOP

Mark waves goodbye to his 970 and welcomes a 971, but for how long?



**MARK WILLIAMS**

**S**ervice time has finally arrived for the Panamera, although it's not as straightforward as I'd like. I've discovered not all the required work is included in the service schedule, with items such as replacement drive belt, spark plugs and fresh brake fluid remaining outside the scope of work. I find this hard to fathom, considering how vital items like a drive belt can be. Porsche doesn't seem too concerned. Couple this apparent separate schedule to the fact that my Panamera's maintenance countdown is wrong (because a prior service was performed early) and some unpicking was required to establish exactly what was needed.

I already knew an oil service was due and had been carefully watching mileage before then putting in a request to Official Porsche Centre Swindon, but the car's computer was also suggesting an interim service in around 6k miles, with a major around 3k later. My plan was to take care of the interim service, including an oil change, in readiness for winter. Off went the email to Swindon.

"Dear Mr Williams," came the reply. "Your car needs an oil change, brake fluid, drive belt and spark plugs, plus a major service is due". Major service? Hold up, the car is declaring 9k miles to the next interval! Sensing my raised eyebrow over email, the service receptionist then patiently explained this minefield (possibly not for the first time) and we eventually established that the earlier major service had been performed at the minor interval (which we knew), but that the other 'non-schedule' items were now needed (which we didn't know). We agreed to proceed with the oil change and the extra items, with the 'balance' of the major service planned



to take place in a few thousand miles' time, closer to when the major service would actually be needed. This ensures all required jobs are completed. And at the time of writing, the car is still at Swindon having the work done. And breathe!

## THE LOW LIFE

The guys at Swindon are also going to look at the paintwork at the front of the car due to the fact it has suffered a fair bit of 'rash' in recent months. I know Porsches suffer with stone chips more than most cars – low noses and ground-hugging stance benefits aesthetics, but does nothing to resist flying debris – but it looks worse with each passing month. This is why Porsche adopts its 'paint correction' approach, which basically results in any pre-owned car from a main dealer sporting a front end which, to all intents and purposes, looks brand new. And so did my Panamera in 2017, but stone chips can now be seen. I've asked for a paint depth check to start with. I'll report back with findings in my next progress report.

I'd expected the usual Macan loan car whilst the Panamera was having all the above sorted, but I was pleasantly surprised to be handed the keys to a current Panamera 4 E-Hybrid,

**Above** Having previously declared he wouldn't want another hybrid, Mark is rather taken by his 971 4 E-Hybrid loan car

which I'm still enjoying. Home from home then, and the ideal opportunity to compare 970 to 971. I've driven the G2 Panamera previously and in various guises (including Sports Turismo and the discontinued 4S diesel), but as I've mentioned before, there are one or two areas where life with a 970 hybrid serves only to frustrate. Having to restart the car each morning if you step from the vehicle without the engine running for more than a moment is, frankly, irritating, but the 971 answers this complaint by permitting the driver to actively select when the engine operates. In the 970, pressing the Sport button doesn't always fire up the V6, but a rotation of the drive mode selector in the 971 starts the engine without delay. I'd even go as far as to say it's a car I could happily live with. Watch this space... ■

**Below** There's, er, definitely an engine in there somewhere





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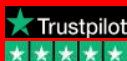
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# DROP THE HAMMER

From chump change to premium price tags, here's our look at what's hot (and what's not) in auction rooms...

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**SEE PAGE 64  
FOR DETAILS**



## 1992 928 CLUB SPORT

One of only 1,923 968 Club Sports produced, this former factory press car was featured in numerous magazines, including *Auto Bild*, *Auto Motor und Sport* and *Auto Zeitung* (you can now add *GT Porsche* to the list!), with star drivers including Porsche brand ambassador and two-time World Rally Champion, Walter Röhrl.

Offered from eighteen years of single ownership and accompanied by a massive history file, this Speed Yellow stunner's logbook shows an unusually high delivery mileage figure of 143 miles,

pointing towards a more rigorous factory testing process than usual. In late 1993, the car was sold to its first private owner, Gerhard Sattler of Heidenheim, Germany, with two further continental European owners adding their name to the car's paperwork prior to Porsche dealer and ten-time Le Mans competitor, Nick Faure, importing the track-focused transaxle to the UK in 1997. He kept the car for eighteen months.

Two further owners and two further years later, the not-so-mellow yellow Club Sport was treated to a top-end engine

build, new flywheel and a new clutch at marque specialist, Parr. Another two years passed before the nifty 968 found its way to its most recent owner, with the car subject to fastidious maintenance thereafter, covering an extra 31k miles in the process. A refresh of the suspension, a new clutch, another top-end overhaul (less than 10k miles ago) and new timing equipment, not to mention a refresh of the brakes within the past six months, made for an attractive proposition when the car was offered at RM Sotheby's London sale just before we went to press.



## 1991 944 S2 CABRIOLET

Finished in Grand Prix White with Metropole Blue interior (we'll admit, it's an acquired taste), this top-down transaxle has covered just 98k miles from new, with £700 recently invested in preparing the car for a fresh MOT and realignment of the perfectly presented mohair roof. The three-litre engine (the largest displacement inline-four of its day) and five-speed manual gearbox operate faultlessly, and the car's careful storage amounts to bodywork free of corrosion. Offered by H&H at Duxford's Imperial War Museum, the car wowed those in attendance, but a £10k lower estimate and slowing of Porsche auction sales worldwide were responsible for this super S2 failing to find a new home.



SOLD FOR  
£63,000



## 2015 981 CAYMAN GT4

A rare, right-hand drive Cayman GT4 with only 4,277 miles covered, this Carrera White wonder features twenty-inch alloys painted satin black and was optioned with Porsche Communication Management (PCM), carbon interior trim, Sport Chrono, bi-Xenon headlights and Sound Package Plus when new. First registered on 16<sup>th</sup> October 2015 and enjoyed by two previous owners, the car

was recently treated to an intermediate service at Porsche Centre Silverstone and was fitted with new tyres prior to being offered at the Silverstone Auctions Porsche Sale a few weeks ago. Black hide with Platinum Grey stitching make the cabin a comfortable place to be, with the overall package being as close to a brand new 981 GT4 as you're likely to get. Little wonder the car sold quickly.

## 1978 928



Another auction, another unsold classic Porsche. This time, it was the turn of an early 924 to return home with its seller. A stunningly restored S-plater, painstakingly rebuilt by Paul 'Woolie' Woollard at transaxle spares specialist, Woolie's Workshop, the two-litre, front-engined, water-cooled coupe is accompanied by a bulging folder of paperwork, including receipts for paintwork amounting to over £4,500. A mechanical overhaul was completed, including a rebuild of the engine, brakes and suspension. Showing 95k miles from new and steeped in history to confirm the figure, this early 924 was offered at the Classic Car Auctions October Sale.





## 1998 996 CARRERA 4

If you're looking for a low-cost entry into 911 ownership, then this is it. Finished in Ocean Blue with a Graphite Grey leather interior, rolling on 997 multi-spokes and equipped with a six-speed manual gearbox, this all-paved 996 boasts a service history featuring nine stamps from Official Porsche Centres and a further four from recognised independent specialists. Showing 94k miles from new and first registered in 1998, this cool Carrera 4 was presented with an original book pack and tool kit. With its seller for more than three years, the 3.4-litre hard-top was pitched at the Classic Car Auctions October Sale without reserve, allowing the lucky buyer to coin a Stuttgart-crested bargain.



SOLD FOR  
£12,833



## 1986 944 TURBO

We were amazed to see this Kalahari Beige 944 Turbo sell for such a low price when it appeared at the same auction as the 996 at the top of this page. Ordered new by Porsche Hong Kong, but delivered direct to the UK from Porsche in Germany, the turbocharged transaxle was optioned with a long list of desirable cost options, including rare twin-tone brown cabin furniture (featuring fabric seat centres decorated with Porsche script), limited-slip differential and forged

Fuchs alloys. Initially serviced by PDI in Germany on 3<sup>rd</sup> December 1986 and arriving on the UK on 17<sup>th</sup> February 1987, the car would go on to find a home with serial Porsche modifier, John Bone, who fitted GAZ adjustable dampers and a Clubsport steering wheel before the car starred in an *Ultimate Porsche* magazine feature back in June 2017. A regular sight at club events, this Fuchs-riding retro road racer is undoubtedly this month's bargain buy. If only we'd seen it sooner...

## 2008 997 GT3 CUP



Delivered new to racing driver, Anthony Beltoise, in 2008, and entered into the Porsche Carrera Cup Championship in France wearing the colours of Team Sofrey ASP, this 997 GT3 Cup would help Beltoise become series champion after seven rounds of action. Following lack of use up until 2012, the car was transferred to a new owner, who raced his new GT3 as it was, complete with battle scars earned with Beltoise at the wheel. Remaining in similar configuration to when it first raced, this raucous 997 has taken part in several private competitions in the past few months, including events organised by Porsche. Recently serviced by Stephane Doga, the mechanic responsible for the car back in 1998, this superb 997 has covered just 6k miles and was pitched as ready to race when offered at October's Artcurial race car auction in Paris.





# GT PORSCHE

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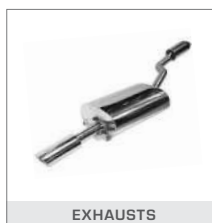
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