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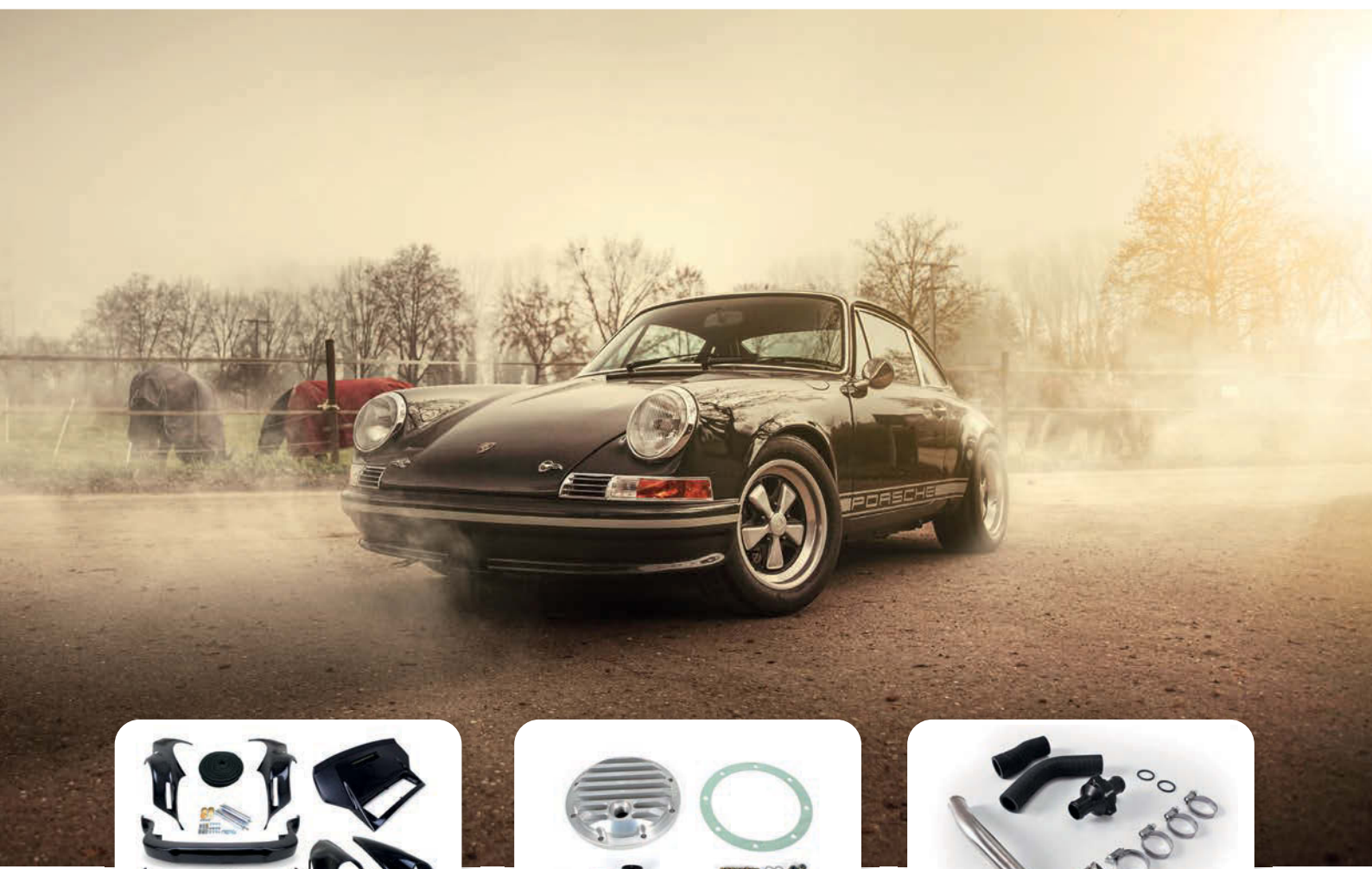
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Classic PORSCHE

Kelsey Publishing Ltd, The Granary, Downs Court, Yalding Hill, Yalding, Kent, ME18 6AL, United Kingdom

EDITORIAL

Editor: Dan Furr, dan.furr@kelsey.co.uk

Contributors: Shane O'Donoghue, Karl Ludvigsen, Dan Sherwood, Sharon Horsley, Johnny Tipler, Alex Manos, Rich Pearce, Andy Prill, Adrian Brannan, Stephan Szantai, Sean Smith, Robert Smith

ADVERTISING

Group Advertising Manager:

James Stainer, 01959 543515 or 07948 802130

james.stainer@kelsey.co.uk

MANAGEMENT

Chief Executive: Steve Wright

Chief Operating Officer: Phil Weedon

Managing Director: Kevin McCormick

Subscription Marketing Director: Gill Lambert

Retail Director: Steve Brown

Print Production Manager: Georgina Harris

Print Production Controllers: Kelly Orriss and Hayley Brown

Subscriptions Marketing Executives: Dave Sage and Claire Aspinall

Affiliate Marketing Manager: Kate Chamberlain

Publisher: Gareth Beesley

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NEXT ISSUE ON SALE
FRIDAY 14TH OCTOBER



AGAINST THE NORM



From the very beginning, Porsche products have been personalised by their owners, not only in terms of functionality, but also form. Porsche itself got in on the act beyond dealer options lists — the founding of Stuttgart's Sonderwunsch (Special Wishes) department was the manufacturer's way of pandering to the weird and wonderful requests from its well-heeled clientele. Walnut trim? Step right this way, sir. Ferrari paint job? Not a problem. Flat-nosed front end for your 911 Cabriolet? Consider it done.

More often than not, Sonderwunsch builds were invite-only, a reaction to Porsche recognising the deep pockets of individual brand loyalists the company wanted to keep for the long-term. I've had the pleasure of spending time in charge of a number of Sonderwunsch cars. Each has an interesting tale to tell, though it's fair to say this is true of any Porsche from the

air-cooled era. After all, a car doesn't survive the highs and lows of market values across many decades and, as is likely the case, pass through the hands of multiple owners without racking up a few stories along the way.

This issue's cover star is a case in point. At first glance, it looks like a faithful replica of the 1970 Tour de France 911 ST campaigned by Gerard Larrousse and Maurice Gelin, but this extraordinary air-cooled classic started life as a late 1966 two-litre 911 S. Forward-dating, rather than backdating, is at play.

We couldn't point our cameras at a selection of personalised Porsches for this magazine without paying tribute to the work of the aforementioned Sonderwunsch (and Porsche Exclusive Manufaktur) programme. To this end, we've got our hands on what's believed to be one of only twelve 964 Turbo S 3.6 Flachbaus configured in right-hand drive. This particular example is one of just two finished in Speed Yellow. It's a fascinating machine, though we are acutely aware it's not necessarily one for Porsche purists, even if it was produced by the company's own craftsmen. Then again, life would be pretty boring if we all drove the same car, wouldn't it?! Enjoy the magazine.



Dan Furr Editor
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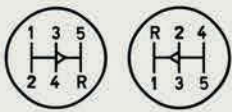
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A DIFFERENT SLANT

They don't come much rarer than this 964 Turbo S 3.6 Flachbau, believed to one of only twelve configured in right-hand drive by Porsche Exclusive Manufaktur...

Words Johnny Tipler Photography Rich Pearce







You have to be into aerodynamics to love the Flachbau (otherwise known as slant-nose or flat-nose) bestowed upon certain 911s of a competition bias and echoed in a handful of road-going models. In this case, a 964 Turbo

S 3.6. It's obvious, really, because this distinctive body styling goes against the aesthetic grain for admirers of the traditional upright headlight stance and rotund front wings (fenders to our US readers) which graced the 911 for three decades, from its outset in the early 1960s to the introduction of the smoothie-chops 993, taking in the 964 along the way. Here's how our star car came about.

The 3.6-litre version of the 'standard' 964 Turbo arrived in 1993 — right at the end of the model's production life — replacing the 3.3-litre model which superseded the long-running classic 911 Turbo (930) in 1990. In part, increased displacement was a reaction to disappointment some felt at Porsche's decision to carry over the 930's flat-six with minor revisions for 964 Turbo model launch, even though the newer iteration of the engine ran smoother and was less prone to lag. The original 964 Turbo was more powerful than its predecessor, too, developing 316bhp at 5,750rpm.

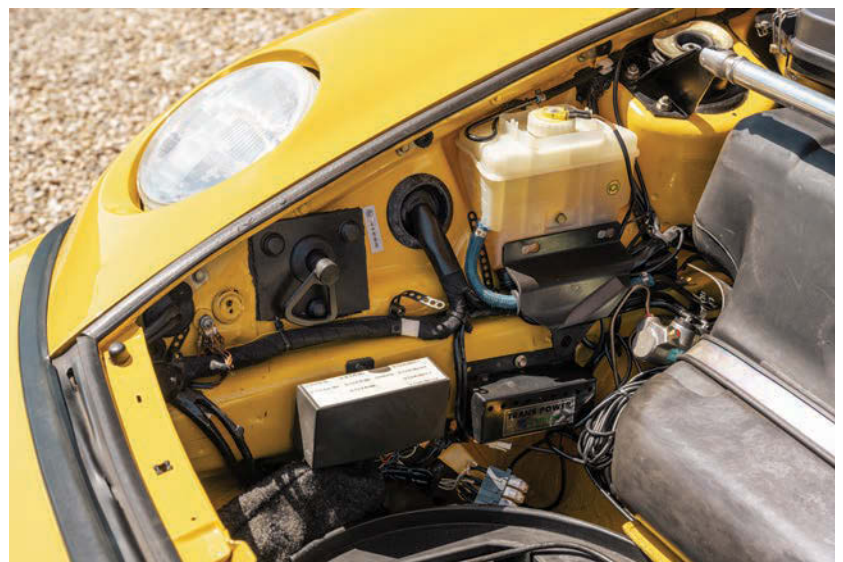
In 1992, Porsche upped the ante with the introduction of the 964 Turbo S. Essentially, the S badge meant the standard Turbo had been modified to produce 376bhp by way of bigger fuel injectors, reprofiled camshafts and updated ECU software. The interior was stripped, thereby reducing weight, and the handling was improved through the appointment of a dropped ride height and a front strut brace. All in, Porsche had produced one of the period's fastest road cars. Eighty-six examples rolled out of the factory.

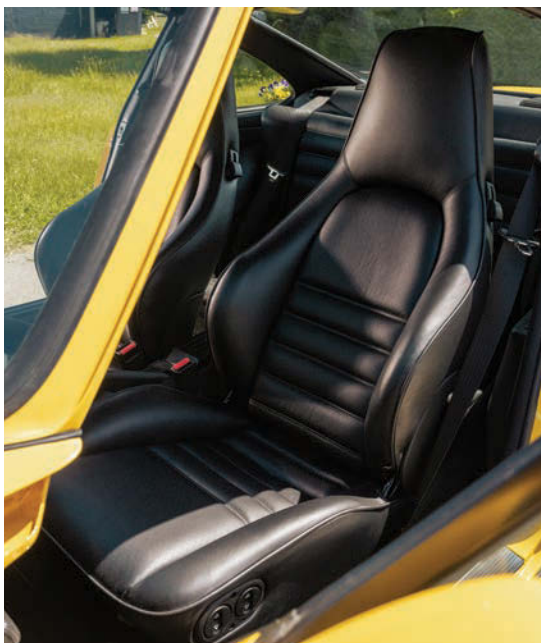
A year after the arrival of the original 964 Turbo S, Porsche presented what marque enthusiasts had hoped

for from the beginning — the 3.6-litre 964 Turbo, pumping out 355bhp at 5,500rpm and 384lb-ft torque at 4,200rpm. Equipped with a stronger clutch, limited-slip differential, ride height lowered by ten millimetres, Speedline split rims and 'big red' brake calipers to keep the increased performance in check, this new Porsche quickly became one of the most sought-after of all 911s. Moreover, it became the poster car for a generation of marque enthusiasts, primarily thanks to the scene-stealing appearances of a late black 964 Turbo 3.6 in the Michael Bay-directed Will Smith and Martin Lawrence buddy cop action flick, *Bad Boys*.

As Porsche wound down production of the 964 Turbo 3.6 in late 1993, a final batch of ninety unsold coupés was wheeled over to the Zuffenhausen factory's Exclusive Manufaktur department for conversion to S specification. This centred on the X88 engine option,

Above and below 968 parts bin was largely responsible for the look of the front end





Above and below Bright red carpets and wood trim have made way for tastefully retrimmed replacement parts, the originals kept in storage

uprated with a larger KKK turbo, higher boost, a more efficient intercooler, modified cylinder heads with larger ports, increased-capacity fuel injectors and higher-lift camshafts allied to advanced timing. The air-cooled M64/50S X88 flat-six was derived from the 3.6-litre race engines built by Andial for Brumos Racing's IMSA campaign and the Bridgestone North American Supercar series. 385bhp was produced at 5,750rpm, a hike of almost thirty ponies more than the standard Turbo 3.6. The sprint to 60mph was delivered in less than four seconds, the standing quarter-mile in twelve seconds.

All X88 engines had their special designation stamped on the alloy engine cases. Transmission was via a Getrag G50 five-speed manual gearbox with ZF forty-percent differential lock. Standard Turbo 3.6 suspension was the order of the day, including 21- and 22mm anti-roll bars front and rear, with Boge shocks and struts.

If you happened to order a 964 Turbo S 3.6, you were offered Flachbau styling as a cost option. As you can probably guess, the bodywork was mostly hand-crafted and therefore very expensive – US market 964 Turbo

S 3.6 Flachbaus set buyers back an additional \$60,000 on top of the \$99,000 cost of the base car. Different territories were given different option codes: ten X83s went to Japan (all finished in Polar Silver), twenty-seven X84s were sold to non-US customers and thirty-nine X85s found homes in the United States.

ILLUMINATING DESIGN

The most obvious signifiers to the 964 Turbo S 3.6 Flachbau were, of course, the prone headlights, which were retractable, but uncovered and sourced from the 968 parts bin, from where they were standard issue. The flattened front wings (another nod to the 968) were a heads-up to the massaged-out styling of the incoming 993, for which we have to thank Porsche styling wizards, Tony Hatter and Harm Lagaaij. There was a revised front splitter, asymmetric 959-style air scoops in both rear quarter-panels, a louvered rear wing housing the intercooler, plus quadruple exhaust tips. The eighteen-inch three-piece Speedline wheels measured eight inches of width at the front and ten at the rear, shod with 225/40 and 265/35 Michelin Pilot Sport tyres.

This particular 964 Turbo S 3.6 Flachbau, chassis no.470438, is finished in Speed Yellow set against stark black leather upholstery, black carpeting and a black headliner. Predictably, all examples assembled were heavily optioned. Original equipment in this instance includes electric sunroof, power windows, air-conditioning, a rear wiper, headlight washers, four-exit exhaust, velour-lined front luggage compartment and an additional oil cooler. The engine cover proclaims Turbo S in black script and the aforementioned red calipers are visible behind the polished Speedlines. Currently on sale at Ashgood Porsche, located in the environs of Heathrow and, for our benefit, previously denizens of Chobham test track, the car has had three previous owners and has covered just twelve thousand miles. It even retains its original undercoat of sprayed Cosmoline wax.

Having sat in a private collection since 2012, this custard-coloured 911 was recently recommissioned





by Paul McLean at Andover-based Porsche RS and race car sales specialist, GT Classics, hence the new Michelins. The full complement of ancillary tools (jack, spare wheel and the like) is present, as is a compact disc multichanger and a centre console with storage for eight of your favourite cassettes, though this is largely redundant on account of the retro-look Blaupunkt Bremen SQR 46 DAB head unit nestled in the dashboard. As you'd expect, the original handbooks and service history paperwork accompany the car. What might surprise you is that you're looking at all-original paint, apart from the front bumper and a small local repair to the bottom right-hand side of the driver's outer door skin.

If this 911 looks familiar, you may have seen it make an appearance in the May 2021 issue of *Classic Porsche*. We'd paid a visit to Porsche interior specialist, Dave the Trimmer, to seek advice on the repair and restoration of automotive leather. There, in the company's Bedfordshire workshop, sat this very 964 Turbo 3.6 S Flachbau, although it looked a little different to its current presentation. For a start, it was rolling on black multi-spokes. Additionally, the cabin was punctuated by a wood-rim steering wheel, the carpets were bright red and the black leather seats featured red piping. This was, in fact, a special-order Porsche Exclusive Manufaktur interior, specified by the original buyer. For

the sake of the next owner's retinas, all of this has been removed and put into storage — Dave's team retrimmed a replacement interior, toning down proceedings with a purely black leather and carpet combo, plus the standard late 964 airbag-kitted steering wheel.

Remarkably, this is one of only two Speed Yellow 964 Turbo S 3.6 Flachbaus configured in right-hand drive. The other is in the collection of the Sultan of Brunei. Irrespective of colour, this is, in fact, one of only twelve right-hand drive 964 Turbo S 3.6 Flachbaus produced,

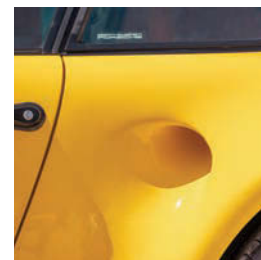
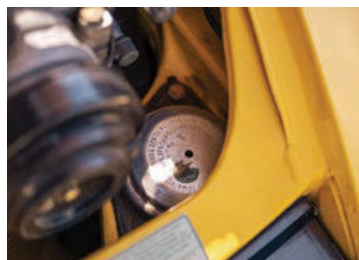
one of the twenty-seven sub-model X84s and one of only seventy-six 964 Turbo S 3.6 Flachbaus in total, making it one of the rarest production Porsches ever

assembled. What, then, is the price of such exclusivity in today's money? Ashgood Porsche reckons the cost of ownership lies between £650k and £800k.

Historically, how did we arrive at the flat-nose look? Porsche never embraced the wedge-shape aero influencing the origami styling of 1970s Lotus cars typified by the Esprit, relying instead on brutal turbocharged force and superior handling to rule the grand touring roost. For racing purposes, the Stuttgart concern did, however, seek to reduce the upright frontal area by slamming the bows of the 911. This gave us the 935 roost-ruler in 1976, more of which in a minute. A bit further down the line, Porsche's ambitious Exclusive

Above Turbo chassis left over at the end of 964 production were handed to Porsche Exclusive Manufaktur and built as the Turbo S 3.6, now a serious collector car

REMARKABLY, THIS IS ONE OF ONLY TWO SPEED YELLOW 964 TURBO S 3.6 FLACHBAUS CONFIGURED IN RIGHT-HAND DRIVE



Above Speedline three-piece split rims look fantastic on any Porsche of this era

Manufaktur department took hold of the slant-nose concept and kneaded (squashed?) the 930 road car into something reminiscent of the hardcore 935. And, as we can see, that's what they did to this 964 Turbo.

The role of the Exclusive Manufaktur department was, from 1978, to pander to wealthy customers (largely on an invite-only basis) and satisfy their every whim in respect of personalizing their chosen Porsche product. Services cover special colours and body modifications, plus bespoke cabin interiors, as well as technical evolutions. Anything is possible, as long as your pockets are deep enough. Initially, a special *Sonderwunschprogramm* (Special Wishes Programme) grew out of Rolf Sprenger's Zuffenhausen Aftersales and Service 'VR' department. The intention was to address the requirements of customers craving more bespoke Porsches. The car which kick-started the Exclusive series in 1983 was the 935 Street, a full-on special slant-nose 911 packed to the gunnels with extraneous kit and created for Mansour Ojeh, a French Saudi-born businessman who owned part

of Techniques d'Avant Garde (TAG), a holding company with interests in Heuer watches and glasses, as well as a twenty-five percent stake in McLaren Technology Group, including the Woking outfit's eponymous Formula One team. Ojeh ordered the Porsche just when McLaren was on a championship-winning roll. This streak began in 1982, when team boss, Ron Dennis, persuaded TAG to fund Porsche-built turbocharged McLaren F1 engines, manufactured to the specification of designer, John Barnard. Ojeh's 935 shared most of its specification with the contemporary 930, but was personalised to such an extent factory bosses deemed it sufficiently leftfield to dub it the one-and-only road-going 935. It's the ugliest 911 I've ever seen — it's neither fish nor fowl.

ANSWER TO THE NAME

Anyway, come 1986, Zuffenhausen's *Sonderwunschprogramm* was renamed Porsche Exclusive Manufaktur, going on to employ 180 staff and listing over six hundred possible options for the current Porsche range. The brand has been responsible for many unique iterations of the 911, but it's worth noting almost forty percent of new Porsches receive enhancements of some form or another courtesy of this department. In terms of exclusivity, Porsches fettled over the years include seven examples of the 959 (all produced for a sheik). In 1995, furniture designer, Carlo Rampazzi, had a 993 Turbo Cabriolet painted orange inside and out. Famous limited editions emanate here, too — in 2009, the 997-based 911 Sport Classic fused traditional and modern styling, as did the 997 Speedster of 2010.

Coming more up to date, Porsche Exclusive Manufaktur was responsible for the 580bhp 991 Turbo S Exclusive Series, finished in golden-yellow two-tone body colour and featuring twenty-inch wheels and special badging. Just five hundred units were built, but this seems like mass production compared to the Classic Club Coupe, a one-off 996 Carrera recently assembled for Porsche Club of America.





For the car pictured on these pages, there was a potent precedent, mentioned earlier, with inspiration provided by a 964 Turbo S 3.3 built by Andial and developed by Weissach guru, Roland Kussmaul, for Florida-based Brumos Racing. The team was victorious with the car in the 1991 and 1992 IMSA Supercar Championship for production-based cars. In early 1992, Sprenger declared his intention to productionise a version of the Brumos car in very limited numbers. The 964 Turbo S Leichtbau (lightweight) would be street-legal, with superior power, torque and handling to the standard Turbo, plus bodywork to match. Planned production run was initially eighty cars. Assembly kicked off

in July 1992, closing in November that year with eighty-six units completed, making the Turbo S Leichtbau a 1993 model-year car. Such was the esteem with which this 911 is regarded within Zuffenhausen's management offices, the demonstrator displayed at the 1992 Geneva Motor Show was selected as one of the exhibits in the 25 Years of Porsche Exclusive event, staged at the Porsche Museum in 2011. The fact a 1994 964 Turbo S 3.6 Flachbau was also chosen as a show car at this exhibition was equally fitting.

There's peripheral stuff coming out of Exclusive, too. Individual enhancement options also include aero-kits,

sport design packages, enhanced performance sport tailpipes, painted or add-on parts, as well as customised front and rear lights.

One of the most frequently selected options is the Porsche crest embossed on head rests, although wheel variations in custom designs featuring special finishes are also popular, as is unpainted carbon-fibre for the 911's 'frunk', roof, engine lid, rear spoiler and sills. The weave features copper wire woven into the mesh to give a special golden sheen. Available Porsche Exclusive

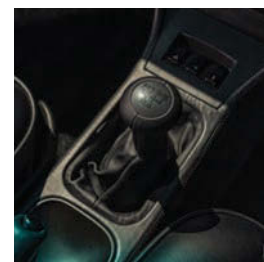
Manufaktur lifestyle accessories include holdalls tailored to the luggage compartment dimensions of the 911 and available to customers through

THE FLAT-NOSE WAS A LOGICAL WAY OF REDUCING THE 911'S FRONTAL AREA AND PROVIDING MORE DOWNFORCE

the Porsche Tequipment sub-brand.

Let's get back to those Flachbau fundamentals. The origins go back to the Type 935 racing 911s, which prevailed from the mid-1970s into the early 1980s, their slant-nose bodywork, with its gargantuan air scoops and vents, designed for lightness and better aerodynamics. Coincidentally, another equivalent vernacular term in the Flachbau phrasebook is Droop Snoot, an idiom coined from the 1940s and 1950s aero industry and applied to General Motors junior-league GTs, such as the Vauxhall Firenza, penned by legendary automotive stylist Wayne Cherry, and exemplified by motorsport icons, such as

Above Away from the track, the Flachbau look has always been an acquired taste, whether a feature of much earlier air-cooled 911s or, as seen here, the flat-nosed 964, which carries exposed headlights, just like the 968 it borrowed from



Below Whether you consider this 964 weird or wonderful, its registration plate says it all

Gerry Marshall's wildly successful Firenza-based 'Old Nail' and 'Baby Bertha' touring cars.

In the mid-1970s, the turbocharged 934 dominated GT racing and, by decade's end, its flat-nose 935 sibling was virtually invincible. The 934 and 935 were based on the 930 and spawned an era of profound change in international sports-GT racing, effected by a combination of rule changes and technical advancement in the shape of radical aerodynamics and turbochargers. Between 1972 and 1975, Group 5 sports cars and Group 4 GT cars contested the freshly renamed World Championship for Makes and, from 1976 to 1981, the series was open to Group 5 special production cars, including Group 4 GT cars, such as the 934 and 935. They came to dominate the championship.

At the outset, the 935 looked like the 934 (in other words, not straying far from the look of a regular 911) before the factory's Weissach competitions department — then under the rule of Norbert Singer — created the 935 Flachbau, making eight units between 1975 and 1976.

The one-piece fibreglass flat-nose was a logical way of reducing the 911's frontal area and providing more downforce, with the added benefit of making the front end easier to work on. Thirteen 935s were built during 1977, the first season Porsche built 935s for its clients. These cars were the famous, fireball-spitting, single-turbocharger motorsport machines, much more difficult to drive than the twin-turbocharged 935 developed thereafter. Customer teams lost no time in fashioning their own take on the car. Alméras, GELO, Garretson and, most notably, Kremer, were chief among the copycats.

BODY LANGUAGE

Seventeen customer 935s were produced in 1978, a further seven for 1979. Around forty more 935s were built by independent teams and firms, ranging from Brumos to Jöst and Fabcar. DP Motorsport, based at Overath near Cologne, was one of the main fabricators of 935 bodywork. The front and rear wings were fibreglass, as were the sills, bonded directly to metal. DP boss, Ekkehard Zimmerman, also produced the bodywork for more extreme 935s, such as the K3 and K4 variants run by Kremer Racing. Famously, one of these cars won the 1979 24 Hours of Le Mans with Klaus Ludwig and the Whittington brothers at the wheel. Founded in 1973, DP Motorsport (the initials stand for *Design und Plastik*) is still going strong, prototyping body shells for race cars under the watch of Ekkehard's son, Patrick.

The flat-nose 930 was designated option M505/M506. Between 1982 and 1989, 686 D-programme flat-nose 930 Turbos rolled off the Zuffenhausen production line, together with another 204 created in the *Sonderwunschprogramm* and the Exclusive Manufaktur department. Here, Porsche removed the front wings of newly ordered 930s and installed the handcrafted slant-nose with pop-up 944-sourced headlights and slatted air vents in the leading edge of the wheel arches. Fifty-eight of these cars were finished without pop-up headlights, employing rectangular lenses in their front valances, just





like the race cars. Contemporary was the RUF-powered Gemballa Avalanche, though this is unsurprising, given Uwe Gemballa's penchant for styling extremes.

SECRET RECIPE

Fast forward to 1993, and here's our 964 Turbo S 3.6 Flachbau. How does it perform? The fact it's got the flat front doesn't affect the drive for the most part, though possibly there is an aerodynamic benefit to this mild streamlining if

you're hammering along the unrestricted autobahn. My experience with these cars is limited to driving a 935 on track,

plus that Mansour Ojje car in the Eifel hills. Over the years, I've sampled a handful of slant-nose 930s, as well as numerous 964 Turbos, not to mention the RUF RCT. I have also driven a sibling of the Ashgood Porsche 964 Turbo S 3.6 Flachbau pictured here. It was another flat-nose, albeit with more extreme styling and covered headlights. It was the relative normality of the driving experience which I found most surprising — the car presented itself as a derivative of the hardcore 935, whilst paradoxically behaving like a normal 964 Turbo 3.6. Acceleration was sharp, albeit with a slight tendency to lag, but past 3,000rpm, the force came in straightaway, with effortless performance backed by poised handling. Each gearshift was accompanied by a real kick in the

ALL 911 TURBOS PLAY HARD, BUT THE 964 TURBO 3.6 IS ON OR OFF, LIKE A HEADBANGER FLAILING IN THE MOSH PIT

back when the turbocharger bit and a real frisson when it took off. All 911 Turbos play hard, of course, but the 964 Turbo 3.6 is on or off, like a rampant headbanger flailing in the mosh pit. Brutal pace is a given on the straights, which means anticipating braking points carefully, when those big reds do their business. Handling-wise, it relishes a positive driving attitude, squatting down and turning in to hit apexes perfectly, easing across the entire road into the next turn. Slight on-off throttle is useful to

provoke understeer and oversteer.

This has its place, but it's a bit too overdone for my liking. The flat-nose treatment really needs the rest of the car smoothed off to

match, much like the 993. Come to think of it, why not go straight for a 993 Turbo?

Granted, the later turbocharged 911 lacks exclusivity and is all-wheel drive, but that's not necessarily a bad thing. There's also the 3.8-litre 993 Carrera S to consider. Boasting the chassis and suspension of the 993 Turbo, this rare beast retains a normally aspirated flat-six and was available with X51 engine upgrades.

An in between? I'd happily settle for the dramatic (but rather more conventional) limited-run 964 Carrera RS 3.8, based around a Turbo body and producing close to 300bhp from an engine bored out by two millimetres for swept capacity of 3,746cc, mirroring the day's competition RSR. All donations gratefully appreciated. **CP**

Above One of only a handful of right-hand drive 964 Turbo S 3.6 Flachbaus, the car presents an investment opportunity for a well-heeled Porsche collector

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black/white Pepita 911 1965-73



TOOL POUCH real leather
Scots motif 911 1974-89

911



MAHLE oil filter
all 911 1972-93



BRAKE CALIPER
(front right)
911 3.2l 1984-89



Door lock striker set
(left) with screws and
shim 911 1966-72



HORN GRILLE
chrome plastic (right)
911 1969-73



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GOODING & COMPANY PEBBLE BEACH AUCTION SMASHES PORSCHE RECORDS

Just as this issue of *Classic Porsche* went to print, Gooding & Company concluded its eighteenth annual Pebble Beach auction, achieving a total sales figure of \$109,452,370. Across a two-day period spanning Friday August 19th through Saturday August 20th, the globally renowned auction house sold no fewer than twenty-eight cars for figures well over \$1,000,000, setting five new world sales records in the process. Throughout the weekend, 135 of 158 lots were sold, culminating in an eighty-five percent sales rate and an average price of \$810,758 per lot.

The top sale of the Pebble Beach auction was the elegant 1937 Bugatti Type 57SC Atalante, which achieved an impressive figure of \$10,345,000. Gooding & Company also offered several top of the line, ultra-desirable blue-chip classics, including an incredibly well-preserved and completely unrestored 1961 Ferrari 400 Superamerica Series 1 Coupé Aerodinamico, which sold for \$6,000,000.

Porsches constituted a significantly large portion of the auction house's line-up. The top Porsche sale of the weekend was a 2007 RS Spyder Evo (chassis 9R6.02), which achieved \$5,615,000, the most ever paid for the model. With an outstanding race record, including two outright wins and four class wins, this 503bhp Penske Racing Porsche — one of only seventeen RS Spyders built between 2005 and 2008 — sits among the most successful prototype racers in all of the manufacturer's history.

NAMES IN THE GAME

Another significant competition Porsche to cross the auction block was a 1969 908/02, which set a new world record for 908 sales by attracting a winning bid of \$4,185,000, well over the lower estimate. With a competition history including races at Brands Hatch, Targa Florio, Le Mans and the Nürburgring, this ex-works car was driven in period by Vic Elford, Richard Attwood, Rudi Lins, Gérard Larrousse, Kurt Ahrens Jr., Masten Gregory and Pedro Rodriguez. Needless to say, it represents an important moment in time for the forging of the marque's legacy as an



endurance racing powerhouse. The car's exacting restoration was carried out by J&L Fabricating, Gunnar Racing (the largest Porsche racing and restoration facility outside of Porsche AG) and JWE Motorsports.

In addition to these racing Porsches, Gooding & Company sold a number of extraordinary road-going 911s, including a stunning 1973 Carrera RS 2.7 Lightweight, which set a new world record at auction for the model by bringing in \$2,425,000. Restored by RS specialist, Nate Cantwell, for Porsche collector, Dr. Richard Moran, the car was previously exhibited at the 2013 Pebble Beach Concours d'Elegance and, as its price tag suggests, is one of the finest surviving examples of its kind.

Confirming surge of demand for premium marque sports cars, the auction saw Gooding & Company sell a 1990 Ferrari F40 (the seventy-seventh of only 213 US-market examples) for \$3,965,000, the most paid at auction for an F40 to date. These results underscore the robustness of the auction scene, plus continued demand for classic Porsches. To view all of the Pebble Beach event's sale results, visit goodingco.com.



PMO CARBURETION & INJECTION RELOCATES FOLLOWING EMPI INC. ACQUISITION

Leading classic Volkswagen parts supplier, EMPI Inc., has acquired legendary Porsche specialist product manufacturer, PMO Carburetion & Injection, from company founder, Richard Parr. To reflect EMPI's plans to expand PMO's product line (to include electronic and mechanical fuel injection systems and components), PMO Carburetion & Injection will be re-branded as PMO Induction.

As a consequence of the takeover, PMO operations in Santa Monica, California, are being relocated to EMPI headquarters in Anaheim (a forty-minute drive away), ensuring PMO products — manufactured using aerospace grade materials and manufacturing practices — will continue to be produced in Southern California.

Since 1956, EMPI has developed new and exciting products for owners of air-cooled Volkswagens. From the street to the drag strip, from desert to dunes, there's every chance components fitted to enthusiast-owned historic Volkswagens are making use of EMPI componentry. The EMPI family of iconic brands continues to grow and includes Auto Haus, BugPack, JayCee, Race-Trim and Treuhaft. Additionally, in 2019, EMPI formed a sales partnership with JP Group, parent company of Porsche parts manufacturer, Dansk, leading EMPI to become the largest warehouse distributor of JP Classic Volkswagen and Porsche parts in the USA.

"PMO is an iconic brand offering world-class products for Porsche owners," Robert Keller, President of EMPI, told *Classic Porsche* when the takeover news broke not long before this issue of the magazine went to print. "We are excited to expand PMO's reach via EMPI's global dealer network. As a long-time Porsche enthusiast, I have appreciated the engineering accomplishments and focus on product quality and innovation Richard Parr has built in to every PMO product to date. EMPI is honoured to present this storied brand to a broader audience of air-cooled Porsche owners and enthusiasts."

THE PMO TRIPLE THROAT CARBURETTOR IMPROVES CONSIDERABLY OVER THE WEBER DESIGN ADOPTED BY PORSCHE

PMO carburetors have been the go-to choice for 911 enthusiasts since the brand's first batch of products were launched in 1997. PMO is the original manufacturer of 911 carburettor conversions and the only business dedicated exclusively to producing equipment for the upgrade — the PMO triple throat carburettor improves considerably over the original Weber carburettor and manifold design adopted by Porsche in period, resulting in increased power, as well as improved drivability by way of smooth and progressive throttle response. With EMPI's leadership and resources, including order fulfilment, in-house production, purchasing and logistics capabilities, PMO products will now be available on a timelier basis.

The full PMO catalogue of products will be added to the EMPI website shortly and will continue to be available for purchase from current PMO authorised dealers. EMPI stockists not currently offering PMO kits will now add the brand's offerings to their inventory. Additionally, all PMO spares and accessories will be available through the entire EMPI dealer network.

Quality, reliability and, crucially, excellent customer service are just a few of the reasons dealers, distributors, remanufacturers and professional mechanics worldwide ask for EMPI products. Why choose EMPI offerings for your air-cooled Volkswagen or Porsche? Simply put, EMPI is a company automotive professionals know they can depend on and offers high quality products at the lowest possible prices. Order fulfilment rate is also a major factor in EMPI's popularity — the company maintains the highest inventory levels (98%) in the industry. Visit empius.com to locate your nearest retailer.



917 HOMAGE ADDS ICONIC TOUCH TO HISTORICS BICESTER HERITAGE SALE

The passion of the classic car scene will be loud and proud at Bicester Heritage on Saturday 24th September, the day Historics Auctioneers opens its doors to the brand's inaugural sale at the bustling venue, which serves as home to more than forty best-of-breed automotive specialists. Whilst near two hundred fine and varied entries will pass across the auction block that day, pride of place outside the auction hall will be occupied by an extraordinary tribute to the short-tail 917. Known as the Icon 917K, this amazing road-legal motorsport machine heads Bicester Heritage's evocative display of privately owned 'Supercars and Poster Cars', each vehicle lifted from the venue's Scramblers club.

The Icon 917K is a UK road-registered homage to Porsche's legendary endurance car and is the pride and joy of automotive design engineer and Historics Auctioneers client, Dave Eaton. His childhood passion — shared by engineering wizard and close friend, John Hartland — was to build from scratch a road-registered and track-capable 917 replica. Eloquently described by Dave as the culmination of "ten years of madness", the car makes use of a bespoke spaceframe beneath a body formed from moulds taken from the five-litre 917 owned by former Formula One and endurance racing driver, David Piper, who bought his car (the tenth 917 assembled) direct from Porsche in 1969, the same year the works team employed him to tackle the 1,000km of Nürburgring.

Offered by Graham Turner, who worked for Piper many moons ago, the panels soon found their way to Dave's workshop, whereupon he began the arduous task of studying every engineering diagram, blueprint, book, video, photograph and film relating to each of the 917s assembled. "With moulds

MOULDS TAKEN FROM THE FIVE-LITRE 917 OWNED BY FORMER ENDURANCE RACER, DAVID PIPER

from a genuine 917, I was keen to construct an accurate recreation of the original car," he continues. "I didn't want a 917 silhouette over a decidedly non-917 chassis. There could be no compromise. I was adamant the finished car should be able to accommodate a flat-twelve and be accurate to within 10mm of Porsche's original design. I'm delighted to say that goal has been achieved."

Using state-of-the-art CAD, bespoke chassis tubework was imagined using reduced-scale factory drawings, as well as the accepted front and rear axle positions. A wooden frame was constructed to arrange the body correctly in order for it to be scanned, a process which required the application of more than 2,000 reflective dots. The resulting scan was then converted into a surface model on CAD, ensuring the proposed steel metalwork — far more rigid than the aluminium used to form the guts of the original 917 — would sit pretty. "It worked first time," smiles Dave, proud of a job well done. Subsequently, more than 220 tubes were laser-cut from CAD models, dropping into a jig with such precision the chassis almost built itself!

The version of the Icon 917K you see on these pages is propelled by a 964-sourced flat-six producing 300bhp, a move designed to maintain the theme of air-cooled Porsche power, where other 917 replicas have been loaded with modern Audi V8 or V10 engines. The car eventually earned its stripes with registration as a new build with UK manufacturer status. Since then, it has amassed some three thousand road miles, whilst plans for limited production have attracted the interest of collectors worldwide. View the car for yourself when the Historics sale gets underway. Information about the event, plus instructions for bidding in person, online or by telephone, can be found at historics.co.uk.



NEW NAME, NEW OWNERSHIP
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EMPI Inc acquires PMO Carburetion & Injection, updates name to PMO Induction

Leading classic Volkswagen parts supplier EMPI Inc. has acquired legendary Porsche specialist brand PMO, from its founder Richard Parr, who is retiring. To reflect PMO's planned product line expansions to include electronic and mechanical fuel injection systems and components; EMPI has renamed the brand PMO Induction to more accurately convey its expertise.

PMO operations in Santa Monica, CA are being relocated to EMPI headquarters in Anaheim, CA ensuring PMO Induction products will continue to be produced and assembled using aerospace grade materials and manufacturing practices pioneered in Southern California.

empius.com

PMO Products are exclusively available through PMO and EMPI distributors



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PAUL STEPHENS AUTOART 993R BUILD REVEALED

"Take a 993 and make a twenty-five percent improvement in every area," was the brief from Paul Stephens' latest Autoart customer. Taking more than five years to create and with several thousands of miles of road and track development under its belt, the Autoart 993R has finally been revealed.

This highly personalised Porsche is a statement to the joy of driving a classic 911. It combines a 993 narrow body with race-validated Carrera RS and modern GT-derived components, along with Paul Stephens' proven powertrain parts. With the rawness and charm of an air-cooled Porsche, yet modern engineering and lightweight manufacturing advances, the 993R offers technical function enhancing the base model's performance, styling and overall driving experience.

Marking more than twenty years since the development of the first Paul Stephens Autoart-converted 911, the 993R is Paul's take on personalising the last generation of air-cooled Porsche and his finest endorsement of the 'less is more' philosophy to date. "The 964 platform, which we started converting in the early 2000s, has proved very popular with companies ever since," he says. "Each has wanted to re-engineer this particular generation of 911 into their interpretation of an earlier-looking model. We have never been a company to copy others and felt the time was right to put our mark on the 993, which is the most advanced series of the air-cooled era and has a unique appearance still appreciated today. The 993R pushes our years of experience with air-cooled 911s to the limit, from the engine, suspension, lightweight panels, to the car's bespoke minimalist interior. This isn't a swansong, but I wanted it to be the best of Autoart, bettering our customer's brief."

More than any Paul Stephens Autoart-converted 911 to date, the 993R includes many subtle details unnoticed to the casual observer,

yet hopefully appreciated by 911 aficionados. The steering column stalks, for instance, look exactly like standard plastic parts, but are, in fact, machined from aluminium.

Like their approach to the original Autoart 300R (created some two decades ago), Paul and his team reflected the 993R must be lighter, with increased power and a technically advanced chassis delivering a more focused driving experience than the original 911 it was based on. To this end, the 993R tips scales at 1,190kg (dry). The car also had to feature good levels of comfort without resorting to modern driver aids — though ABS is fitted — or a switchable exhaust, equipment which risked flattering the driver's skillset.

OPTION TO GO LARGE

With a stronger and enlarged 3.8-litre engine, featuring a 997 GT3 crankshaft, RSR pistons, bespoke camshafts and Porsche Motorsport solid lifters, peak power of 330bhp is achieved at 7,400rpm, as opposed to the original 272bhp at 6,100rpm. With this configuration, the team was focusing on daily drivability instead of outright poke. For those wanting more shove, a 360bhp version of the 993R is available to order, which when supplied in this specification, has a visceral 8,500rpm redline.

At the time of writing, performance figures haven't been officially recorded, but with 270bhp per tonne, the 993R boasts the same power to weight ratio as a 996 GT3. Customers should expect performance to be similar, even with the 330bhp motor fitted. The spicier 360bhp option offers 295bhp per tonne.

Due to the fact the 993R is primarily a road car, the brakes are lifted from the 993 Carrera RS, while a modern Wavetrac limited-slip differential and Tractive Ace semi-active adjustable suspension have been fitted. The wheels are genuine 996 GT3 eighteen-inchers front and rear. The order book for fresh 993R builds is now open. Visit paul-stephens.com.



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Price: £12.47 XL, £16.99 XXL

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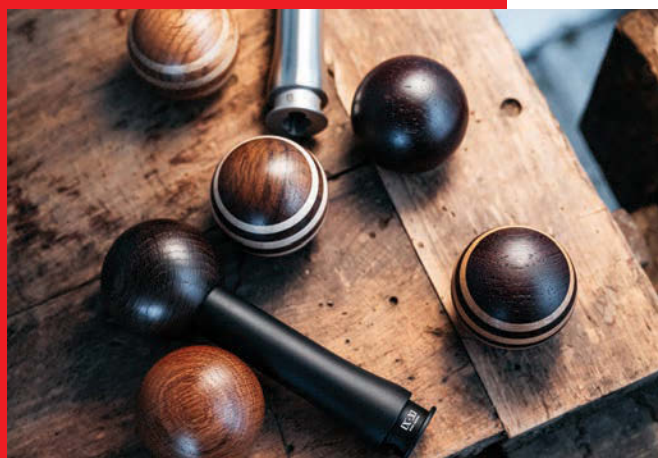


917-INSPIRED SHIFTER KIT FOR 964/993

It took crazy obsession and a devilish need for perfection to build this gorgeous collection of 917-inspired shift knobs for the 964 and 993. The work was carried out by Joel Kernasenko, head of classic Porsche parts producer, Nine Eleven, and the finished shift knobs are available to order through the online store of historic Porsche accessories specialist, CarBone. A variety of finishes are available: choose between smoked oak and ash, oak and antique oak, wenge and oak, walnut and maple or, finally, solid smoked oak. Suitable for all 964 and 993 models, including Turbos and GT variants, each beautifully crafted gear knob comes complete with a shift adapter manufactured from stainless steel (available with either a black or chrome finish). Supplied with a different adapter, this Nine Eleven shift kit can also be ordered for Porsche's transaxle family of products (924, 944, 968, 928) from the CarBone store.

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NEW RENNLINE RANGE OF RETRO SERIES CAPS

Based on the livery of classic retro racing Porsches, Rennline's new range of caps are the perfect way to show off your passion for historic motorsport. Designed with the attention to detail we've come to expect from Rennline products (apparel or otherwise), each hat features precise stitching and a raised, rubberised logo at the front. A handy snapback allows for multiple sizes. Available designs include the 917 'Ping Pink' livery pictured here, as well as caps mirroring classic Rothmans, Marlboro and Martini race car sponsor graphics. Rounding out the collection is a cap taking heavy influence from the Apple Computers 'rainbow' livery applied to Bob Garretson's Kremer 935 K3/79, run by Dick Barbour Racing and driven by Garretson, Bobby Rahal and Allan Moffat at Sebring, Road America, Riverside, Le Mans and Sears Point in 1980.

Price: \$45

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During the last forty years, JP Group (the parent company of Porsche parts brand, Dansk) has produced exhaust systems, heat exchangers, fuel and oil tanks, as well as body restoration parts meeting the highest OEM standard for valuable classic cars. The company's main focus has been on the design and production of VW and Porsche parts, but it also caters for owners of Alfa Romeo, Goggo Mobil and Mercedes-Benz vehicles under separate sub-brands. In a recent development, JP Group has implemented the latest technology in its production lines by investing in complex 3D scanning and printing equipment, which can be considered as the platform and basic foundation for producing tools in a faster and more economical way than the traditional tooling-up process. This has enabled 3D-printing of prototypes and many new small-volume 'hard to get' spares, which can be viewed at the JP Group website.

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shop.kelsey.co.uk or call 01959 543 747



PORSCHE RED-AND-BLUE STRIPED DEMISTING TOWEL

Head to the official Porsche online store and you'll be presented with a selection of different towels featuring modern Porsche brand identity and designed to suit beach dwellers, those who frequent the gym or golf enthusiasts. If you're the owner of an early 356 and want a Porsche-branded de-misting towel similar to those produced before 1955, you're out of luck. Or are you?! Famous Porsche spares supplier, Stoddard, has introduced this classic towel design to its massive inventory of accessories for air-cooled Porsches. Featuring a red centre stripe with a blue keyline and the Porsche name as it was represented in the early days of the manufacturer's history, this tip-top demisting towel isn't cheap, but has been reintroduced with the concours scene and completists in mind. Stock is limited, so don't delay, order today.

Price: \$200

stoddard.com or call +1 440 869 9890



OFFICIAL PORSCHE CLASSIC TOOL BAG FOR G-SERIES 911

Porsche Classic has redesigned the G-series 911 tool bag, producing a new edition with a spectacular look inspired by the interior fabrics used in 911 production during the late 1970s. Whereas the original tool bag featured only imitation leather, this new take on the design makes use of real black leather, along with red tartan seat fabric. An option of pin strip fabric is available. Whichever finish you choose, open the tool bag and you'll find five double open-ended spanners (8x9, 10x11, 12x13, 14x15 and 17x19), a wheel nut spanner, a holding tool for the auxiliary belt pulley, combination pliers, a spark plug ratchet spanner, a test lamp, five fuses and a Porsche-branded cleaning cloth. All tools have specified slots inside the tool bag. Also included is a towing lug, which comes complete with its own instructions and is designed as a bayonet hook, allowing it to attach to the original trailer, which was fitted with a simplex hook. The screwdriver handles are made of yellow plastic, but now also feature Porsche lettering. To make handling easier, Porsche Classic has replaced the original spark plug tool with a ratchet featuring a special spark plug socket spanner, which is much more practical to operate. This G-series tool bag comes hot on the heels of Porsche Classic's similar offerings for the 356, F-series 911, 914, 964 and 993.

Price: £428.30

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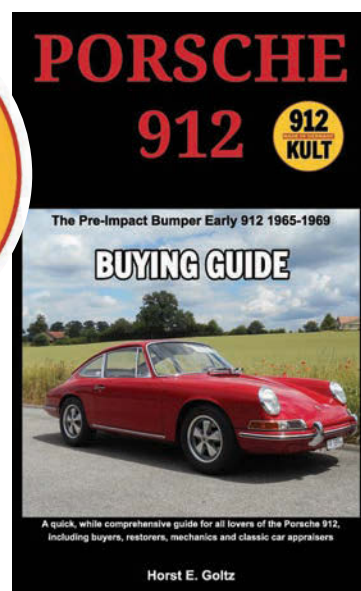
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PORSCHE 912 BUYING GUIDE

This 234-page book authored by Horst E. Goltz is a comprehensive guide to the history and specifics of the 912 (1965-1969). Featuring a year-by-year account of changes in specification, as well as all period trim options, the information is presented in huge detail, so much so every piece of data is accompanied by full-colour photography illustrating the point being made. This is of obvious benefit to anyone thinking about buying a 912 ("the four-cylinder 911", as Horst describes it), but will also prove advantageous to restorers, mechanics and appraisers looking to identify period-correct specification when working on or inspecting one of these fantastic Porsches. Horst also shares his knowledge of quality aftermarket equipment available for 912s and includes many photographs from owners club meets. Choose between hardback or paperback.

Price: €69.50 paperback, €79.50 hardback
horst-e-goltz.de or search Amazon



GOCLASSIC 911 TURBO FUEL ESPRESSO AND TIN MUG SET

It's a given you want to fill your Porsche with high-quality fuel, but shouldn't you give your body and brain the same consideration? Classic Porsche parts retailer, GoClassic, certainly thinks so, which is why it has introduced its '911 Turbo Fuel' espresso and tin mug set. Featuring 100% Arabica specialty coffee beans acquired through the principles of direct trade from award-winning farms, this sweet and full-flavoured espresso coffee features a rounded, cocoa-like body with a pleasant and lingering finish exhibiting a touch of exotic fruit. Suitable for all coffee makers and supplied in a 300g bag, the product comes with a traditional enamelled tin mug, doubling up as a handy container for screws you don't want to misplace.

Price: Varies
goclassic.eu or call +371 2922 5885

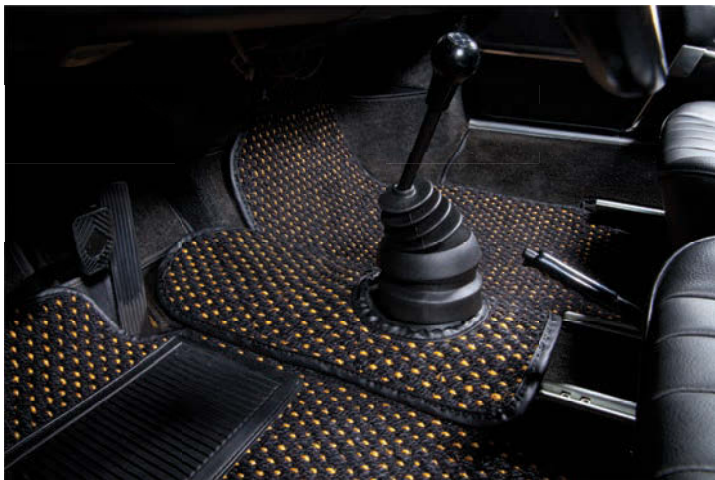


DESIGN 911 INTERIOR RESTORATION KITS FOR G-SERIES 911

There's no getting away from the fact even the newest air-cooled 911 is more than two decades old. Sadly, with automotive age comes wear and tear, which is why it's reassuring to know independent Porsche parts specialist, Design 911, is offering complete interior restoration kits for the G-series 911 (1974-1989). Comprising a new carpet set, door panels, door capping retrim, front and rear leather seat covers, a trunk carpet set, a bulkhead retrim kit, leather gaiters, B-pillar trim panels, a new headlining and a metre-square roll of additional leather for you to cover additional items or take care of repair work in the future, this comprehensive kit can also be optioned with complete new door pockets, a new dashboard, a trio of knee protectors, new door caps and twin replacement seat base foams. Additionally, a restoration kit is available to order for G-series 911 Targa roof panels. Complete step-by-step installation instructions and reference photographs are supplied with each kit, enabling you to rejuvenate the tired hide in your ride from the comfort of your own home or workshop. Choose between various combinations of cloth and leather matching original specification.

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EUGENE HARKINS

Battery electric vehicles represent an exciting next-chapter in automotive history, but we shouldn't be fooled into thinking there's only one solution to sustainable motoring – the work Porsche is currently engaged in (developing synthetic fuels for use in new and existing internal combustion engines) proves otherwise...

Eugene Harkins is an electronics engineer with oversight of businesses supplying the automotive sector with parts to convert vehicles for specialist use. He also oversees 911 restoration house, Cape International. Visit cape-international.com



In an era where there's huge focus on the switch to battery electric powertrains, I am reminded of my first-hand experience of sudden alterations in government policy negatively impacting businesses with invested capital unable to realise returns due to these unexpected changes of direction. The demonisation of diesel is a prime example of what I'm talking about – at one time, we were all being told to buy derv-powered cars, policy which encouraged Jaguar Land Rover to switch most of its product line to diesel power.

Before long, a change of tack saw these recommendations turned on their head. Then Dieselgate broke into mainstream news. Consequently, since February 2018, Porsche hasn't offered diesel models in its product range and, at the end of September the same year, the Stuttgart brand announced its decision not to offer any diesel drive systems in the future. Needless to say, Jaguar Land Rover's predominantly diesel-propelled

not least because many of my customers maintain, cherish and wish to preserve automotive history for future generations.

As time goes by, it becomes increasingly clear battery power is not the silver bullet governments think they've found in response to the challenges presented by increasing global temperatures. Rare minerals and special metals need to be mined for lithium battery production, a costly and, I suspect, not particularly environmentally sound procedure and, ironically, one relying on the internal combustion engine for transportation of materials to assembly plants, which produce carbon emissions (even if claimed to be carbon-neutral).

We only need to look at recent news stories to see a lack of wind power (coupled with increased gas prices) has necessitated the restart of the UK's remaining coal power stations to supply electricity to the National Grid. There are obviously huge problems to deal with when trying to achieve a



product offerings left the company in a spot of bother from which it has not yet fully recovered.

In my professional capacity, I am constantly assessing risk and positioning the businesses I'm in charge of accordingly. Current headlines are fixated on an all-electric automotive future, but this brings many practical and logistical challenges. As this magazine highlighted last month, other solutions are being developed – pragmatic approaches to making existing and newly developed internal combustion engines safe for the environment and sustainable for the long term. This is, of course, wonderful news for owners of air-cooled Porsches.

When considering the future of motoring, I look for informed discussion about how much the motor car is contributing to carbon emissions, where focus needs to be in order to reduce *all* emissions (including a look at where and what are the biggest creators of carbon emissions, as well as how the motor car fits into this structure) and how best to understand the intentions of governments around the world claiming to be focused on tackling climate change. Obviously, I also consider the automotive heritage sitting on our driveways, in our garages and being tinkered with in workshops,

truly environmentally sound solution for energy production, automotive or not, and though I'm pleased to see advances in battery technology, governments need to be mindful not to convince people there is only one solution as far as the motor car is concerned – synthetic fuels being developed by Porsche in partnership with Shell and Siemens prove there's appetite and investment available for the creation of alternative fuel types designed to sustainably maintain operation of the existing world fleet.

While battery electric vehicles are part of the solution to climate change, they are by no means the only way forward. Governments need

to be careful they aren't promoting only one type of energy source – we all remember the battle between Betamax and VHS. The latter won the war, but history shows us this technology

was a steppingstone to DVDs, which, in turn, led to Blu-ray. All of these technologies had a limited shelf life, much like governments themselves – an elected administration's long-term plan can have colossal consequences for generations to follow, long after the authoring government's term in power has expired. I'm excited by what the future holds for motoring, but I won't be giving up on air-cooled 911s just yet.

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911 Carrera RS (964)

Guards Red • Leather Bucket Seats
17" Magnesium Cup Wheels • Left-Hand
Drive • Porsche Certificate of Authenticity
Previously Sold & Serviced by Paragon
27,097 kms (16,837 miles) • 1994 (L)

£249,995



911 Carrera Speedster

Silver Metallic • Velvet Red Leather Seats
16" Fuchs Wheels • One of 64 UK Cars
Porsche Certificate of Authenticity
Previously Sold & Serviced by Paragon
29,896 miles • 1989 (G)

£184,995



911 Turbo (993)

Arena Red • Black Leather Sports Seats
18" Turbo Wheels • Electric Sunroof
Full Leather Interior • Air Conditioning
Previously Sold & Serviced by Paragon
62,139 miles • 1996 (P)

£154,995



911 GT2 (996)

Polar Silver • Black Leather Sports Seats
18" GT2 Wheels • Porsche Ceramic
Composite Brakes • Carbon Interior
Package • Previously Sold & Serviced
by Paragon • 21,836 miles • 2003 (03)

£134,995



911 Carrera 4 GTS Targa (991)

GT Silver • Black Half-Leather Sports
Seats • 20" GTS Centre Lock Wheels
Touchscreen Satellite Navigation
Switchable Sports Exhaust • Sport
Chrono • 22,006 miles • 2018 (18)

£104,995



911 Carrera 2 S (992)

Guards Red • Black Leather Sports Seats
PDK Gearbox • 20/21" Carrera S Wheels
Touchscreen Satellite Navigation
Switchable Sports Exhaust • Sport
Chrono • 7,605 miles • 2019 (69)

£102,995



911 Carrera 2 GTS (991)

Guards Red • Black Half-Leather
Bucket Seats • Manual Gearbox
20" Centre Lock Wheels • Sport Chrono
Previously Sold & Serviced by Paragon
6,939 miles • 2015 (65)

£92,995



911 Turbo S (997)

Carrera White • Black Leather Sports
Seats • PDK Gearbox • 19" Centre Lock
Wheels • Porsche Ceramic Composite
Brakes • Previously Sold & Serviced by
Paragon • 39,721 miles • 2011 (11)

£79,995



911 Carrera 4 GTS (997)

Basalt Black • Black Leather Sports
Seats • PDK Gearbox • 19" GTS Centre
Lock Wheels • Switchable Sports
Exhaust • Previously Sold & Serviced
by Paragon • 28,883 miles • 2012 (62)

£69,995



911 Carrera 4 S (997)

Meteor Grey • Black Leather Sports
Seats • PDK Gearbox • 19" Turbo Wheels
Sports Exhaust • Previously Sold &
Serviced by Paragon • 72,325 miles
2010 (59)

£46,995



911 Carrera 4 Targa (997)

Arctic Silver • Black Leather Seats
Manual Gearbox • 19" Sport Design
Wheels • Satellite Navigation • Heated
Seats • Bose Sound System • 53,510
miles • 2006 (56)

£39,995



911 Carrera 2 (997)

Arctic Silver • Dark Blue Leather Seats
Manual Gearbox • 19" Carrera Sport
Wheels • Switchable Sports Exhaust
Previously Sold & Serviced by Paragon
59,163 miles • 2006 (56)

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ALEX MANOS

The 356 Speedster's standing in the world of historic sports cars, not to mention the adoration this wonderful air-cooled classic commands from all four corners of the motoring arena, makes it easy to forget Porsche has, over the years, further developed the Speedster concept for its flagship models, including the 964...

Alex Manos is owner of Beverly Hills Car Club, sourcing and selling some of the world's most beautiful and unique vintage automobiles, including a wide range of air-cooled Porsches. View the firm's inventory at beverlyhillscarclub.com



My column for last month's issue of *Classic Porsche* focused on the 356 Speedster. I've thought about this fascinating car a fair amount in the weeks since putting the proverbial pen to paper. The existence of this special Porsche is really all down to one man: Max Hoffman, who in 1950 was the sole importer of Porsche cars into the USA. He was very successful, but triumph had to overcome adversity — born in Vienna in 1904 to a Catholic mother and a Jewish father, Maximilian Edwin Hoffman was forced to flee to France to escape the Nazis. He emigrated to the USA in 1941. Six years later, he founded the Hoffman Motor Company and began to import European sports cars to a booming American market. In the elegant surroundings of Park Avenue in Manhattan, he acquired a showroom designed by star architect, Frank Lloyd Wright. This was an extremely

car scene for some time, but Hoffman was convinced Porsche could achieve significant penetration of the same market, if only the asking price of a 356 could be dropped. The basic Porsche coupe, for example, cost \$300 more than a Jaguar XK120.

Ferry was keen to meet Hoffman's requirements and the two men came to an agreement: to market a cut-down version of the 356 Cabriolet. As a bonus, if Porsche removed luxury trim and weather protection, the resulting car would be lighter (and therefore quicker), as well as cheaper. Following approval from Porsche's commercial director, Albert Prinzling, the concept of the Speedster — and an automotive legend — was sired.

Subsequent evolutions of the Speedster are equally fascinating. For example, whereas the 1989 Carrera 3.2 Speedster was primarily an aesthetic exercise, the 964 Speedster sought a happy medium between the regular Carrera 2 and the hardcore Carrera RS. It had the same engine



classy premises, perfect for premium motors, such as those being produced by Porsche in Stuttgart.

In autumn 1950, Ferry Porsche sat down to talk with Max Hoffman at the Paris Motor Show. Ferry knew of the huge sales potential which existed on the other side of the Atlantic, but wondered how his company would be able to gain a foothold in the "land of unlimited possibilities". As it turned out, the meeting with Hoffman would provide the answer.

When the two men conversed, Ferry expressed his desire to sell five 356s a year in the USA. "If I can't sell five cars a week, I'm not interested," was Hoffman's abrupt response.

Americans were thinking big in the postwar years. Far bigger than Germans, so Hoffman surmised. Three 356s were shipped to him shortly after his meeting with Ferry in Paris.

Thirty-two 356s found American homes in 1951.

Hoffman had a brainwave: he suggested to Ferry he could shift a far higher number of Porsches if he could be provided with a low-cost 356 capable of competing with the price of imported English sports cars, which were regarded as perfect for the needs of the American market. Products from MG, Austin-Healey and Triumph had dominated the American sports

as the base Carrera and didn't have the same suspension as the RS, but thanks to a removable windshield and an interior stripped of all niceties, it fit the role of 'driver's car' quite precisely.

This is the Porsche Andreas Preuninger (the brand's high-performance output product manager and director of its GT line) points to as being the best iteration of the Speedster concept. He includes the 356 in his calculations. He likes the fact the 964 Speedster featured elements of the Carrera 2 Cabriolet, but with the pared-back, lightweight interior of the 964 Carrera RS, including the Rennsport model's bucket seats, a stock

twenty-fifth from its 3.6-litre engine and the same removable, raked and shorter windscreen as the Carrera 3.2 Speedster. Porsche had hoped to build three thousand 964 Speedsters, but in the

end, only 936 rolled off the assembly line. All were narrow-bodied, with the exception of around twenty examples ordered with the high-cost 'Turbo Look' and hand assembled by Porsche Exclusive Manufaktur.

2010 saw the arrival of the 997 Speedster and, more recently, 2018 welcomed another 911 Speedster in the form of a run-out model for the 991. I can't wait to see Porsche's next take on this classic concept.

THE 964 SPEEDSTER SOUGHT A HAPPY MEDIUM BETWEEN THE CARRERA 2 AND THE HARDCORE CARRERA RS

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1973 Porsche 911E Targa stock #12666

Here is a recently discovered 1973 Porsche 911E Targa featured here with matching numbers is available in its factory color code #117 Light Yellow with a black interior. It comes equipped with a 5-speed manual transmission, 4-wheel disc brakes, G26 Group option: S trim, heated rear glass, sway bars, S instrument, air conditioning, and Fuchs wheels. This is an extremely original Porsche 911E (please review the paint meter reading photos). A very sought-after original blue plate California car that is an excellent addition to any Porsche enthusiast. Don't miss your chance to acquire this original 911 that is mechanically sound. **For \$98,500**



1996 Porsche 993 Turbo #15340

Presenting this beautiful 1996 Porsche 993 Turbo Coupe featured with 37,613 on the odometer and finished in a gorgeous color combination of Polar Silver Metallic with a black interior. Equipped with a 6-speed manual transmission, Flat 6 cylinder 3.6-liter engine, 4-wheel disc brakes, air conditioning, power side mirrors, power windows, front seats w/electric height, automatic speed control, sunroof, Porsche Twist wheels with Bridgestone tires, tool kit, air compressor, Alpine radio, Quartz VDO clock, and a spare tire. Also includes the owner's manual booklet and warranty booklet. An extremely sought-after and well-equipped air-cooled 993 Turbo that is mechanically sound.

For \$229,500



1997 Porsche 993 Turbo #15255

Presenting this beautiful 1997 Porsche 993 Turbo featured with 21,588 miles on the odometer and available in its factory color code #39C Midnight Blue Metallic with a blue interior. The vehicle comes with a clean Carfax and is equipped with a 6-speed manual transmission, Flat 6 cylinder 3.6-liter engine, air conditioning, sport seats, automatic speed control, power mirrors, power windows, power steering, power sunroof, 4-wheel disc brakes, Porsche Twist wheels, tool kit, air compressor, jack, and a spare tire. Also includes paint meter reading photos. Both the color code and options sticker are still in place under the hood. An extremely desirable low mileage air-cooled Porsche Turbo that is also mechanically sound.

For \$295,000



1974 Porsche 911 Coupe #14935

This desirable 1974 Porsche 911 Coupe featured with matching numbers is available in its factory color code #908 Grand Prix White with a black interior. The vehicle comes equipped with a 5-speed manual transmission, Flat 6 cylinder 2.7-liter engine, air conditioning, 4-wheel disc brakes, Fuchs wheels, jack, and spare tire. An excellent original blue plate California that is a car mechanically sound.

For \$54,500



1992 Porsche 964 Carrera 2 Coupe #15041

Presenting this 1992 Porsche 964 Carrera 2 Coupe featured with 79,838 miles on the odometer and is available in its factory color code #37W Midnight Blue Metallic with a sand beige interior. The vehicle comes equipped with a 5-speed manual transmission, Flat 6 cylinder 3.6-liter engine, air conditioning, automatic speed control, power windows, power steering, sunroof, 4-wheel disc brakes, and spare tire. Both the color code and options sticker are still in place under the hood. Also includes recent service documents and receipt copies totaling over \$19,000 that has been invested in the vehicle from December 2018 through November 2019. A well-maintained air-cooled Porsche that is mechanically sound.

For \$94,500



1988 Porsche 911 Turbo M50S Slant Nose #15141

Presenting this 1988 Porsche 911 Turbo M50S Slant Nose (#266 out of 701) featured with matching numbers and is available in its factory color code #80A India Red with a black interior. The vehicle comes with a clean Carfax and is equipped with a 4-speed manual transmission, Flat 6 cylinder 3.3-liter engine, air conditioning, power windows, sunroof, 4-wheel disc brakes, factory slant nose body option, limited-slip differential, Fuchs wheels, air compressor, and a spare tire. Both the color code and options sticker are still in place under the hood. Also includes the original warranty/maintenance booklet. An extremely desirable limited production Turbo M50S Slant Nose that is mechanically sound.

For \$119,950



2004 Porsche 911 Turbo Cabriolet X50 6-Speed #14746

Presenting this well-equipped 2004 Porsche 911 Turbo Cabriolet X50 6-Speed that is available in Silver Metallic with a black interior. The 911 Turbo comes equipped with a 6-speed manual transmission, Flat 6 cylinder 3.6-liter engine, X50 Turbo Power Kit, automatic speed control, air conditioning, power mirrors, power windows, power steering, power seats (driver/passenger), roll bar, soft top, 4-wheel disc brakes, Porsche Twist wheels, and spare tire. An excellent and desirable convertible sports car that is mechanically sound.

For \$49,950



1989 Porsche 911 Carrera Coupe #15132

Presenting this 1989 Porsche 911 Carrera Coupe featured with matching numbers and finished in a color scheme of its factory color Black (A1) with a tan interior. This 911 Carrera is powered by a 3.2-liter engine and 5-speed G50 manual transmission. Equipment includes automatic speed control, air conditioning, 4-wheel disc brakes, power windows, electrically adjustable outside mirrors, power seats, sunroof, Fuchs wheels with Uniroyal Tiger Paw tires, tool kit, and a spare tire. The color code and options sticker are both still in place under the hood. In addition to the equipment, the car comes with the owner's manual booklet and service record receipts totaling over \$12,000 dating from 1995 through 2017. An extremely desirable air-cooled Carrera that is mechanically sound.

For \$79,950



1979 Porsche 930 Turbo Coupe #14909

Presenting this amazing color combination 1979 Porsche 930 Turbo Coupe featured with matching numbers and 73,014 miles on the odometer. Available in Petrol Blue Metallic with a black interior. The 930 Turbo comes equipped with a 4-speed manual transmission, Flat 6 cylinder 3.3-liter engine, air conditioning, sports seats, power windows, sunroof, 4-wheel disc brakes, Fuchs wheels, and spare tire. Also includes service documents and receipts copies totaling over \$6,000. An extremely sought-after air-cooled Porsche Turbo that is mechanically sound.

For \$139,950



1972 Porsche 911T Targa #15381

Presenting this striking 1972 Porsche 911T Targa featured with matching numbers that is finished in a rare exquisite color scheme of Viper Green that is the original factory color #225 combined with a black interior. Equipped with a 5-speed manual transmission, Flat 6 cylinder 2.4-liter engine, 4-wheel disc brakes, Fuchs light-alloy wheels with Dunlop D50 A2 tires, rubber bumperettes front / rear, leather covered steering wheel, jack, tool kit, aluminum door sills, chrome rocker panels, vintage VDO Kienzle clock, and a spare tire. Also includes the owner's manual booklet, maintenance book with stamps, and service receipt copies totaling over \$31,000 dating from 1988 through 2000. An extremely sought-after 911T that is an original blue-plate California car in a stunning color combination and has been with the same owner since 1987. A one-year-only external oil filler door 911 that is mechanically sound.

For \$125,000



1985 Porsche Carrera Coupe Turbo Look M491 #14637

This rare limited production 1985 Porsche Carrera Coupe Turbo Look M491 featured with matching numbers and 25,182 miles on the odometer is available in its factory color code #700 Black with a black interior. The vehicle comes equipped with a 5-speed manual transmission, Flat 6 cylinder 3.2-liter engine, air conditioning, automatic speed control, limited-slip differential, central locking system, steering wheel with raised hub, sports seats, power windows, sunroof, 4-wheel disc brakes, Fuchs wheels, and spare tire. Also included are receipts copies totaling over \$3,000 which included a major service done on September 2, 2021, at a cost of \$2,595. An excellent opportunity to jump into the ownership of this original California car. An extremely collectible and well-equipped factory Turbo Look Porsche that is mechanically sound.

For \$135,000



1993 Porsche 911 RS America Non-Sunroof #15160

Presenting this highly collectible 1993 Porsche 911 RS America Non-Sunroof (one of 701 examples built for 1993) and is available in its factory color code #741 Black with a black interior. The vehicle comes equipped with a 5-speed manual transmission, Flat 6 cylinder 3.6-liter engine, air conditioning, power windows, aftermarket sound system (factory stereo included), rear seat delete, sports seats, RS door panels, 4-wheel disc brakes, spare tire, and tool kit. Also includes the original owner's manual, and maintenance booklet, as well as service documents and receipts copies totaling over \$38,000 invested in the vehicle which includes a major service done in the last 2 years. Do not miss your chance to own this amazing, strong-running, and well-maintained RS America that is mechanically sound.

For \$139,500



1980 Porsche 911SC Weissach Coupe #15073

Presenting this limited edition 1980 Porsche 911SC Weissach Coupe (1 out of 408 ever produced) featured here with matching numbers and 61,126 miles on the odometer. Available in its factory color code #655 Platinum Metallic with doric gray leather with a burgundy piping interior. The 911SC comes equipped with a 5-speed manual transmission, Flat 6 cylinder 3.0-liter engine, air conditioning, power windows, sunroof, 4-wheel disc brakes, Fuchs wheels, spare tire, and tool kit. Also includes service documents and receipts copies dating from 1987 to 2021 totaling over \$26,000. An excellent opportunity to jump into the ownership and this gorgeous low-mileage sports car that is mechanically sound.

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FORWARD THINKING

Based on a two-litre 911 S assembled in late 1966 for the 1967 model year, this eye-popping Porsche was built not only to evoke the look of the 911 ST campaigned by Gerard Larrousse in the 1970 Tour de France, but also to pack even more of a punch than the iconic motorsport machine...

Words Dan Furr Photography Dan Sherwood







Backdating has long been *de rigueur* in the classic Porsche scene, so much so taking a late air-cooled 911 and transforming its looks to mirror those of a far earlier example of the model is now big business. Really big business.

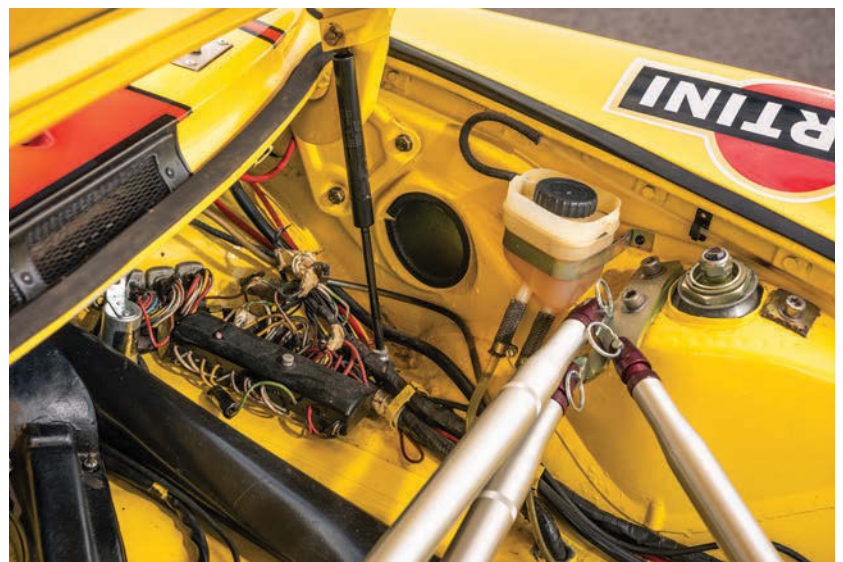
At the extreme end of the scale, output from brands such as Singer Vehicle Design commands massive money when new and even more auction, highlighting the imbalance of supply and demand — budget in the region of two million of your hard-earned for a 964-based Singer Dynamic and Lightweight Study (DLS), mixing headline-grabbing power, exotic composite materials and other F1-derived technology in a 964 package looking very much like an older 911, albeit one which has been living on a years-long staple diet of anabolic steroids.

What we don't hear much about anymore is forward-dating. Back when air-cooled Porsches weren't worth what they are today, this practice was commonplace — 911 SCs and Carrera 3.2s in particular were equipped with 964 engines, body kits and interior componentry, the exact opposite of what we see happening in the present. Rarely would any form of forward-dating be applied to a much older 911, which is what makes the car you see on these pages so intriguing — even when the prices of air-cooled Porsches hit rock bottom, an early 911 S in excellent cosmetic and mechanical order remained a valuable asset. Veering from standard specification through personalisation would likely have had detrimental impact on its financial worth. Far better to modify a tired 911 from a more numerous later generation. If done correctly, the work might even improve the value of the car.

And yet, here we have a late 1966 (for the 1967 model year) two-litre 911 S forward-dated to evoke the 2.3-litre 911 ST driven by Gérard Larrousse in the 1970 XVème Tour de France Automobile. What exactly is a 911 ST, though? Allow us to explain.

The first factory racing 911 was simply designated R (for *Renn*) and was unveiled in 1967. It was an austere, pared-to-the-bone, hot two-litre coupé with many fibreglass panels and perspex windows. Its successor was the TR of 1968, quickly followed by the ST in 1970. Under the direction of Porsche motorsport director, Baron Fritz Huschke von Hanstein, the intention was to run the R in sportscar racing, but homologation rules pitched it in with prototypes. Consequently, in 1968,

Above 1970 Tour de France Shell Oils livery has been painstakingly hand-painted and lacquered





Above and below Two-litre flat-six has made way for a high-output three-litre unit benefiting from a raft of considered electronic and mechanical upgrades

Porsche created the 911 TR, a 911 T chassis making use of a 911 S engine and homologated as a Group 3 GT car — still relatively modified, but less so than the R. Somewhere in the region of thirty-six TRs were built and campaigned by professional and amateur race and rally teams alike.

For 1970 and 1971, following the FIA's decision to allow big changes to production cars for GT racing, Porsche reasoned a lightweight version of its 2.2-litre S would be the perfect 911 for touring car racing and rallying. Thus, the ST was born, and though the rally cars retained standard engines, racing versions were initially increased by 52cc, accompanied by a power hike from 180bhp to 240bhp, fired by twin-plug ignition and mated with a 901 transmission and limited-slip differential. Only a handful of 2.3-litre STs were built in race and rally form, with a further twenty-three units of the later 2.5-litre ST designated as race cars. Like the TR, the ST designation was an in-house Porsche amalgam of existing model identifiers: an S engine and the lighter T chassis.

There was far more going on with the ST than just

an increase in swept capacity. Wider wheels and tyres for enhanced grip required flared wheel arches front and rear. The solution was a fascinating mash-up of materials. For example, on the early ST, the front wings, bonnet and bumpers were made of fibreglass, the rear quarters were steel, while the doors and engine lid were constructed from aluminium. Aside from the windscreen, all windows were acrylic. The rear three-quarter panels, roof and rear seat-pans were made from thinner-than-usual gauge steel, while all extraneous fixtures and fittings were left out, from glovebox lid and ashtray to front and rear lid locks, door and bumper trim strips. There was no sound deadening or floor mats. Even the paint was thinned.

RIM RAIDERS

Apart from a front strut brace, 908/2 brake calipers and a competition fuel tank with a central bonnet filler cap, the running gear was little changed from the stock 911 S. Visually, the most obvious indicator of the ST's identity is the difference in wheel types — since Fuchs did not yet produce rims boasting nine inches of width, Porsche had to look elsewhere. It found what it needed at Minilite. The company's eight-spoke competition wheels, ubiquitous in contemporary touring car racing, were not only available in the desired size, but they were made of sand-cast magnesium, lighter than aluminium.

Looking back at the 24 Hours of Le Mans is an excellent guide for seeing what race cars were on the scene at any particular time. In 1970, four of the eleven 911s running in the daylong French enduro were ST specification. The 2.3-litre Ecurie Luxembourg entry, sporting no.47 down its flanks and driven by Erwin Kremer and Nick Koob, was the only finisher, placing seventh overall. Meanwhile, as mentioned earlier, an ST dressed in the psychedelic red-and-yellow livery inspired by the Shell Oils logo was built for Gérard Larrousse to campaign the 1970 XVème Tour de France Automobile. The car finished third overall.

Larrousse encouraged Porsche's engineers to ditch





even more weight from the ST than they already had. As a result of his powers of persuasion (the promise of champagne may have helped), they dropped a scant eight hundred kilos by another twenty. He was leading the event until a clutch complaint on the final day of the tournament saw him drop to third overall. Even so, this particular ST has gone down in history as the lightest 911 ever built. The following year, however, was arguably the ST's heyday, when there were nine STs out of eighteen 911s running at Le Mans. Raymond Touroul and Andre Anselme finished sixth overall and first in the GT class driving the no.63 ASA Cachia Bundi entry.

ST specification shifted for 1972.

Appendix J

permitted only the 911 S's fibreglass front bumper, complete with embryonic airdam, to be used on the competition car. Ahead of the season, a number of 2.5-litre 911 S coupés were built for racing under option M491, bearing the same chassis numbering as the standard 911 S, though for this reason it's not easy to say exactly how many were created at the factory and how many were subsequently fettled to ST specification by private teams. It's also worth noting it's only retrospectively this group of cars has come to be known as ST — Porsche management discouraged the identifier at the time, though it was the preferred label within Weissach.

These 1972 STs were fitted with bigger bore (86.7mm x 70.4mm) 2,492cc competition flat-six engines (Type 911/70) and were assigned a special serial number group, coupled with uprated gearboxes with improved cooling and full pressure lubrication. Suspension modifications included new anti-roll bars and harder Bilstein shocks. A half roll-cage was located in the rear of the stripped-out cockpit. Importantly, there were significant differences in panel composition to the earlier STs — except for the front spoiler, the rest of the

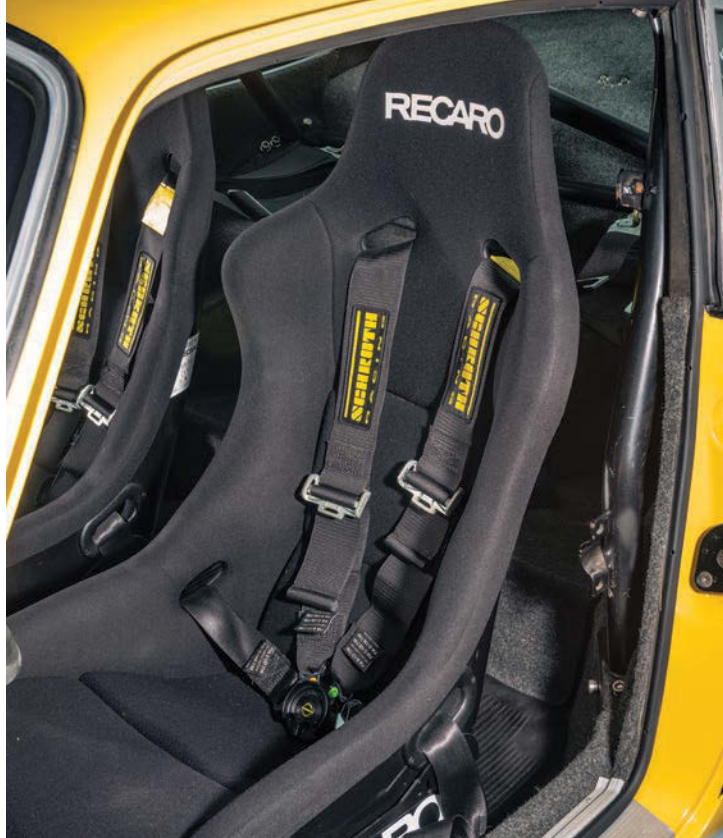
body panels were fabricated in steel or aluminium, including steel front wings and an aluminium valance between the deleted overriders, adding up to a given weight of 1,025kg.

Stylistically, what's intriguing about the ST is the flaring of the wheel arches and the way the front wheel arches marry up so beautifully with the neighbouring bumper and front valance. And, of course, there's the rather heroic swell of the rear wheel arches.

The interior cladding of the M491 cabin was black, with simplified door panelling. Furniture consisted of Recaro bucket seats with leather sides and cloth centre sections, criss-crossed by four-point harnesses anchored from the rear bulkhead. A smaller 380mm four-spoke steering wheel was fitted and lightweight door linings featured thong openers and manual window winders. There's no clock and the rev counter is in the

Above Under the auspices of factory styling wizard, Anatole Lapine, Porsche produced some of its most memorable race car body graphics as the 1970s got underway

WHAT HE HADN'T ANTICIPATED WAS THE OFFER OF RIGHTS TO THE VINTAGE SHELL OILS BRAND



Above Race car office is ready for the car's next owner and an attack of the track – that's right, this amazing 911 could be yours

conventional position, rather than being upside-down, racer-style. Obviously, the door pulls pre-date those found in the RS.

STs were delivered with Weber carburettors, but could later be specified with Bosch mechanical fuel injection. STs also made use of custom camshafts and pistons, each engine blueprinted with polished intake and exhaust ports, plus the aforementioned twin-spark dual ignition system. In this specification, the 2.5-litre engine developed an impressive 270bhp at 8,000rpm. This kind of poke came at great cost, though – the ST was priced at DM49,680 ex-factory, which was getting on for a heady £30,000 in 1972. To put this in perspective, back then, this sum could have bought you a couple of houses.

So, then, to the car we have here. Regular readers will know we've regularly dipped into the extraordinary collection of historic Porsches bought, restored and maintained by Bedfordshire-based marque specialist,

Export 56. Whereas the cars we've previously featured have belonged to the company's clients, the Larrousse-liveried ST tribute here is the personal Porsche of Export 56 founder, Mick Pacey. "I bought this car back when you could get hold of a Carrera RS 2.7 in Touring specification for thirty-five grand! It was a funny time for Porsches. The air-cooled era of production was over, the water-cooled era was underway. Nobody wanted Carrera 3.2s or 964s and everyone seemed to hate the 996. It was a challenge to make money buying and selling Porsches, demonstrated by the fact there were very few marque specialists around. There was certainly a far lower number of Porsche enthusiasts than there is today."

SHELL SHOCKED

Export 56 was one of the few UK-based businesses specialising in the restoration and trading of historic Porsches of provenance. Whether 356 Speedster, original M491 ST hillclimb machine, 550 Spyder or Carrera RS 2.7, if it was in Britain, there was a strong chance it would be offered to Mick and, most likely, would end up passing through Export 56's workshop doors. What he hadn't anticipated was the offer of rights to the vintage Shell Oils brand. "I was buying matching-numbers right-hand drive cars in need of restoration for six grand and we were lucky to get thirty-five for them once restored. This sounds like big profit until you take into consideration the amount of work involved in restoring old Porsches." A positive effect of the sharp rise in the values of classic Porsches since the Great Recession is the fact restoration budgets for these cars have risen accordingly – no longer is the cost of professionally (and properly) resurrecting a tired air-cooled classic uneconomical.

Recognising restoration of air-cooled Porsches was a tough business to be in, Mick saw real potential to have fun with the Shell Oils brand. "The idea was to travel around Europe promoting Shell Oils products at various motoring events," he continues. "Moreover, I was excited about the opportunity to promote Shell's





long and illustrious history with Porsche, which is often overshadowed by the oil giant's relationship with Ferrari, which is far more well-known, primarily because of the pairing's prominence in Formula One."

Indeed, F1 is an arena in which Porsche has experienced little visible brand awareness, even when its role as engine supplier to McLaren during the Woking concern's best years in the sport is taken into consideration. Granted, Porsche entered F1 as a constructor in the early 1960s, but its only success was in the 1962 French Grand Prix, held in Rouen, where works driver, Dan Gurney, took top honours with the Type 804. The eight-cylinder single-seater remained competitive for the rest of the season, but Zuffenhausen's bean counters questioned modest results achieved by the works team's F1 programme when the huge cost of developing its cars was taken into consideration. Consequently, despite a quartet of 804s being built — the last of the four now resides in the belly of the Porsche Museum — our favourite marque withdrew from F1 come season end.

"If you think back to the late 1960s and early 1970s," Mick continues, "the vast majority of cars were, well, dull. Beige over plain brown was a popular finish, but in contrast, under the direction of factory stylist, Anatole

Lapine, Porsche race car livery was wildly adventurous." He's not wrong. The 1970 24 Hours of Le Mans alone brought us the 'hippie' green-and-purple psychedelic styling of the no.3 Martini 917 long-tail, plus the striking tapered white stripes and bold red body of the winning no.23 Salzburg 917 short-tail. And, of course, being driven by Larrousse and rally star, Maurice Gelin, was the Shell-sponsored 911 ST, resplendent in its swirling red stripes over eye-popping yellow paintwork.

When the car you see on these pages came to

Mick's attention, he knew it was the perfect Porsche for his Shell Oils promotional plans. "I was fascinated by the fact the livery is hand-painted and lacquered," he

gasps. The exquisite finish is indicative of the standard of the car as a whole, though Mick admits he is unsure why a perfectly good two-litre 911 S was used for the build. "The metalwork is outstanding," he tells us. "The car retains its original main shell, floors, sills and front wings. Obviously, to create the ST look, the wheel arches have been flared and the bonnet features a cut-out for the fuel filler, which feeds a hundred-litre plastic tank. The doors feature lightweight steel skins, the engine lid is made from the same material and there's an early-style front bumper modified with intake vents for an offside-mounted oil cooler." A plastic ST rear bumper,

Above This very 911 was star of the 2015 Gumball Rally and was on display at Porsche Experience Centre Silverstone

RATHER THAN A 2.3-LITRE FLAT-SIX, A TWIN-PLUG, HIGH COMPRESSION THREE-LITRE BOXER MAKES ITSELF KNOWN



Above Thanks to the mountain of aftermarket suspension equipment fitted to the car, it handles just as good as it looks

horn grille blanking plates, a heated front windscreen and bonnet-mounted Cibie spotlights (complete with protective covers) also contribute to the updated look of this gorgeous 911, as do staggered Fuchs five-leaves, which feature nine inches of width at the rear and deviate from the Larrousse ST's adoption of Minilites.

Specification becomes more adventurous when Mick's car's mechanicals are inspected. The original two-litre engine is long gone, but rather than a 2.3-litre flat-six residing at the rear, a twin-plug, high compression three-litre boxer makes itself known. Linked to a 915 gearbox, the engine makes use of Weber 40mm carburettors, 964 camshafts, Mahle pistons (12.5:1 compression), titanium retainers, BS valve springs, a Facet fuel pump, Fram fuel filter, K&N air filters, PermaTune twin electronic ignition, Magnecor HT leads, a 911 Turbo (930) tensioner with race locks, late-spec valve covers drilled for the lower spark plugs, SSI heat exchangers, a twin race exhaust system (two in, two out) and a fibreglass engine shroud with an amber hue.

The running gear is equally tip-top, featuring a wealth of equipment from Tarett Engineering and Elephant Racing, including hollow anti-roll bars and mounts, a 935-style triangulated strut brace, control arms with polybronzed bearings, quick-change spring plates, 27mm hollow torsion bars and Von Shocks street-spec coilovers. Helping keep power and handling in check is a set of C12 six-piston brake calipers.

CRYING WOLF

With such improved power, handling and stopping abilities, this 911 has clearly been built to be used in the spirit of an ST. The cabin confirms as much, thanks to the appointment of a Safety Devices six-point roll cage, Schroth multi-point safety harnesses, Recaro bucket seats, lightweight carpets, a clock delete and, though not present during our photo shoot, a 380mm RS steering wheel (substituted with a MOMO three-spoke in our pictures) and a rev counter reaching all the way to 10,000rpm. Forget forward-dating to make an older Porsche seem more modern in both looks and performance — what we have here is wolf in wolf's clothing, not that Mick had any real idea what he wanted to do with the car beyond its presentation duties as a promotional tool for his Shell Oils activities, a high point of which was the 2015 Gumball Rally.

"We shut down Regent Street in the heart of London," Mick smiles. "We then erected a mock vintage fuel filling station and filled it with old Ferraris, motorcycles associated with the Shell brand and, of course, my 911 ST evocation. The car was then used as the rally's entry promotional vehicle and made various appearances at high-profile events whenever the Gumball landed in towns and cities in mainland Europe." Archive photographs show the not-so-mellow yellow Porsche strutting its stuff in Dutch football stadiums, as well as at the Goodwood Festival of Speed. The car was even an exhibit at Porsche Experience Centre Silverstone.

While all this was going on, Export 56 commissions





were ramping up, meaning beyond Shell Oils promotional duties, Mick was struggling to find time to hop into the driver's seat. "I loaned the car to a client, who promptly entered into a three-day rally in Wales!" he laughs. "The Porsche performed brilliantly, but this is really the only action the car has seen since my name appeared on its logbook. I've simply got too many cars and not enough time to drive them all," he sighs, signalling he'd be open to parting with this beautiful 911 should the right offer come his way.

The exacting chassis and powertrain arrangement make it obvious this is a Porsche begging to be punished, but it's the striking livery which commands the most attention. "It really speaks so much about what Porsche was doing during a spectacular period in the brand's motorsport history," Mick reasons. "The pace of change from the introduction of the 901 through to the 911 R, TR, ST and then onto the Carrera RSR is almost unbelievable. It was a brilliantly creative period at Porsche. Shell was a key sponsor, and would continue to be so, albeit more prominently than it was during the late 1960s and early 1970s."

THE CHASSIS AND POWERTRAIN ARRANGEMENT MAKE IT OBVIOUS THIS IS A PORSCHE BEGGING TO BE PUNISHED

One only needs to see the oil company's branding and distinctive livery covering the bodies of the 1987 944 Turbo Cup and same-age 962 C stored in the Porsche Museum for confirmation. And, bringing us bang-up-to-date, Porsche and Shell are continuing their long and fruitful partnership with a network of cross-border high-performance charging points for EVs at various Shell

filling stations located along Malaysia's North-South highway, offering drivers of Taycans convenient travel between Singapore, Kuala Lumpur and Penang.

Should you be able to find one today, the cost of acquiring a genuine ST is in the millions. Even assembling a car like the one you see here will prove hugely expensive, and that's without the purchase price of the donor 911 taken into consideration. Far more cost-efficient to buy an ST evocation built to a high standard. Finding such a Porsche is easier said than done, though it's the sort of request Export 56 is used to receiving from its client base. For now at least, Mick knows exactly where to locate one of the best ST evocations out there. Form an orderly queue. **CP**

Above One of the finest-looking 911s we've featured in *Classic Porsche* and a car we wish we were in a position to bag for ourselves

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The screenshot shows the Elephant Racing website's Package Builder interface. At the top, there's a navigation bar with links for Car Builds, Tech, Instructions, Newsletter, and Shopping Cart. A banner indicates 'ORDERS OVER \$250 SHIP FREE WORLDWIDE'. The main header features the Elephant Racing logo and a search bar. Below the header, a row of dropdown menus lists car models: 911, 964, 993, 996/997, 991, Boxster/Cayman, 914, 944, and 356. The 'Package Builder' section is divided into three steps: 1. Select Year & Model (with Year set to 2004 and Model set to 996/997/986/987), 2. Select Your Package (with Street Performance 2 selected), and 3. Customize Package (with an 'Add To Cart' button). The 'Suspension' and 'Brakes' sections display grids of various parts. A 'PACKAGE CHARACTERISTICS' sidebar on the right shows 'RIDE COMFORT' at 41 and 'PERFORMANCE' at 63.

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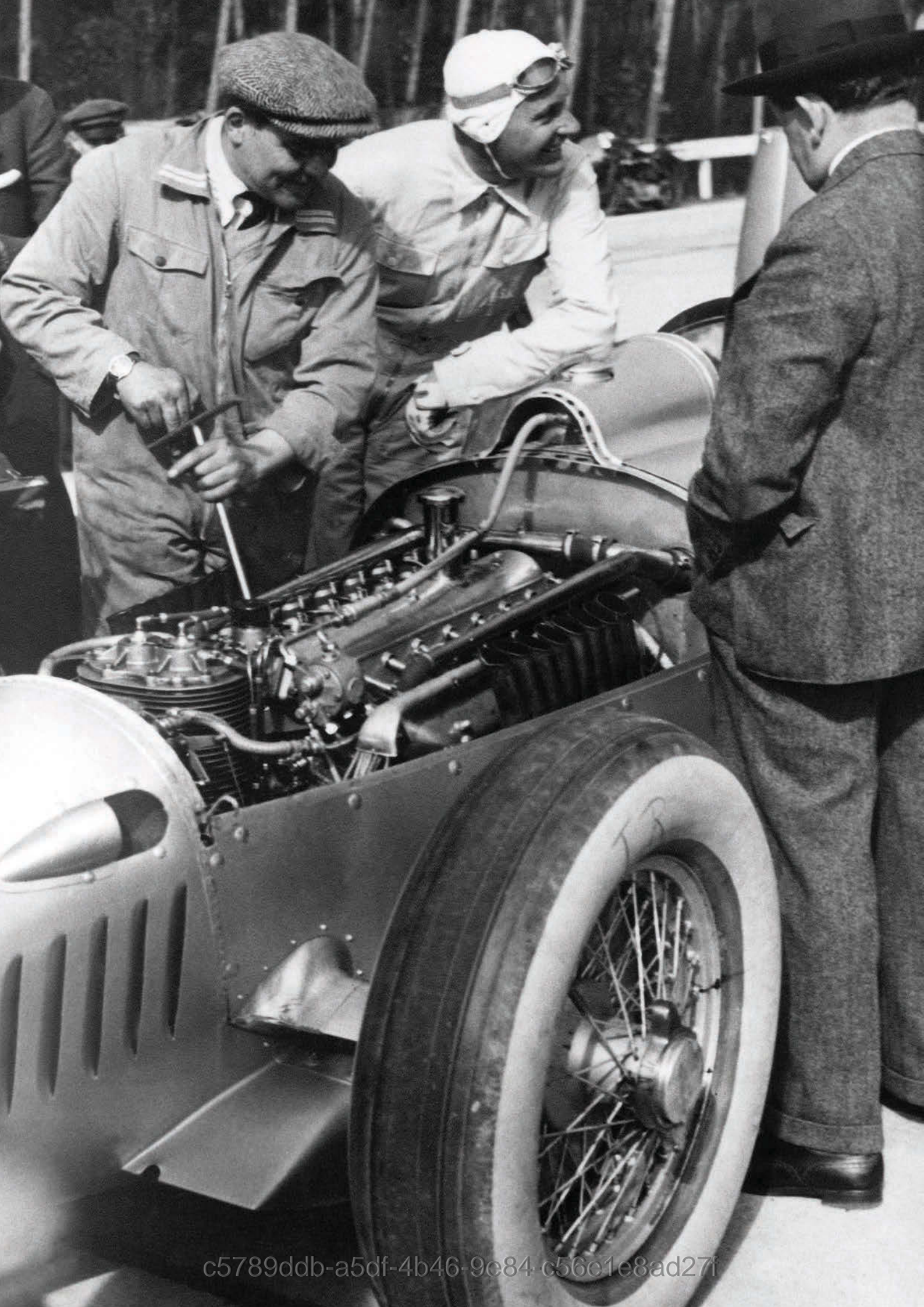
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MAKING A DIFFERENCE

A result of Auto Union race cars struggling with traction, Ferdinand Porsche conceived the very first limited-slip differential, a design heavily influencing the production of all sports car transmission systems thereafter...

Words **Shane O'Donoghue** Photography **Dan Furr, Porsche, Quaife Engineering**

Once you've experienced LSD you won't want to ever go back. I'm talking about a limited-slip differential, not the hallucinogenic drug the CIA once thought could be used to mind-control its adversaries in the Cold War. In fact, the limited-slip differential pre-dates the proliferation of this particular mind-altering substance by a few decades, though, curiously, there is a link to the military.

Ferdinand Porsche, with the backing of Adolf Hitler, was instrumental in establishing the Auto Union motorsport team. He oversaw the engineering of its famous race cars, starting with the Type A (Type 22 in Porsche parlance) in 1934. Porsche and his engineering team continually improved the car over the next three years. The Type C was developed for the 1936 season and, like its predecessors, was powered

by a mighty V16 engine. Capacity was increased to 6,005cc and peak outputs were 513bhp at 5,000rpm and a massive 629lb-ft of torque at just 2,500rpm. This in a car weighing only 824kg. The much less powerful Type B before it already had serious traction issues, despite the use of a rear-mounted engine and rear weight bias. Extreme wheelspin of the unloaded rear wheel was experienced during cornering, adversely affecting the vehicle's handling.

Ferdinand Porsche is credited with the idea of a limited-slip differential to contain this wheelspin. ZF was commissioned to turn his design into reality. Little did he realise what a profound effect his invention would have on the future of sports car production.

Before we delve into the design of a limited-slip differential, it's important to understand the workings of a regular (or 'open') differential. Regardless of whether a car is front-wheel drive, rear-wheel drive or all-wheel drive, when it goes around a corner, the wheels on the outside of the curve have further to travel, which means they must turn at a faster rate than the wheels on the

other side of the car. For the driven wheels — again, regardless of which axle they are on — it is necessary to fit a differential to, quite literally, allow a speed differential between wheels on the same axle.

Using a system of gears, an open differential always splits the torque output from the engine evenly between the two wheels. "Hang on!" I hear you cry. "Didn't you just tell us a differential allows for a speed difference?" It certainly does, but it does so while keeping the torque split equal. This probably requires a little more explanation and revisiting our understanding of the relationship between torque, speed and power.

Torque is a twisting force applied to something. In this case, a driveshaft. Torque can be produced even if there is no motion.

Think of trying to twist a tight lid off a jar of marmalade. Even if it doesn't budge, you're still applying a torque to it. This is an important detail to remember. Power is

defined as the rate of doing work. In this case, the work is the application of torque, meaning power is the rate of applying torque. The rate is simply the speed. Put simply, the power output is proportional to the product of the speed and the torque. If either the speed or the torque increase, then so does the power. In our example of opening a jar lid, there is no power, which sounds counter-intuitive, but will make more sense in a moment.

POWER STRUGGLE

As mentioned, an open differential splits torque output from the engine equally between the wheels. For this to happen, and for there to be a speed differential, the power output at each wheel is variable — if the torque at each wheel is unchanged, but one is rotating quicker than the other, the faster wheel has more power. While this is necessary and useful for getting around a corner, it comes with one very large disadvantage: power takes the easiest path at all times.

In extremes, one of the wheels can stop turning completely, while the other spins at high speed. If it

FIXED-VALUE LIMITED-SLIP DIFFERENTIALS ARE THE SIMPLEST, USING SPRING-LOADED CLUTCH ASSEMBLIES

Facing page Ferdinand Porsche and race ace, Hans Stuck, with their trackside mechanic during testing of the successful sixteen-cylinder Auto Union Type A (Porsche Type 22) in 1934



takes much less torque to turn one of the wheels, such as when it's on an icy surface and when the other is not, then the same amount of torque will be applied to the wheel with plenty of traction, too. This level of torque may not be enough to move the wheel at all. Meanwhile, the wheel on ice spins quickly, taking all of the available engine power. The same thing happens if one wheel is off the ground or, more commonly on the road when a car is being driven quickly, the inside driven wheel in a corner is unloaded. With an open differential, the engine's power flows through that wheel, which is not in a great position to transfer that power to the road. Even if there is no detectable wheelspin, the handling and cornering speeds may be negatively affected.

TORQUE ON CORNERS

Now we can understand why the Auto Unions of yesteryear struggled to put their considerable performance down. That is, of course, until Porsche asked ZF to manufacture his limited-slip differential. The principle of the design (and of all limited-slip differentials since) is to use a mechanism within the casing of the differential to apply torque to the output shafts in a bid to minimise speed differential between the wheels.

Through the years, there have been many variations on the theme. Fixed-value limited-slip differentials are the simplest, using spring-loaded clutch assemblies. This design uses the spring force to set a maximum torque difference between the output shafts. It's not a terribly sophisticated design, but it's more effective than an open differential in certain circumstances. Speed-sensitive limited slip differentials are more widespread. As the name suggests, they limit the torque difference between the wheels depending on the difference in speed between the output shafts. One method is to use the speed differential to turn a gerotor pump to increase hydraulic pressure within the differential. This pressure then causes a clutch pack to compress, with the result being a transfer of more torque to the slower

wheel. This can operate within fixed parameters as a fully mechanical system or use electronic control of the hydraulic pressure to add sophistication.

Most speed-sensitive limited slip differentials make use of viscous couplings. These take advantage of the thermal properties of silicone-based fluids which increase viscosity within a certain temperature range. The construction of the differential is quite complex, but to visualise it in relatively simple terms, the end of one of the output shafts to the wheels features an open, hollow cylinder and within it is a set of thin discs attached to its inner face with a hole down the middle. This sits over the cylindrical end of the other output shaft, which also has a set of thin discs, this time attached to its outer surface. We'll gloss over the manufacturing technique, but when assembled, the discs from one shaft alternate with those from the other in close proximity. The assembly is filled with the appropriate fluid and sealed up.

When there is little or no speed difference between the wheels, speed-sensitive limited-slip differentials

Below In 1937, a video produced by Chevrolet explained how an open differential works. The underlying principles are still relevant today, so fire up YouTube and have a search for *Around the Corner*.



Facing page Auto Union Type C delivered 513bhp and 629lb-ft torque at just 2,500rpm, with overall weight coming in at a barely believable 824kg

effectively operate like an open differential. Depending on the fluid chosen, however, and the design of the interwoven discs, when there is a speed differential, the relative motion of the discs causes friction in the fluid, increasing its temperature and hence its viscosity. It becomes more solid, in effect, resulting in a better spread of the available torque between the two wheels. Under normal conditions, this can be a smooth transition, which is a desirable characteristic from the driver's point of view. Nonetheless, the slipping effect leads to an increase in temperature, which is effectively energy that is taken from the engine. On top of this, it's possible to overheat the fluid, ensuring it never works properly again. These differentials are relatively inexpensive to manufacture, but have a limited service life. And, often, the driver is likely to have detected wheelspin before the differential can do its thing. Furthermore, because the differential operation is affected by the temperature of the fluid inside, other factors, including ambient temperature, can result in inconsistent response.

THE TORSEN DESIGN FEATURES FIENDISHLY COMPLICATED HELICAL GEARING, WHICH IS EXPENSIVE TO MANUFACTURE

Perhaps the most respected type of limited-slip differential is the torque-sensing variety. Again, the clue is in the name. There are many different designs within this category, but all restrict the speed differential between the driven wheels as a function of the input torque. In other words, the more torque produced by the engine, the more locked together the wheel speed across the axle will be, regardless of available traction. There

is usually minimal pre-load, meaning the wheels are never completely decoupled, even if there is no torque applied.

Torque-sensing limited-slip differentials are

further sub-categorised depending on how they operate on overrun (when you lift off the throttle, but the car is still in gear). A one-way differential limits the speed differential only under power. A two-way differential does the same thing under power or engine braking. The curiously titled 1.5-way design limits the speed differential under engine braking, but not to the same level as when the differential is under load. Additionally, the method of aligning the speed of the output shafts can vary. Some limited-slip differentials use a series of

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Above and below Quaife Automatic Torque Biasing (ATB) limited-slip differential is a development of the Torsen design and has proved hugely popular on the classic Porsche scene thanks to Quaife products being available for a wide range of Porsche's legacy models

This effectively means the left-hand output shaft spins slower than the differential housing. In fact, it spins in the opposite direction, relatively speaking. This takes a little bit of thinking to get your head around. Obviously, the drive shaft is still turning the wheel in the direction of travel, and the differential housing is also rotating in that direction, but imagine drawing a line on the drive shaft and another on the housing and watching just those. They will appear to go in the opposite direction to each other due to the speed difference between them. This relative motion causes the worm screw to spin in the opposite direction to that of the faster output shaft, but as they are meshed together with spur gears, the

PORSCHE HAS MOSTLY OFFERED A LIMITED-SLIP DIFFERENTIAL AS AN OPTION TO COMPLEMENT UPGRATED SUSPENSION

speed is matched perfectly (in the opposite relative direction). This means if the inner wheel slows by ten percent, the outer wheel speeds up by ten percent, allowing smooth cornering and a differential speed between the wheels. From the driver's point of view,

this should feel no different to an open differential.

When one of the wheels loses traction, the worm gear on the end of its drive shaft tries to spin at a higher speed

to that of the other wheel, attempting to spin the faster wheel's worm screw. Remember, this is meshed with the worm screw from the other output shaft through spur gears, and that worm screw cannot turn its paired worm gear. The result is that the whole mechanism locks up and more torque is transferred to the wheel with more traction. This is instantaneous due to the gearing design. You may have heard it referred to as torque-biasing.

Porsche used a Torsen-style geared limited-slip differential for the rear axle of the 968 for most of its production run, following on from earlier designs using clutch engagement. A well-known aftermarket Torsen-style differential is the Quaife Automatic Torque Biasing (ATB) unit, which is available as an add-on for many Porsche models.

STATES OF GRACE

The Torsen differential works on the principle of a torque bias ratio (TBR). Each differential is designed to have a specific TBR to suit certain driving characteristics. An open differential has a TBR of 1.0, while a differential with a TBR of 2.5 can apply drive torque to the wheel with the most traction at up to 2.5 times the traction limit of the wheel with the least traction. An American manufacturer named Wavetrac makes a limited-slip





differential based on a different design and reckons it has a distinct advantage over most other arrangements. The company points out how the Torsen is useless when a wheel is off the ground or almost completely unloaded and with zero torque going through it. It doesn't matter what the TBR is in this situation — the torque sent to the gripping wheel is only ever a multiple of that sent to the other, and if the torque is zero for the wheel in the air, then zero will be sent to the one on the ground. There will be no drive at all. It's a short-lived situation, but Wavetrac's differential has a unique mechanical addition between the drive shafts preventing this scenario from occurring, minimising time the wheels are without drive. As is true of Quaife's ATB limited-slip differential, Wavetrac's products are 'fit and forget' devices designed to last the life of the vehicle. And, as is the case with Quaife's product portfolio, there are Wavetrac applications for many Porsche models.

Through the years, Porsche has mostly offered a limited-slip differential as an optional extra, often to complement the M030 uprated suspension package. The

company makes use of purely mechanical systems to this day, albeit developed in conjunction with the host vehicle's electronic driver aids, such as anti-lock brakes and stability control. More sophisticated control of the slip across an axle using electronics is on the rise, however, and like many of Porsche's innovations, the roots of this technology can be traced much further back than you might expect, if not quite to Ferdinand Porsche's day. We'll take up the story in a future article. **CP**

Above Hans Stuck (centre) and Ferdinand Porsche (far left) with the Auto Union (Porsche Type 22) race car at the 1934 Masaryk Grand Prix in Brno, a city in the South Moravian region of what is now the Czech Republic

Left Cutaway of a Quaife Automatic Torque Biasing (ATB) limited-slip differential



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FOOD FOR THOUGHT



With his reputation for bucking convention taken into account, it should come as no surprise to learn The Outlaw Chef's Super 90-propelled 356 coupe replica is hugely personalised, but as *Classic Porsche* knows only too well, the build has been far from a piece of cake...

Words Dan Furr Photography Ade Brannan





In this line of work, it's not unusual for a scheduled photo shoot to be cancelled at the last minute. It's a frustrating situation, but goes with the territory. Often, the weather plays its part in spoiling our fun — just when we're packing camera gear and whatever else we might need for a day of photography, the owner of our intended star car will call to let us know it's hammering down in their neck of the woods. Quite apart from the fact rainfall limits our ability to shoot outdoors, it's more than likely the Porsche's owner won't want to drive their pride and joy in the wet.

Occasionally, the reason for cancellation is more serious, as was the case when we were originally due to photograph James Olley's mean, green 356 Outlaw. Fresh from final assembly, the car's 1.6-litre Super 90 engine was dead. "It pooped its oil hatch seal!" he cries. "Two days after completion of the overall build, I drove over a pothole next to a manhole cover. The rear wheel went down the pothole and the edge of the exposed manhole cover smacked the sump plug. I didn't think anything of it until thirty seconds later, when the engine suffered complete oil loss, overheated and then seized."

The car was recovered and ferried back to the Olley residence near Aberdeen, whereupon it was raised on the ramp in James' garage for inspection. The sump was ruptured and the related damage severe enough to warrant a new engine. "PR Services in Billericay came up trumps," he tells us. "They told me a Porsche specialist in Germany had restored and tuned a Super 90 flat-four for one of its clients at a cost of more than fifteen thousand euros. The unit was then shipped to England, where the buyer's 356 was kept. The engine was being stored

as a spare, however, and was never used. It remained in protective wrapping, eventually finding its way into the stock room at PR Services." With confirmation the refreshed and enhanced flat-four was available to purchase and ready to ship, James wasted no time in having it transported to Scotland.

He promptly removed his car's busted powerplant, ported its ancillaries over to the PR Services-sourced boxer and set about installing the new engine, which "popped back in without complaint, started first time and ran beautifully." A new clutch was fitted for good measure, after which we were ready to reschedule the shoot, which turned out to be the most chaotic our photographer, Ade Brannan, has worked on at any time

Above Magnus Walker Nike SB High-Top Dunks add 20bhp, though we're not sure of the performance gains delivered by the custom leather car cover bag

Below As Ade discovered, this unusual-looking car never fails to attract an audience





Above Air ride tank sits in the front luggage area and is held in place by rear seat straps

Right Super 90 flat-four was fully rebuilt by a specialist in Germany before finding its way to PR Services



during his career in magazines. "He told me he'd never seen a car get so much attention," James laughs, "which is amazing when you consider the thousands of vehicles he's photographed over the years. Each time he set up a shot, passers-by would ruin it by wandering over to paw the bodywork. Though I can appreciate Ade's frustration, we both saw the funny side. At one point, a hen party got in on the act. The bride-to-be, her bridesmaids and soon-to-be-mother-in-law climbed into the cabin and asked Ade to take pictures of them! It was a very bizarre day, but a huge amount of fun."

In fairness, parking such an extraordinary looking car in heart of Aberdeen was always go attract attention. Just look at it! The Nato Olive body — a Paint to Sample Porsche colour made famous by the 991 GT3 RS and, in this application, enhanced with a custom tint — is slammed to the ground thanks to a premium Air Lift Performance air ride kit tailored specifically to this Outlaw. The package includes a five-gallon alloy tank, an ABP X444U dual noise reduction compressor and an Air Lift 3P pressure management system. The rear

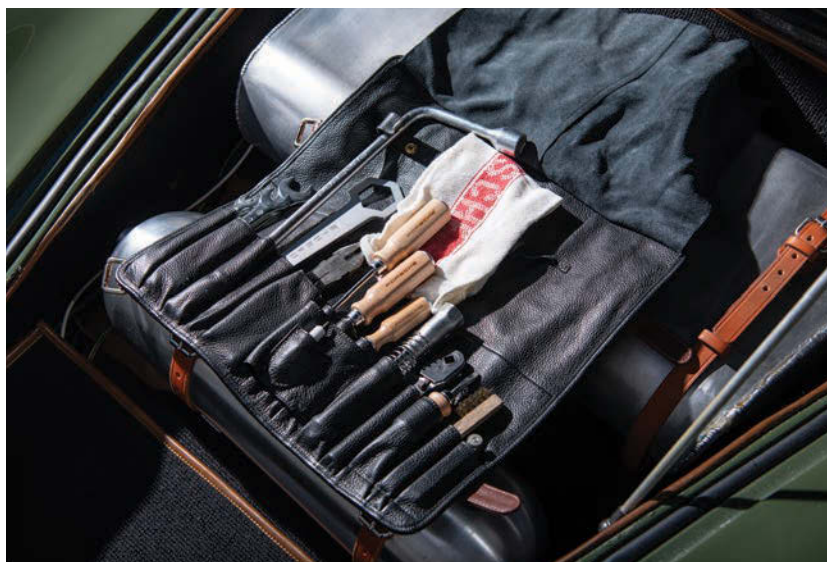
arms and front link spindles have been dropped two inches, while the torsion bars and front beam have been removed altogether. Track rod arms and ends to suit the air ride struts have been appointed, as have steering rack adjusters, ensuring full lock is achieved before the wheels and tyres attempt to grind out the inner arches.

Parts were supplied by Plush Automotive, while the fabrication work was carried out in-house at EvaResto, a Cannock-based company known for its premium air suspension conversions for air-cooled Volkswagens. The tank has been thoroughly polished and is installed in the front luggage area, where it joins a Porsche tool roll and the fuel tank (also polished). All three are held in place by 356 leather rear seat straps.

HIDE AND SEATS

Talking of leather, climb inside the car and your senses are immediately hit by the unmistakable aroma of a freshly trimmed interior. Four complete distressed tan hides were sourced from Leather4Craft, which were then handed to the BenchSmiths commercial upholstery division of the Luxous Group, which creates bespoke interiors for the hospitality and retail sector. James provided Speedster seats and gave the BenchSmiths team free reign to create whatever they thought would suit the car. The result is a what you see here, complete with olive green diamond stitching. Traditional boxweave carpets were sourced, each panel edge then trimmed in the same tan leather. The headlining, A, B and C pillars, meanwhile, were covered in crushed black velvet. A Vintage Speed twelve-inch gear shifter and a RetroSound head unit (both sourced from Cool Air) linked to hidden speakers and tweeters join a wood-rimmed three-spoke steering wheel in rounding out the cabin.

With leftover leather, the BenchSmiths team made a bespoke luggage bag to house the car cover James bought for his lower-than-low Outlaw. Now, we're not oblivious to the fact a 356 of this nature is something of a 'Marmite' car, but it suits James down to the ground (literally!). You see, he's made a name for himself





Above Red vinyl has made way for distressed tan hide with diamond stitching

experimenting with food as the self-styled Outlaw Chef. "Many chefs stick with a specific discipline or style of food," he explains, "whereas I'm equally in my element making French pastry as I am a Texas-style barbecue. I like to play with ingredients. If my experimenting doesn't work, I'll refine the recipe until I achieve what I'm aiming for." This bucking of trends has resulted in regular work as a private chef and invitations to give tutorials and speeches at various food and drink festivals around the UK. He approaches his Porsches the same way he approaches food. "I appreciate they're not to everyone's liking," he says, referencing the highly personalised 987 Cayman S and Panamera 4 E-Hybrid Sport Turismo 10 Years Edition (surely, one of the longest of all Porsche model names?!) on his fleet, "but I enjoy experimenting with a view to creating something different to the norm, hence the Outlaw you see here."

How did his love of Porsches come about? "A decade ago, I was working as a detailer full-time," he explains. "A client asked me to spend a few days carrying out full paint correction on his black 356 Speedster. I'd always been a fan of Porsche sports cars, but this particular 356, which boasted a tan interior, blew me away." His experience of Stuttgart-crested speed machines was restricted to modern, water-cooled cars. When he checked the cost of acquiring a 356 in good order, it

THE FALKEN-WRAPPED FUCHS-STYLE WHEELS LOOK HUGE WHEN THE AIR RIDE KIT DROPS THE BODY

looked like things would stay that way, too. "I ended up buying a split-screen Volkswagen camper van instead," he shrugs. "I kept it for the best part of a year before swapping it for a Chesil Speedster, which I considered was a brilliant way to enjoy a car with the looks of a 356, but without the price tag. Additionally, because I knew I wanted to modify whichever air-cooled Porsche I would end up buying, playing with a replica 356

made more sense than potentially compromising the financial worth of the real deal."

Unfortunately, the Speedster facsimile proved to be nowhere near

as good as the seller suggested. "It was a bit of a dog," James reveals. "I replaced loads of the replica parts with genuine Porsche components. The car even received a bespoke engine, but I was never satisfied. When I spotted an advertisement for a replica 356 coupe body a year later, I decided to part ways with the Chesil, but the tin-top proved to be even more of a disaster. I couldn't believe how badly manufactured it was. To make matters worse, a previous owner had cut and re-cut various parts of the body to accommodate the incorrect fitment of an air ride kit. Admittedly, the shell was advertised and sold as a project, but there was little I could do to save it. Ultimately, I gave up on the idea of owning an air-cooled car altogether."

Having fallen out of love with the idea of personalising



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Above Air ride kit and its associated plumbing have been installed without any modifications to the body

Below Bridal party decided to get in on the act, though the jury is out on whether Ade was hired to shoot the big day

a 356 (or, more specifically, a replica 356), James was surprised to be excited by an imported replica 356 coupe based on a shortened Beetle chassis when it made itself known in his eBay alerts last summer. Inspection delighted him. "The finish was incredible," he remembers. "The body was exactly as it had left the factory, completely unaltered. Additionally, the car made use of a tonne of genuine Porsche parts, including the doomed Super 90 engine. Though the interior was tatty, I knew I had finally found the perfect platform to use for my long dreamed-of Outlaw build."

In truth, James considered tidying the car and keeping it more or less as a convincing 356 replica for high days and holidays, leaving his Cayman as the primary target for modifying. "That train of thought lasted a couple of months at most," he laughs. "The windscreen seal was leaking. I reasoned I might as well take all the windows out and replace all glass seals. This presented the opportunity to replace the headlining. If doing the headlining, I figured I might as well ditch the red vinyl interior and introduce the leather you see here. At this point, I couldn't justify pairing a personalised cabin with an exterior not entirely to my standard, which is why I

decided to strip the car to a bare shell and rebuild it from the ground up."

With the assistance of a couple of friends, he stripped the car and sanded back each panel in the comfort of his generously sized garage. "The only way I can describe the original colour is to liken it to the look of baby vomit," he muses, clearly unimpressed with the original purchaser's choices in life. "I considered replacing it with black against tan, echoing the colours of the Speedster I worked on a few years back, but the GT3 RS shade won out. My mates and I decided to do the paintwork ourselves." There's that daredevil attitude again!

In retrospect, he wishes he'd taken the stripped shell to a professional paint shop. "I'm never painting a car again!" he howls. "I now have an even bigger appreciation for the skill and hard work of professional paint sprayers. What they do is really an art form and not as easy as it looks. Don't get me wrong, I'm happy with the finish my friends and I achieved, especially considering we were experimenting with a custom tint, but the bodywork took us much longer than I anticipated."

When the trio were satisfied with what they'd achieved, James set about installing the mountain of exterior parts and brightwork supplied by Exeter-based historic Porsche specialist, Roger Bray Restoration. Everything is fresh — if a component looked tatty, whether it be a horn grille, door handle, badge or taillight, James cast it aside and replaced with a new Porsche part.

The Falken-wrapped Fuchs-style wheels look huge when the air ride kit drops the body, but they're only fifteen-inchers with five inches of width ("until I can find a different wheel design I'm happy with"). In stark contrast to the butchered coupe body James bought previously, no alteration has been made to this car's metalwork to accommodate the angle of the wheels or the air ride kit's plumbing. All mounts and bushings were replaced as a matter of course. In fact, thanks to time spent designing and creating bespoke fittings for the wealth of aftermarket equipment present, the refit was relatively





straightforward. Paintwork woes aside, the main challenge was trying to identify the cause of an annoying electrical fault. "The battery kept dying. I'd installed an electric cabin heater to help demist the windscreen, plus I'd added the RetroSound head unit, but I didn't realise the car was making use of a Porsche six-volt voltage regulator. I thought the dynamo was on its way out and naively bought a twelve-volt replacement part, which, of course, isn't a straight swap. I ended up scrapping the idea and contacted PR Services with a request for one of the firm's alternator conversion kits, ideal for owners who want twelve-volt power, but aren't bothered about concours looks." The kit includes an adaptor plate (only required for the early-style 356 oil filter), fan housing backing plate, alternator stand, alternator strap, pulley hub and all required gaskets and fasteners. The alternator itself is sold separately.

Following installation of the parts, along with a 123 electronic ignition system, the car drove without fault. "It was wonderful to finally be behind the wheel!" James grins. "The car drove brilliantly. I took photos. I posted them online. I was over the moon with the build." The fun stopped when the aforementioned rogue manhole cover picked a fight with the car's sump. Ouch. Still, all's well that ends well, affording Ade the opportunity to photograph the car, not to mention giving James the opportunity to present it at a number of this summer's shows. Indeed, you may have seen it at Kulturshock at

Gateshead International Stadium, Gravity at Stoneleigh Park, the Aberdeen Performance Show and, the day after this magazine hits newsstands, Cleanfest, a detailing show held at The Royal Highland Centre in Edinburgh.

The car's appearance at Cleanfest is notable for contributing to the trade presence of automotive detailing outfit, WoWo's (wax on, wax off, geddit?!). James is one of the company's directors and will be using his Outlaw build to draw attention to the brand's

wide range of car care products, many of which will be on display. "What sets WoWo's apart from our competitors," he says, "is that we manufacture our own products. Most

other detailing brands simply buy white-label fluids and apply their logos to the bottles. WoWo's has its own manufacturing plant in Aberdeen, enabling us to make car care products to an extremely high standard with full control over the production process. We're also able to retail these products at a far more attractive price point than our competitors, who are at the mercy of the high costs laid down by their suppliers."

Needless to say, the Outlaw Chef's Outlaw Porsche is a rolling showcase of the effectiveness of WoWo's products, which cover all aspects of car cleaning. We have no doubt Cleanfest attendees will be impressed with what they see. Thankfully, it's an indoor event, meaning no chance of cancellation if the weather turns. All James needs to do is steer clear of potholes and errant manhole covers. **CP**

Above Certainly one of the more polarising cars we've ever featured, but also a build creating a buzz on the show scene right now

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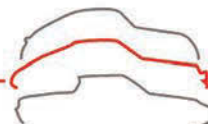
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PELICAN PARTS

Since 1997, Pelican Parts has been shipping spares for classic and modern-classic Porsches to locations all over the world. Now, in the firm's twenty-fifth year, we go behind the scenes to discover the people and projects responsible for this sensational story of success...

Words **Stephan Szantai** Photography **Stephan Szantai and Chris Youra**

The Pelican Parts name will likely ring a bell for many Classic Porsche readers. Some of you will have ordered products from the company's website. Others will have frequented the firm's incredibly popular internet forums. Several of you will know Pelican Parts for its privately owned Porsche-centric car collection, curated by business co-founder, Wayne Dempsey, and unveiled in these pages in 2017.

Based in Southern California, Pelican Parts specialises first and foremost in Porsches. The mission statement is "to provide affordable and high-quality European parts and accessories to enthusiasts worldwide," with a focus on the weekend mechanic. The brand was the brainchild of Wayne and his friend, Tom Gould. The former is alumni from the renowned Massachusetts Institute of Technology (MIT) and is a true Porscheophile, who came to appreciate European sports cars through ownership of a 1974 914. He quickly acquired a liking for turning wrenches, which led to swapping the boxy roadster's

flat-four for a potent 3.2-litre flat-six. He enjoyed working on and driving the car until 2016, when it was stolen. The thief was apprehended and put behind bars, but it took Wayne in excess of two years to secure the return of the Targa-topped two-seater.

Back in 1997, Wayne and Tom brainstormed an online business aimed squarely at the sales of automotive parts and accessories. One of the first steps involved finding a name. They tried a few using the words *auto*, *euro* and more, but ultimately gave up and decided to head to the Pacific Coast Highway in search of inspiration. At one of the day's stop-offs, a squadron of pelicans flew by. The two entrepreneurs looked at each other and knew they'd struck gold — Pelican Parts was a simple and memorable name. Their company was born.

Humble beginnings saw a small inventory filling Tom's garage, until the duo took up sticks in commercial premises close to Los Angeles International Airport (LAX). While their main focus has always been Porsches, other marques have brought the company big success —

Facing page Pelican Parts co-founder, Wayne Dempsey, tending to one of his multiple privately owned 962s

Below The Pelican Parts team includes many long-term members of staff who have seen the business expand from humble beginnings to its current office and warehouse complex in Harbor City





three years after the business was established, it began shifting BMW components. Seven years later, parts for Mercedes-Benz, Mini, Volkswagen, Audi, Volvo and SAAB joined the Pelican Parts portfolio.

The company's success can be attributed in great part to Tom and Wayne's belief in the reach of the internet, hence the huge amount of time and energy they invested in developing the famous Pelican Parts online forums. "Our forums are there for the community of petrolheads to gather together and talk about anything car-related,

whether it's asking for advice from other members or sharing fun pictures and stories of DIY builds, which many of our members are engaged in," explains Vice

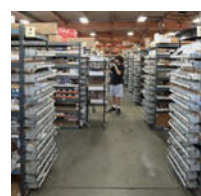
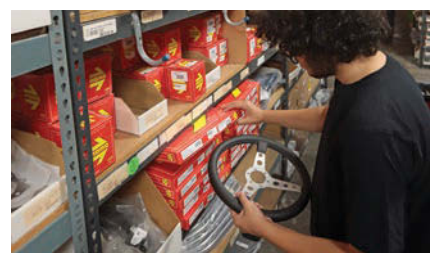
President of Marketing, Vicharin Vadakan. His team now manages a variety of free-to-view members forums, including one for all makes, one for BMW and Porsche, one specifically for the

Boxster/Cayman and, last but not least, a Mercedes-themed forum under the Peach Parts banner, which Tom and Wayne acquired in 2015. In parallel, Pelican Parts offers 4,500 tech articles, spanning topics as diverse as

Above Wayne's beloved 914 was stolen in 2016, but was subsequently recovered and remains a key fixture in the Pelican Parts car collection

Below Warehouse covers 40,000ft² and is manned by some fifty employees

A KEY MOMENT IN THE FIRM'S HISTORY WAS THE MOVE FROM ITS LAX FACILITY TO HARBOR CITY





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Steel wheel

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16"- Steel rim

5,5 x 16 ET 15	259,00 €
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Facing page A tribute to the RSR 2.8, plus Wayne's road-legal 1958 Daimler tank

Below Pelican Parts Cars & Coffee mornings regularly attract in excess of five hundred cars



how to wash cars to rebuilding engines and changing clutches. "We have over 400,000 active forum members and can enjoy more than five million monthly page views," Vicharin smiles.

A key moment in the firm's history was the move from its LAX facility to a more modern and inviting building in Harbor City, about a dozen miles south of the airport.

The clean brick structure offers far more light and an overall better working environment. Continued expansion led to the acquisition of additional warehouse space in 2015. Today, the 40,000ft² facility welcomes close to fifty full-time employees. It's a big place, but that's what you need if you're to successfully supply more than two million genuine and aftermarket parts (some drop shipped) around the globe.

Among the most notable, recent changes we should mention is the sale of the company back in 2017. Wayne is still tooling cars in the Pelican Parts garage (the space

Classic Porsche featured in 2017), but can now spend more time on his passion for Porsches instead of the day-to-day operations of the business. Tom also remains very much involved, heading up the Pelican Parts Catalogue Department. His team concentrates on adding parts to the company lines and choosing vendors.

"Who are the new Pelican Parts owners?" I hear you cry. The firm is now part of Enthusiast Auto Holdings, which includes, among other brands, Evannex (a company which is to Tesla what Pelican is to Porsche) and Rennline (an

aftermarket developer of performance Porsche parts). To be clear, Pelican Parts hasn't changed much with the new ownership, retaining the executive team led by CEO, Bryan Handlen, and hand-picked by Wayne — every board member has been with Pelican Parts for between eight and twenty-five years.

Supply and distribution of Porsche products remains the company's top priority, followed by offerings for owners of BMW and Mercedes vehicles. Of course, with a high number of parts available for their beloved cars, 911 drivers have always been spoiled, certainly when compared to owners of products from the other two German carmakers mentioned. In truth, the supply chain has suffered since the beginning of the pandemic, irrespective of which make or model of car you own. Thankfully, the situation is improving, and strict health protocols have helped keep Pelican Parts employees safe, allowing them to ship orders without having to shut down their offices or warehouse.

Today, the two brick buildings occupied by the business accommodate the warehouse, offices and the 6,000ft² area housing the Pelican Parts car collection. Besides being Wayne's hangout, the latter comes in handy for the company's tech team — the same space plays host to the work documented for the vast library of Pelican Parts workshop guides published online. This hallowed Porsche playground has also proven invaluable

THE SAME SPACE PLAYS HOST TO THE WORK DOCUMENTED FOR THE VAST LIBRARY OF PELICAN PARTS WORKSHOP GUIDES





for Wayne, who has written five technical books from here, including the popular *101 Projects for your Porsche 911*, *How to Rebuild and Modify Porsche 911 Engines*, and his latest tome, *Speed Read Porsche 911: The History, Technology and Design Behind Germany's Legendary Sports Car*.

HOME FROM HOME

It's a cosy place, really, which additionally serves for charity events — the team likes to give back to the community. That's right, the collection occasionally opens to the public, allowing visitors to marvel at beautiful décor (automotive memorabilia, neon signs, gas pumps, the nose of a 962 used as wall art) and a giant electric slot car track, created by a UCLA professor over an eighteen-month period. Talking of which, Wayne shows keen interest in working models, especially scaled engines, as demonstrated by the various cut-down examples on display and exhibiting their internals.

If you live in the Los Angeles area or happen to be in town, we highly recommend attending the Pelican Parts free-to-attend quarterly Cars & Coffee events, which gather together an eclectic mix of restored and customised top-notch retro rides. Unsurprisingly, Porsches make up the largest group in attendance. Wayne often shows up with an eye-popping Stuttgart speed machine — we've seen him rock up in one of his multiple 962s. In 2015, when he launched the event with help from Vicharin in the coastal city of Palos Verdes, twenty people were expected to show up. Ten times that number arrived. These popular, informal get-togethers have grown bigger since, often topping five hundred cars.

The entire Pelican Parts team — a true 'family' of

enthusiasts with a passion for all things automotive — is keeping busy with a variety of projects, the latest being a 2012 997 Carrera, the subject of planned 130 tech articles. Wayne continues wrenching Porsches and has recently concentrated his attention on three of his many rides: his 914, a 914 rally car and a 1958 356 Speedster bought from its second owner. Practicing what it preaches through the rebuilding, tweaking and modifying of these old cars remains a key ingredient in the company's success.

Currently in the throes of its twenty-fifth anniversary celebrations, Pelican Parts is undoubtedly more than a simple Porsche parts supplier. As it was from the beginning, the team's goal is to provide enthusiasts and home mechanics with everything they need to support and nurture passion for the cars they love. Here's to the next twenty-five years of Pelican Parts success! **CP**

Above and below The company's social gatherings bring out the best of the local Porsche scene, including super-exotic machinery, such as this pair of Carrera GTs



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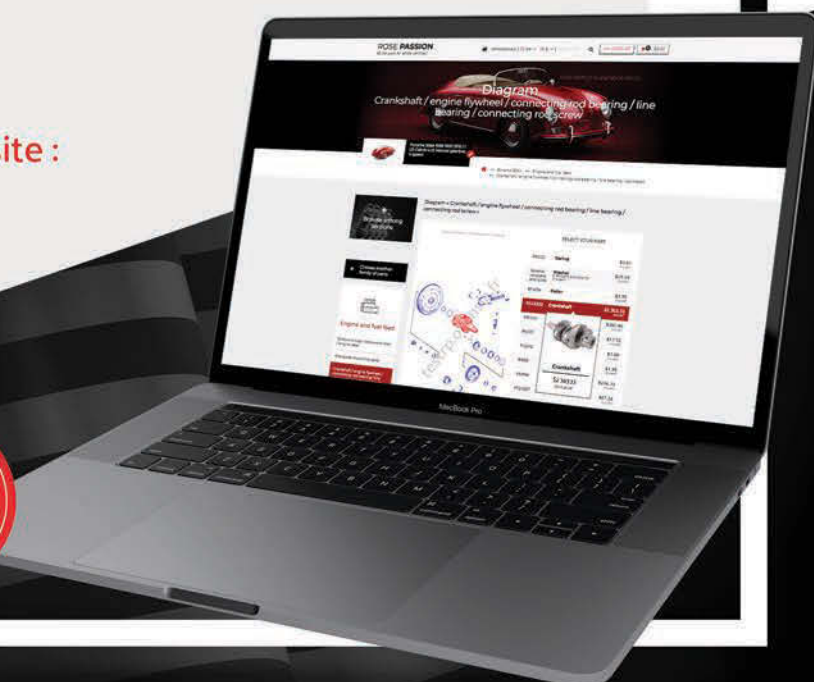
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PROFESSOR PORSCHE'S PERSONAL ARCHIVIST

If we remember much — and get to know more — about the man who created the Porsche legend, it's thanks to the career and commitment of Ghislaine Kaes. A lifelong British citizen, Kaes was at Ferdinand Porsche's elbow for twenty-one years. Karl Ludvigsen recalls getting the rare opportunity to spend a day in the company of this largely unknown Porsche personality...

Words **Karl Ludvigsen** Photography **Porsche**

Back in the day, when I was researching the life of Ferdinand Porsche, I would repeatedly come across an unusual name: Ghislaine Kaes. In the book, *We at Porsche*, co-authored by John Bentley, Ferry Porsche mentions "my father's secretary, my cousin, Ghislaine Kaes." Richard von Frankenberg referenced him as "Professor Porsche's secretary, G. H. Kaes." I was intrigued by this man, who seemed to surface at certain phases of the Porsche saga, then sink out of view.

At the Porsche factory in October 1973, I conducted the majority of my research for my own telling of the manufacturer's history. I saw and photographed the then little museum, but didn't meet Ghislaine, who was said to be looking after the Porsche archives, which he was largely responsible for establishing. When I returned to Stuttgart in May of 1974 (for the brand's twenty-fifth anniversary celebrations), I aimed to see more of the Weissach test centre and follow up on a few odds and ends, including picture research. In advance of the trip, I made efforts to contact Ghislaine Kaes.

I had tried to reach him by mail, but he failed to respond. In truth, I was a little put out. When I arrived in Germany, I discovered the reason for his silence: many history-related Porsche projects were on the go. Ghislaine was under such pressure from everybody involved, he could only deal with people who came to his office in person and sat at his desk outlining their demands. Reassuringly, when I caught a moment of his time, he told me he'd like to help my research, but I'd need to return the following Monday. As inconvenient as this was, the imposition was balanced by the fact he could afford me the entire day.

Monday arrived and Ghislaine took me to the Porsche archive, which at that point in time was in another building on Schwieberdinger Strasse, heading south into Stuttgart. This was my first sight of the famous

Zehnjahreberichte (Porsche's Ten-Year Reports), a succession of red-bound volumes. The first volume was compiled around 1942 and was indeed a review of the first ten years of the Porsche design office. For each project, representative texts, photographs and key drawings were included.

Misinterpreting Ghislaine's role, I asked questions about more recent developments at Porsche. "Not my responsibility!" he barked. "I'm only concerned with events before Professor Porsche's death in 1951." Suitably chastened, I spent time going through his photo files. If there were extra prints, he allowed me to take one. If not, I was permitted to make a copy.

Time in Ghislaine's company turned out to be of tremendous importance to my research, resolving a number of open issues. My timing was good because he retired from Porsche

IN 1903, FERDINAND PORSCHE MARRIED GHISLAINE'S AUNT, ALOISIA 'LOUISE' KAES, WHOSE FATHER WAS A MASTER TAILOR

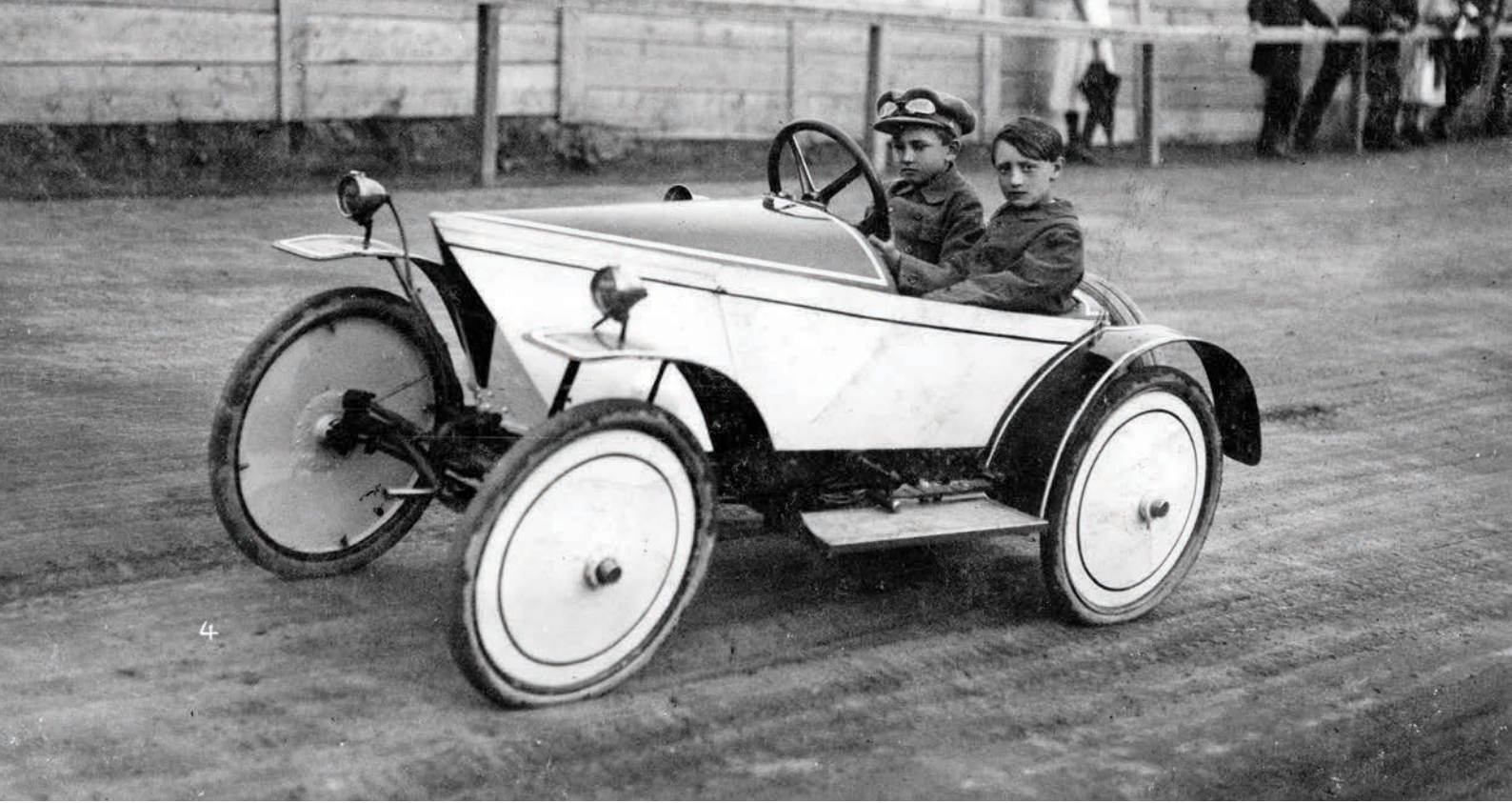
in 1975 at the age of sixty-five. His memorial includes not only my book, but also Chris Barber's masterwork documenting the creation of the Volkswagen Beetle. Ghislaine urged Barber to complete his research and writing in order to create a book which would "keep the past in the present, forever binding together the names of Porsche and Volkswagen."

FLYING HIGH

I last saw Ghislaine on the evening of our day together, when he had the great courtesy to drive me to Frankfurt airport in his 911 Targa. We couldn't possibly have squeezed more out of the day. He was used to such a schedule, of course, having worked so closely for twenty-one years with a man for whom nothing was impossible.

The birth of Ghislaine — pronounced *Ge-lain* — Ernst John Kaes was registered at London's St. Pancras on July 4th 1910. His parents were Margarete Kaes, née Bösel, and Otto Franz Johann Kaes, listed on period registry records as a 'motor engineer'. He had three younger siblings: a brother, Herbert Ferdinand Georg Kaes, and two sisters, Jütta and Marolina Kaes. They lived at 25 Fitzroy Street in the heart of London.

Facing page Ghislaine Kaes working in his office in 1950, a year before the death of his uncle, Ferdinand Porsche



4

In 1903, Ferdinand Porsche had married Ghislaine's aunt (Otto's sister), Aloisia 'Louise' Kaes, whose father was a master tailor from Bohemia. Keeping business in the family, it suited Ferdinand to have his brother-in-law, Otto, representing his British interests, testing and demonstrating the Lohner-Porsche electric vehicles. Otto even raced one in Germany in 1907. That same year, Ferdinand became chief engineer at Austro Daimler.

At the Porsche villa in Austria's Wiener-Neustadt, the Kaes and Porsche families formed firm bonds. Ghislaine and Ferry Porsche played together, the latter being a year younger. The two enjoyed motoring in the tiny two-seat roadster gifted to Ferry for Christmas in 1920. "From 1920, Professor Porsche had a hunt in Hochwolkersdorf," Ghislaine recalled. "He had a lodge built, which he named 'Louise House'. On Saturdays, in the late afternoon, he used to drive up there in his three-seater. At a predestined spot in front of the hut, his forester would be waiting for him. As soon as the car came to a stop, the decorated hat in his right hand made a wide sweep and one heard the traditional greeting, 'Humble servant, Mr. General Manager!'"

MEAT OF THE MATTER

"There was sausage goulash from a huge pot," Ghislaine added, "in which there were also potatoes and into which he sprinkled plenty of salt and pepper at the dismay of my aunt. There was going to Sunday mass. There was the hunt. He had his hunting guests and employees. He too carried a shotgun, but never fired. He also went fishing, but he didn't like to wait too long. This was a man used to his orders being acted upon immediately. The fish didn't always play ball."

As we've outlined in recent issues of *Classic Porsche*, through the Great War, Ferdinand Porsche was deeply occupied with designs for military hardware and production. The Armistice brought him new challenges in a shrunken Austria, which he faced with brilliant new projects. Conflicts with the money behind Austro

Daimler, however, led to Porsche's ouster in 1922. "The last and decisive Austro Daimler meeting is said to have been very stormy," Ghislaine recalled. "Professor Porsche, who had driven thirty miles from Vienna to Wiener Neustadt, was greeted at the factory gate by the firm's commercial director, but, after seventeen years' service, my uncle was no longer allowed to enter the factory. I'd accompanied him on the trip. I was only twelve years old, but I could tell the shock he felt at being refused entry was enormous." Eventually, through gentle persuasion, Ferdinand and his nephew were allowed to view the chassis assembly plant. A part-assembled vehicle was on display. Professor Porsche explained the workings of the transmission to the little Kaes. "I didn't understand a word!"

Due to Ferdinand's departure from Daimler, Ghislaine experienced an immediate change in his surroundings. "I would no longer have breakfast with my uncle on school-free days. At 6:30am. I used to meet him on such days on the terrace of his villa at Pottendorferstrasse 26. I got

Above Ghislaine (right) and his cousin, Ferry Porsche, at the wheel of the children's car built by Austro Daimler and entered into a Gymkhana competition in Vienna, 1921. The two-seater was equipped with an air-cooled two-cylinder four-stroke engine and two-speed gearbox. It was presented as a gift to Ferry for Christmas in 1920.

Below Ghislaine front and center ahead of his one-year-younger cousin, Ferry, and Ferry's sister, Louise, atop the hood of an Austro Daimler

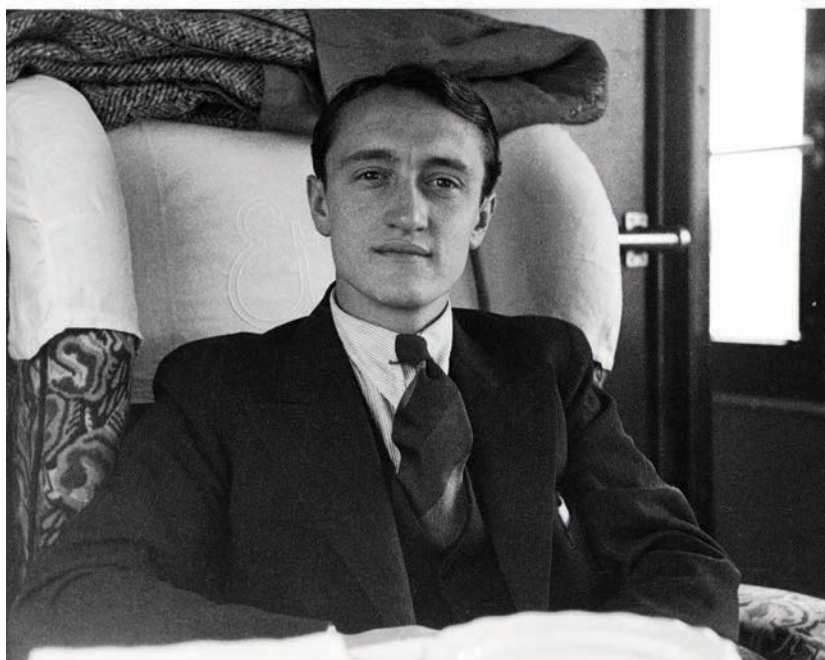




Above Ghislaine (left) and Ferry Porsche dressed for action at the Vienna Gymkhana in 1921

Right On the way from Paris to the ocean liner, Bremen, in Cherbourg, October 3rd 1936

Below Ghislaine's tutoring in typing and shorthand at Steyr by the Merciful Sisters equipped him admirably to become secretary to his uncle, a role he gleefully took on in 1930



there from Eyserspergring 3 on my bicycle. The first thing I would do was give him a morning kiss. Then, he would turn his attention to his trusty weather indicator. This was followed by an egg dish with a lot of chives, from which I always got a heaped fork that filled my mouth." Those times would be gone forever — from January 1929, Ferdinand Porsche had new responsibilities at Steyr (established in 1915 as a branch of the Österreichische Waffenfabriks-Gesellschaft weapon manufacturing company) in Austria, which welcomed its prodigal son after his five years in Stuttgart.

"My uncle got me a job at Steyr as soon as I'd passed my General Certificate of Education in England," said Kaes. "I spent eighteen months working as an apprentice, going through most departments, including the repair shop, the smithy, the foundry, the metallurgical department, the laboratory, the pattern-making shop and the chemical laboratory. I received no wages and had to pay for health insurance out of my own pocket." Thankfully, Ghislaine's living costs were minimal. "I lived

with my uncle and aunt on Jägerberg, St. Ulrich, in the villa he'd had built."

In 1930, the Wall Street Crash brought about the end of Porsche's relationship with Steyr. Having been given notice, he was told to hand back his company car. "He told me to go to the personnel manager and ask if he could keep the vehicle for another two weeks. Little did I realise this trick would keep going for the next two or three months! Meanwhile, he was looking for a job. I became his secretary. I had just finished a course in typing and shorthand from the Merciful Sisters in Steyr and I was also fluent in English, German and French, meaning I was well equipped to handle all of my uncle's correspondence."

HELPING HAND

In the summer of 1930, Ferdinand decided to set up a company of his own. Money was required to get the business up and running, but money is precisely what Porsche lacked. "He went to see Adolf Rosenberger, a racer who had been driving for Mercedes when my uncle was working for Daimler-Benz in the mid-1920s," Ghislaine confirmed. "Rosenberger was a successful Jewish businessman who lived in Pforzheim, about twenty miles outside Stuttgart. He agreed to back the new Porsche design studio, but wanted us to move to Pforzheim and open an office there. My uncle insisted on being in Stuttgart. Not only was it in the centre of the German motor industry, he owned a house there. He had to wait for Hans Nibel to move out, mind."

Having found an office at 24 Kronenstrasse, Ferdinand now needed technicians to work in it. The first person he approached was his former chief designer, Karl Rabe, who had taken Porsche's place as chief engineer at Steyr. "While we were setting up the new company, Rabe was still with Steyr, so it was my job to drive from the house in which my uncle was living, which still belonged to Steyr, in Professor Porsche's car, which also still belonged to Steyr, to the home of Herr Rabe, who was employed by





Above Ghislaine (right) with Ferdinand Porsche (second right) at the thirty-seventh Paris Motor Show in 1950

Steyr, and then return to the Porsche residence, where the two men would talk until the early hours. Later, I would have to drive Herr Rabe home — without lights — then head back, get in bed and try and catch some sleep, before rising at five o'clock in the morning to be at work in the Steyr factory less than two hours later."

Soon, Ghislaine left Steyr and became his uncle's official secretary and archivist. "Everything to do with Professor Porsche came across my desk," he recalled. "One of my jobs was to read all his correspondence and mark the important lines or paragraphs. He wasn't interested in reading anything else. I did a good many other jobs, too. For example, I was in charge of the parts list and the copying machine, plus I had to go to the bank each week to get employee wages."

In the early days of the Porsche design studio, money often wasn't available to hand out. "We had very little work. For long period, I had no salary. I lived with my uncle and aunt, so board and food was free, but I had no wages. Around this time, I had a girlfriend, Johnnie. Although she was well-to-do, I wanted to be able to take her out at my own expense. One day, I asked Herr Rosenberger for five deutschmarks. He asked what I wanted it for, explaining the company had no money. I told him I wanted to take my girlfriend out. We talked for

a while and he eventually gave me the cash, insisting it was kept a secret. He didn't want anyone to find out." Johnnie (real name Joanna) became Mrs Kaes in 1935.

"It was even more difficult for the others at the company," Ghislaine remembered. "Some were often in trouble, having no money to pay rent. I remember Frau Rabe having a real go at Herr Rosenberger. She got some

money too, but then her voice shook the whole building! Sometimes, when the money ran out completely, Herr Rosenberger would give me the keys to his car — a Porsche-

IN THE EARLY DAYS OF THE PORSCHE DESIGN STUDIO, MONEY OFTEN WASN'T AVAILABLE TO HAND OUT

designed six-cylinder supercharged Mercedes Cabriolet — and tell me to go to a certain address in Pforzheim and collect ten thousand deutschmarks he'd arranged to withdraw from his other business interests in order to keep the Porsche company afloat. This was a lot of money back then."

Once Adolf Hitler had made the decision to press ahead with the Volkswagen, the Porsche design studio was never again short of money, but a new problem arose — cash might have been rolling in, but the tight schedule for delivering the car meant the Professor's team was short on time. "Herr Rabe was a genius in his way, but very poor on details," Ghislaine revealed. "For example, he would fail to sign and date his drawings, a necessary practice when submitting them to the patent



Above The Porsche engineering and development office, located on Kronenstraße, Stuttgart

Right Sample snaps depicting Ghislaine and the Stuttgart ceremony of his marriage to Johanna 'Johnnie' Sandreczki on 7th October 1935

Below With Ferdinand Porsche's hand on the tiller, an outing on the Wörthersee (the family's summer site in Austria) included Ghislaine and two Porsche colleagues



office. This obviously caused unnecessary delays." How well did Rabe and Porsche work as a team? "The two would spend time discussing an idea," Ghislaine said, "then my uncle would depart for a number of hours. Herr Rabe was not to be disturbed. Later, the two would reconvene and discuss Rabe's thinking, perhaps making a few changes during the course of discussion. Then, when a first design draft was ready, it would be copied and passed on to transmission expert, Karl Fröhlich, engine specialist, Josef Kales, or steering and suspension specialist, Josef Zahradnik. Every day, from morning to lunchtime, Porsche and Rabe would move from one engineer's drawing board to the next, making suggestions for further development, overseeing the project as a whole."

"I also had the very important job," Ghislaine continued, "of sending the complete detail drawings and parts list of new designs to a customer. The parcel had to be handed in to the post office before midnight."

The final drawings wouldn't usually be finished until six o'clock in the evening. Professor Porsche would direct operations, Herr Rabe would be cutting the drawings and I would type out all their numbers. By ten o'clock, my uncle would tell Rabe to leave everything to me. Along with Franz Sieberer, one of the first employees at the Porsche design office, I would work the copying machine and complete the job. We would then take the parcel to the post office, just in the nick of time. The following day, Herr Rosenberger would ask me for the receipt. He would then telephone the company to which the drawings had been sent and ask for payment."

SPECIAL BREW

Professor Porsche split his time between the design studio, which he occupied each morning, and the workshops, where he based himself in the afternoons. Later in the 1930s, he was known to wander from the design department into Ghislaine's office, where, in a scenario which became a regular occurrence, he stood silent, hands interlocked. "He'd casually tell me he felt 'special'." Ghislaine knew what he wanted. "I'd get the key to the office drinks cabinet, at which point he'd make sure I knew he hadn't said or requested anything, but that, maybe, it wasn't at all bad if he had a tippie. I would reach for a small Kirschwasser glass. I remember him whistling and telling me to fill a large tumbler instead. With a jerky motion, he drank the entire contents in one go. He then stood completely still, like a monument, before heading back to work, completely shaken!"

Such was Ferdinand Porsche's confidence in his nephew, he was the Professor's sole companion when visiting America in 1936, a trip to discover how automobiles were manufactured Stateside. As a cover, Ferdinand said he was attending the Roosevelt Cup Race on Long Island, where Auto Union might want to compete the following year. During practice at the track, he saw a man wearing a distinctive armband and told Ghislaine to find out what it was. "It was being worn by





the racetrack's owner. At a press conference several miles away, I finally caught up with the guy. Sitting there, at a long table I had to pass, were sixty reporters. The racetrack owner interrupted his interviewers and granted me an audience. I told him about a respected German designer named Ferdinand Porsche, who wanted to know where to get an identical armband. 'I like you,' he said, laughing out loud along with the others listening in, before handing me the armband and telling me to give it to my uncle." When Ferdinand was presented with the armband, he ungratefully asked Ghislaine what he was supposed to do with it. "I joked people would now confuse him with the circuit owner and that he could have fun stopping races before running away!" Professor Porsche wasn't amused.

"He was like that. Never satisfied. He took hard-won achievements for granted. His highest praise was when he said nothing about a result. That was rare enough. For him, there was nothing that couldn't be done better. During my twenty-one years serving at his side, he gave only one hint of praise." The words he sent Ghislaine's way? "This I know, that you can carry a matter through." By 'through', he meant to the end — if we know anything about Ferdinand Porsche, it is that he hated nothing more than half-measures.

FERDINAND PORSCHE WAS TREMENDOUSLY INTERESTED IN THE ENGINEERING OF THIS GREAT SHIP

Another test of Ghislaine's resourcefulness arose on the return trip to Germany. Ferdinand discovered that the Cunard-White Star Line's brand-new Queen Mary ocean liner would be sailing two days earlier than the North-German Lloyd's Bremen, on which uncle and nephew were already booked with the use of German currency. "I want to cross on the Queen Mary," said Porsche.

"Please see that I get a cabin."

Ghislaine soon found no conversion of the Bremen fare was possible owing to Germany's strict currency regulations.

Consequently, he threw himself on the mercy of the Cunard-White Star office. To a baffled official, he how the famous engineer, Ferdinand Porsche, was tremendously interested in the engineering of this great ship, but for various reasons, had no access to the foreign currency that would be needed to book a crossing. His interlocutor then left to discuss the case with a higher authority, leaving Ghislaine musing on his career prospects.

"No sooner had these thoughts passed Ghislaine's mind," wrote Richard von Frankenberg, "than the British official returned and asked which cabin Professor Porsche would like to stay in! By this time, Ghislaine was master of the situation, replying with a request for the best room available. Thus, it came about that Ferdinand Porsche, not a penny in his pocket, travelled on the

Above In the post-Professor years, Ghislaine was the primary point of contact for information about the Porsche company's history. His aim was to keep alive the Professor's achievements by ensuring all Auto Union, Volkswagen and Porsche projects were documented, resulting in the birth of the huge archive held at the Porsche Museum in Stuttgart



Above In January 1960, Helmuth Bott (left), Ghislaine Kaes (middle) and Ferry Porsche, along with company financial chief, Hans Kern, led the search for land which would be acquired for building the Weissach development and test centre

Right During an inspection of a restored Austro Daimler fire engine, Ghislaine pointed out discrepancies to a technician and costumed fireman

Below A meeting of the 'old guard' in December 1971 included Wilhelm Hild (left), Ghislaine Kaes (centre) and Elfriede Fuhrmann, wife of Ernst, who had recently returned to Porsche as Technical Director



Queen Mary in a luxury suite that had, in fact, been used by the real Queen Mary during the first crossing of the ship. On top of this, the ship's operators gave him a few pounds spending money."

The drama had yet another act. Permission had to be obtained to view the engine room. This, Ghislaine learned, was off limits to foreigners — he was told access could only be obtained in special circumstances by writing a letter in advance. Ghislaine suggested that, perhaps, in this case, in the absence of a letter, the ship's radio could be put to use for Ferdinand to request permission orally. Duly done, he was permitted to view the engine room, thus completely satisfying his curiosity about the entrails of the Queen Mary.

As is well known, Ferdinand Porsche served his masters to the best of his ability in both World Wars. When still in his twenties, he was a reservist in the Imperial and Royal Deutschmeister Regiment of the Austria-Hungary armed forces, but he never melded with the military, however much they later honoured him. One day, when he stepped into a barrack courtyard, an officer ordered him into a pool of water. "Down! Up! Down! Up!" was the instruction, until Porsche was completely

soaked and utterly filthy. "Now clean and report back as quickly as possible". Ghislaine learned this 'exercise' was repeated several times. "I suspect this experience shaped his attitude towards the military. He remained insecure. He never knew the ranks. When he received a military officer in his office, he often came to me to inquire about rank. When the German government tried to force him into a uniform in 1944, he silently refused almost to the risk of imprisonment. Successfully so, too. In fact, he left the fabric delivered for his uniforms to my aunt, Louise, who had it dyed and processed into skiing outfits for the grandchildren."

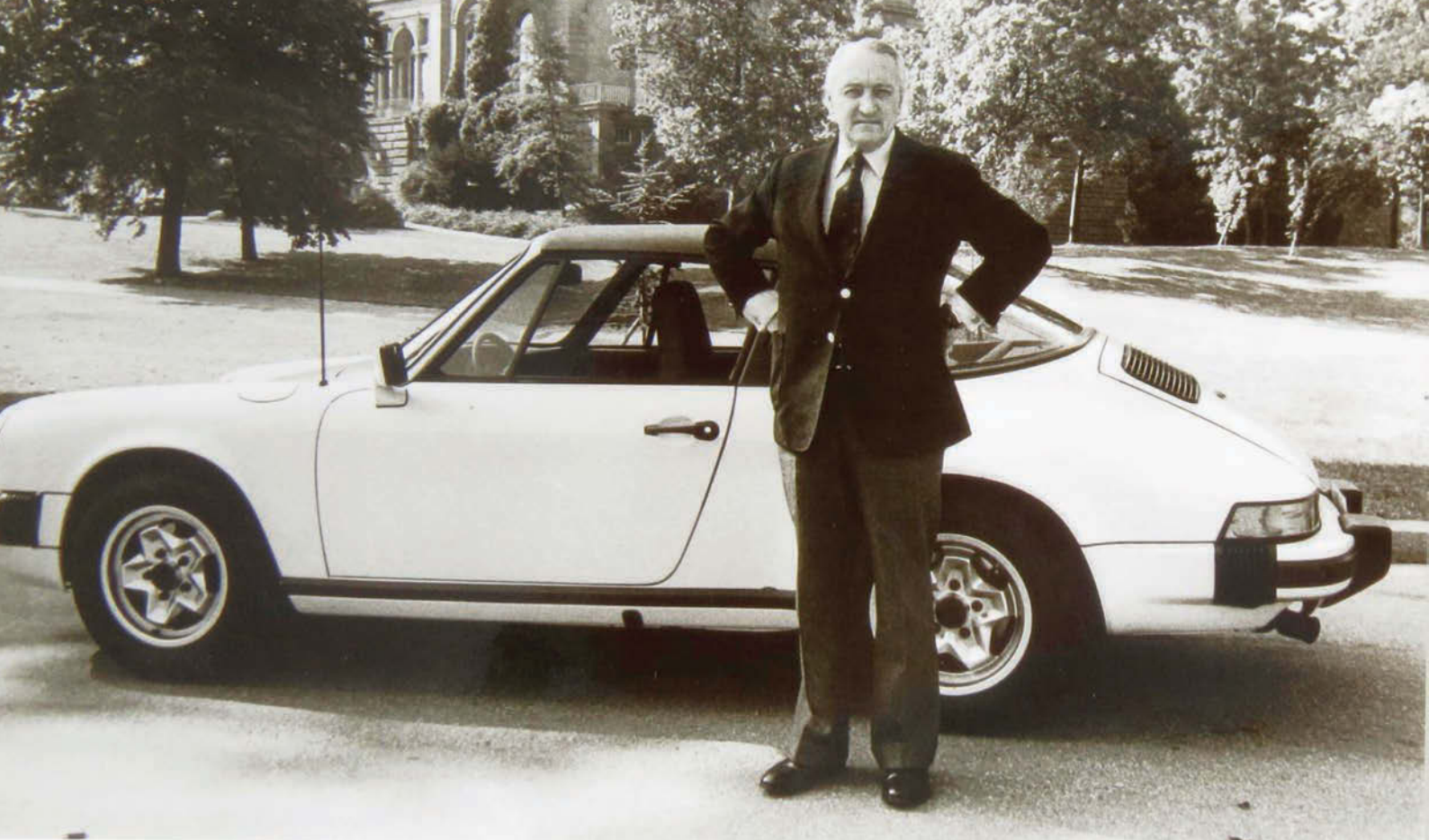
BULLDOG SPIRIT

Ghislaine was under pressure from the Nazis, too — they wanted me to adopt German nationality. "I am a British subject," he would say, "and have retained my nationality all my life, in spite of Hitler!"

After the second World War, Ferdinand and Ferry Porsche were fêted by the French occupiers of Stuttgart, who had their eyes on Volkswagen. After dinner on December 15th 1945, however, both men were arrested by plain-clothes officers of the Surêté. Porsche father and son were jailed in Baden-Baden. Ghislaine visited the prison on January 30th 1946. With a daily bribe of twenty marks to the German guards, he was able to bring baskets to Ferdinand Porsche and take them away again. On the way into the jail, the basket contained food and information relating to ongoing Porsche engineering projects, while on the way out, it carried Ferdinand's instructions to the design team. These orders were reinforced by a document confirming Ghislaine's rights and duties as his uncle's official amanuensis.

In this capacity, Ghislaine contacted the French authorities and told them the Professor was suffering from a progressive loss of eyesight. They promptly transferred him to a hospital in Baden-Baden, a more comfortable situation allowing Ghislaine to base himself in his uncle's sickroom.





Above The mature Kaes pictured with his 911 Targa in 1975, the year of his retirement from Porsche. This was the author's transport to Frankfurt airport in 1974.

Although Ferry was freed early in 1946 (following nineteen months' detention near Paris), Ferdinand didn't make it back to Austria until August 4th 1947. "I soon had to explain exactly what I had been doing since our last meeting and, in fact, I had to remind him of all my activities since 1944. In Gmünd, when he saw what had been created in his absence, however, he told me not a screw he would have done differently. Ferry and the men around us couldn't have been happier."

On November 20th 1950, Ferdinand suffered a stroke.

"It was his second,"

Ghislaine told me.

"The first, in June 1948, had been much lighter. This one was bad. From his sick bed, he tried to draw attention to his body in terms of

an automobile — he envisioned repairing troubled organs with spare parts. I remember his doctor, Primarius Zollner from Klagenfurt, telling him the medicine world wasn't so far advanced. With the end near, grandchildren came to his bedside. Butzi, Gerd, Peter and Wolfi brought lilies of the valley. Then, on January 30th 1951, at 1:48pm, the engine stopped. Forever. Louise, Ferry, Dodo [the nickname for Ferry's wife, Dorothea] and myself, plus three merciful sisters from Marienhospital, were there with him at the end."

At Porsche's interment in Zell am See, added Ghislaine, "his faithful Rabe, deeply shaken at the grave," found these words spoken in the name of all Porsche employees: "We thank you from our pain-filled hearts for all that you have given us. The Almighty lets you rest in the midst of this wonderful mountain world and in the earth of our beloved fatherland, Austria."

An echo of the 1936 trip came in December 1951, when Ghislaine accompanied Ferry on a trek to the USA. They flew, taking a Pan Am Boeing 377 Stratocruiser. Ghislaine logged the final leg at five hours and eighteen minutes from their stop at Gander to New York, flying at 18,000 feet. They spent ten days in and around New York, hosted by Austrian-born European sports car importer, Max Hoffman, who lost no opportunity to press the need he perceived for various ameliorations in the 356, all scrupulously noted by Ghislaine and resulting in

the development of the 356 Speedster.

When I looked through his notebooks, now in the collection of comedian and Porsche enthusiast, Jerry Seinfeld, two

IT WAS EASY TO DISCERN WHAT MY FATHER'S SECOND WIFE, NO SHRINKING VIOLET, WAS INTERESTED IN

entries on October 14th 1953 jumped out at me. One was in reference to Schloss Johannesberg, a domaine in Wiesbaden which began making wine in 817 and, since 1720, has produced only Riesling. It was a reminder in relation to a request from a Mr. Ludvigsen. My father was friendly with Leopold Prinzing, Porsche's business manager, with whom he had negotiated a license to develop Porsche synchromesh in America. They had enjoyed this justly fabled wine at dinner and, apparently, my dad was looking for more. The other reference was to Meissen China (the highest quality porcelain) for a Mrs Ludvigsen, written in one of Ghislaine's boldest notations. It was easy to discern what my father's second wife, no shrinking violet, was interested in. I was away at prep school and didn't see the consequences of these notes, but knowing Ghislaine Kaes as I do now, I'm sure he was able to "carry a matter through." **CP**

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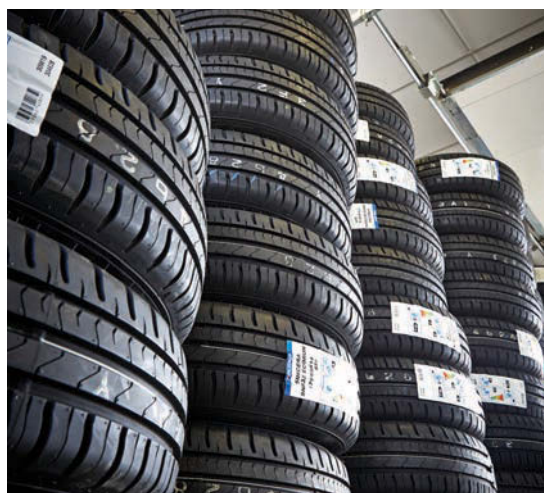
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RUBBER SOUL

Without tyres, your Porsche is useless. Here's what you should be considering in advance of buying your car's next set of black circles...

Never underestimate the importance of good quality tyres. The rubber you choose will affect the acceleration, braking and cornering abilities of your Porsche. You need to buy wisely, especially if modifying – there's little point in trying to maximise power output, improve handling or beefing-up brakes if the black circles you've fitted undermine the time, energy and money you've invested in enhancing other areas of your pride and joy.

Tyres are the only part of your Porsche in direct contact with the road. Give serious thought to driver and passenger safety, as well as the kind of driving style, environment and road conditions you expect the car to be subjected to. Select appropriate tyres accordingly.



Below Two-time World Rally Championship winner, Walter Röhrl, with Porsche tyre tester, Dieter Röscheisen, and four different tyre models for older and newer Porsche models



COMPOUNDS

The rubber compounds used in the construction of a tyre will differ dramatically between tyre makes and models. Manufacturers invest huge sums of money developing bespoke compounds in order to meet specific criteria, keeping the 'recipe' for each compound a closely guarded secret!

There are thousands of different tyre compounds in production at any one time, and a vast number of different ingredients – some natural, some synthetic – are used to produce whatever attributes a particular tyre might require. Some of these elements are designed to keep air within the tyre, some are introduced to allow sidewalls to flex. Others help bind the incorporated nylon and steel belts together. The compound most people refer to is the part of the tyre that is in direct contact with the road. This tread compound includes complicated polymers and, occasionally, trace levels of silica. These materials provide a tyre with resistance to abrasion, tears or cuts, and they prevent the tyre from losing its structural integrity. It is, however, the mix of natural and synthetic rubbers, carbons and oils that has the biggest impact on a tyre's lifespan. The greater the rubber content, the more grip a tyre will offer, but this comes at the expense of longevity – soft, grippy tyres wear faster than hard compounds containing more carbons.

When you hear manufacturers refer to the hardness and softness of the tyres they produce, they're not talking about



Below Porsche's official recommended tyre approval catalogue features 2,200 tyres, a mix of summer and winter-use rubber



how hard the tyre is to touch. No, these terms are in direct reference to how rubber molecules interact with the road. The rubber used goes through a process known as 'vulcanising'. This converts rubbers and polymers into a more durable material by adding additional elements, such as sulphur, which create crosslinks between the polymer chains and rubber molecules, having the effect of making the material less sticky, but more durable.

One of the main differences between harder and softer compounds is how the addition of sulphur affects rubber molecules. In a soft compound (a greater percentage of rubber) the crosslinks caused by the vulcanisation process are fewer in number. This means rubber molecules and polymer chains are longer between crosslinks than a harder compound. The longer the rubber molecules are, the more they can interact with the road surface, resulting in more grip. Rubber molecules in a harder tyre compound are more restricted, delivering less grip.

As already mentioned, a soft tyre will wear faster than a hard tyre. It's the movement of the rubber molecules and the friction they generate which provides the grip we crave, but it is also this same friction that causes the tyre to wear. In other words, you need to choose a compromise between the level of grip you want to experience and the amount of time you're prepared to wait before treating your Porsche to another set of tyres.

HOW ARE TYRES MANUFACTURED?

Almost all radial road tyres are constructed the same way, the only major differences being the compounds used and the final tread pattern design. The process of building a tyre starts with steel beads. These are encapsulated in rubber and form the tyre bead as we know it, providing the starting point for the rest of the tyre to be built upon. Next comes the liner (a non-porous, nylon-reinforced rubber used to form the basic shape of the tyre). This creates an airtight seal between the steel beads, enabling the tyre to be inflated.

Tyre body plies (more parts made from nylon-reinforced rubber) are added on top of the liner. The number of plies applied depends on intended application, but a typical road tyre will feature two or three plies. Steel reinforced sheets of rubber known as 'belts' are then added in order to provide the tyre with strength and durability. The quantity and type of steel belts used will help to determine the finished tyre's load and speed ratings. Like plies, the number of belts used will depend on the tyre's intended use, but you will find two or three in most road tyres.

This blend of plies and steel belts is finished with a final layer of nylon-

reinforced rubber before the tread cap is applied. The compounds of the rubber used in the tread cap will alter between road and race applications.

At this stage of construction, the tyre is still 'green', meaning the layers of soft, sticky, pliable rubber need to be cured. This process involves applying heat and pressure, a process which causes the layers to bind together, creating what is essentially a hardened rubber laminate capable of delivering the desired characteristics. The curing press used at this stage also indents the tread pattern design into the outer tread cap layer, as well as producing the required tyre markings and sidewall information.



TREAD PATTERN DESIGNS

In addition to compounds used during construction, a tyre's tread pattern is a unique feature driven by ever-evolving research and development programmes carried out by manufacturers keen to combine function and form through appealing design. The different tread pattern designs available for road tyres can be split into three main categories: symmetrical, asymmetrical and directional.



SYMMETRICAL

A symmetrical tread pattern features the same grooves and blocks across the whole of the tyre's contact surface (the inner and outer halves of the tread pattern are symmetrical), meaning the tyre can be fitted to any of your Porsche's four wheels.

ASYMMETRICAL

An asymmetrical tread pattern is a design changing as it spreads across the width of the tyre's contact surface, meaning the tyre has an inside and an outside edge that needs to be observed before fitting. The outer edge and shoulder area of an asymmetrical design usually features, large, stiff tread blocks to help absorb high loads and maintain stability during cornering. Asymmetrical tread patterns also tend to have an inner edge comprising tightly-packed grooves. These help to disperse water and provide enhanced grip in wet conditions. Asymmetrical designs usually feature a wide, continuous centre rib which encourages stability for straight-line speed.



DIRECTIONAL

Directional tread patterns differ from symmetrical and asymmetrical designs insofar as they are symmetrical across the width of the tyre. In other words, they have no specific inside or outside edge, yet feature a design which only works in one direction of rotation. Directional tyres are designed to be fitted to a pair of wheels. They must be reversed for fitting to the opposite side of your car.

Directional tyres offer advantages over asymmetrical patterns. The primary benefit is wet weather

performance – the high number and aggressive nature of grooves typically used on a directional pattern equates to greater water dispersion than any asymmetrical design. These deep directional grooves extract water from the centre of the tyre tread and throw it from the sides, resulting in impressive wet grip. In the dry, the same aggressive grooves have no water to disperse, but their larger tread blocks offer a greater contact patch with the road than symmetrical

tyres, thereby offering increased grip and vastly reduced road noise.

Interestingly, it's possible to combine both asymmetrical and directional tread patterns in a design featuring both an inner and outer edge as well as a direction of rotation. In short, directional tread patterns usually feature stiffer blocks on the outer edge (similar to those of an asymmetrical tyre), but the pattern tends to incorporate aggressive grooves in keeping with the design of a directional tyre.



TYRE LABELLING

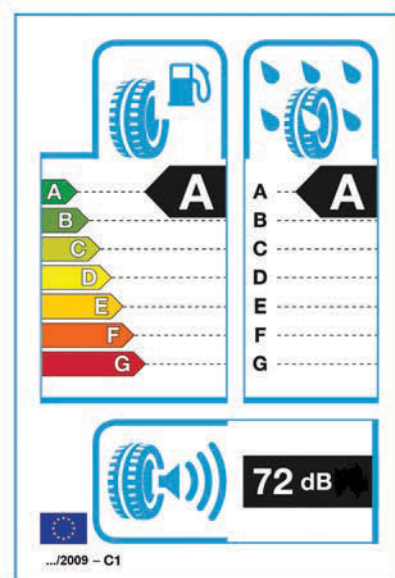
Since late 2012, all new tyres have to conform to an EU-approved labelling system. This information is displayed using the same easy-to-understand standardised system found stuck to white goods. Tyres are graded on wet weather performance, fuel efficiency and road noise, making it easy to compare tyres on a like-for-like basis. Grades range from A to G (without D being used), with A being the best performer and G being the worst. There are, however, key considerations you should be aware of:

FUEL EFFICIENCY

'Fuel efficiency' sounds attractive to most motorists and forms part of the EU's drive towards lowering vehicle emissions, but what a tyre is actually tested for here is its rolling resistance (the amount of energy it takes to keep the tyre rolling). Yes, a higher rolling resistance will cause the car to burn more fuel, but that's not necessarily a bad thing in terms of performance – it may mean your tyre boasts superior levels of grip.

WET WEATHER

The wet weather label is important for Porsche owners who want to know a tyre's expected performance in – you guessed it – wet and slippery conditions. The test involves driving a car along a wet road at 50mph and measuring braking distance to a complete stop. The difference between each rating is around three metres, meaning there's a huge eighteen-metre difference between A-grade and G-grade tyres.



NOISE LEVELS

Tyre manufacturers are keen to keep noise pollution to a minimum. The label shows noise measured in decibels. There's also an accompanying 'sound bar'. One black bar indicates the tyre meets current legislation, two black bars prove the tyre meets required noise restrictions, three black bars tells you that the tyre is at least three decibels below the expected future legal limit.



Above Centre cap pictured upside down and its southern tip not facing the tyre valve? The *Classic Porsche* inbox will be filled with complaints!

SHOULDER BLOCKS

While we're on the subject of tread pattern designs, it's also worth us taking a look at the shoulder block area of a tyre. This is the region between the tread pattern and the sidewall taking the brunt of the car's lateral forces during cornering. As a consequence of this punishing treatment, shoulder blocks tend to be fairly chunky in their design, maximising the contact patch with the road to promote grip while the tyre moves around under heavy cornering forces.

The grooves between the shoulder blocks are known as 'sipes'. Their



job is to help keep tyre temperatures low. They also help to disperse water in wet driving conditions.

Sipes are deliberately spaced to ensure shoulder blocks are not uniformly sized. Instead, the size of the shoulder blocks differs all the way around the circumference of the tyre. This has the effect of altering harmonics and reducing road noise.

It's worth noting, if the tyre's shoulder blocks were all the same size, the tyre would produce an irritating humming sound when your Porsche was travelling at a steady speed.



Above Among Porsche's N-rated tyre range is a variety of winter tyres designed specifically for the manufacturer's classic and modern-classic sports cars

WINTER TYRES

In recent years, winter tyres have increased in popularity, not least because some countries in mainland Europe force drivers to make use of them during the cold season. As the name suggests, the compounds and tread patterns used in the construction of winter tyres makes them more suited to cold, slippery, and icy driving conditions.

The adopted rubber compounds tend to include increased amounts of silica designed to help the tyre remain flexible in lower

temperatures. Additionally, winter tyre tread patterns tend to feature deep grooves, which help to clear snow, ice, slush, and water with increased efficiency.

Winter tyres are easily identifiable thanks to their 'snowflake' or 'snowy mountain peak' marking found on sidewalls. While these tyres will generally outperform summer tyres in temperatures below 7°C, they don't work as effectively in warmer temperatures. In the UK, there is no legal requirement to use winter

tyres, but many experts think there may be a change in legislation due to increasingly extreme winter temperatures caused by climate change.

An alternative to buying two sets of tyres (one for winter, one for summer) is the purchase of 'all season' tyres. These feature a higher silica content than traditional summer tyres, a change that keeps rubber flexible in cold conditions while enabling continued use in the warm.



N-RATED TYRES

All tyres from official Porsche Centres are part of the Porsche custom tyre range, which has been carefully created by Porsche over many years in close collaboration with leading tyre manufacturers, including Michelin, Falken, Pirelli and Goodyear. Porsche works with tyre brands to jointly develop the ideal tyre type for each model to meet its special performance requirements. The fact the tyres have been thoroughly tested and approved by Porsche is indicated by their N-marking (the letter stands for Nürburgring, where the tyres are tested). Following the letter N, a second letter indicates the model line (A, for example, denotes the 992-generation 911).

Porsche claims its N-marked tyres differ from other tyres in terms of geometry, rubber composition and testing methods. As far as the latter is concerned, three main areas are covered:

- ① Subjective outdoor criteria, such as handling and driving comfort
- ② Objective outdoor criteria, such as braking performance and service life
- ③ Indoor criteria, such as rolling resistance and high-speed performance

During development of N-rated tyres, geometry and rubber composition in particular are tailored to Porsche vehicles, but don't think you have to invest in N-rated tyres to get the best of your Porsche. Consider this: many of the N-rated tyres currently available for new Porsches are launched in sizes also catering for legacy models, but because these cars are no longer in production, the tyre suiting them isn't afforded an N-rating, despite being exactly the same in terms of compound, materials and overall design. If in doubt about which rubber to buy, ask advice from owners club members who can share real-world experience.



HEALTH CHECK

You should take great care to avoid premature tyre failure. Ensure optimum performance at all times:

TREAD WEAR

Abnormal tread wear is one of the most common causes of tyre failure. This condition is usually generated by incorrect suspension geometry (common on cars with altered ride height) or poorly operating brakes. Overinflated tyres will also encourage rapid wear.

SIDEWALL DAMAGE

Tears, cuts, bubbles, and other compromises to the structural integrity of the sidewall area are dangerous. If spotted, replace the tyre immediately. Typical causes of cuts and tears are hazards in the road,

while bubbles and scrapes to the sidewall can be caused by impact damage from potholes and kerbs.

TYRE SEPARATION

Separation of the tyre construction is uncommon and can be difficult to spot. Bulges in the sidewall, tread face or shoulder of the tyre are the usual indicators. Typical causes include excessive heat build-up as a result of under-inflation or over-inflation, as well as water entering the tyre carcass from an existing cut or tear.

BEAD DAMAGE

Another unusual complaint, but one to be aware of. Bead damage is usually caused by poor fitting, particularly if an asymmetrical or directional tyre has been applied to the wrong wheel. The metal bead can bend or break leading to sidewall damage.

UNDERSTANDING TYRE SIDEWALL MARKINGS

You probably know how to measure tyre tread depth, but did you know the markings stamped on a tyre's sidewall contain information detailing everything from the date of construction to the maximum safe speed and load rating? Here's how to read the information.

- 1 **BRAND NAME** Name and corporate branding of the tyre manufacturer.
- 2 **225** Width (in mm) of tyre
- 3 **45** Height of sidewall as a percentage of width, in this case forty-five percent of 225mm.
- 4 **R** R denotes tyre is radial.
- 5 **17** Rim diameter (in inches).
- 6 **94** Load index. Ranges from 50 to 150 and refers to the maximum load rating of the tyre. 94 indicates a maximum load index of 670kg.
- 7 **W** Speed index. This letter ranges from N to Y and refers to the maximum speed rating of the tyre. W indicates 168mph.
- 8 **AS-2+** Tyre product name.
- 9 **E4** 01234 ECE mark proving tyre meets Economic Commission for Europe safety standards. The E4 designation in the circle indicates testing was carried out in the Netherlands. E1 would indicate Germany. E11 is the UK's ECE code.
- 10 **ROTATION** Tyre direction.
- 11 **(4014)** Date of manufacture. The first two digits (40) highlight the week, the second two digits (14) refer to the year.
- 12 **OUTSIDE** Denotes outward facing sidewall on asymmetrical tyre to avoid incorrect fitment.





TRACKDAY TYRES

Slicks provide the best performance on smooth, dry surfaces, primarily because all of the tread area is in contact with the asphalt. This sounds great, but slicks aren't road legal. Thankfully, many manufacturers offer road-legal tyres designed to be used at the track. These tyres tend to feature a high rubber content and a tread pattern with minimal grooves, resulting in a large contact patch and superior grip at normal operating temperatures, not to mention the ability to disperse water in wet conditions. Nankang's AR-1, Yokohama's recently launched AD08RS and Toyo's Proxes R888R fall into this category.

The downsides to using road-legal track day tyres on your Porsche is an increased rate of wear and reduced wet weather performance when compared with more traditional road tyres.



**RUN-FLAT
SIDEWALLS NEED
TO BE STRONG
ENOUGH TO
SUPPORT THE
WEIGHT OF A CAR**

RUN-FLAT TYRES

Many new cars come supplied with run-flat tyres. Unsurprisingly, these do exactly as their name suggests, allowing a tyre with no air pressure to be driven for a limited period of time. This is great news if you get a puncture, but run-flats are less than popular among driving enthusiasts, primarily because this design makes use of super-stiff sidewalls (a feature strong enough to support the weight of the car after the tyre has lost its air pressure).

Rigid run-flat sidewalls can deliver a rough ride when compared to the experience of rolling on traditional performance tyres. Moreover, the reduced flex in the sidewall hampers performance (remember, it's the movement of rubber and the way it interacts with the road that gives your Porsche grip).

Run-flats are best suited to repmobiles covering mega motorway miles, unless you believe the convenience of not having to replace a wheel and/or tyre is more important than performance. To find out specifically which tyres Porsche has developed and approved for your car under its N-rating programme, contact your local Official Porsche Centre for information or visit www.bit.ly/tyrenrated. **CP**

CONTACTS

Longstone Tyres
longstonetyres.co.uk

Falken Tyres Europe
falkentyre.com

Blockley Tyre Company
blockleytyre.com

Michelin Tyres UK
michelin.co.uk

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CLEAN CLOCK

Originally owned by Jack Heuer and now residing in the state of New York, this 1973 Carrera RS 2.7 was treated to RSR components and a boost to 280bhp to make it even more competitive on the historic rally scene...

Words and photography Sean Smith







Above Frunk lid still wears spotlight mounting holes from the car's rallying days

At the close of 1967, Swiss watchmaker, Heuer, was looking for a novel new marketing tactic. The firm had ended the year with sales of CHF 8.5 million, an increase of some nineteen percent over revenues for 1966. Manufacturing costs, however, had also increased, and with the overall market situation uncertain for 1968, company boss, Jack Heuer, wanted to increase exposure of his firm's products to a wider audience.

It struck him his company's advertising budget was far too modest to make any real impact. The solution came from a totally unexpected source.

He was playing golf with Claude Blancpain, an old family friend who ran the Cardinal brewery in Fribourg. Out of the blue,

Claude suggested Jack should sponsor a young racing driver named Joseph 'Jo' Siffert, who Claude had admired and supported for some time. Siffert, who was also from Fribourg, would shoot to fame by winning the Formula One British Grand Prix in July 1968, beating established drivers, Chris Amon, Jacky Ickx and Jackie Stewart, among others.

Owing to a string of impressive drives in advance of this unexpected victory, Claude considered Jo one of the greatest talents in F1. He was also a factory driver for Porsche and campaigned the manufacturer's prototypes in endurance events, including the 24 Hours

of Le Mans, where he'd scored class wins with the 906 and 907. In early February 1968, he won the 24 Hours of Daytona, sharing 907 driving duties with Vic Elford, Hans Herrmann, Ralf Stommelen and Jochen Neerpasch.

The idea of sponsoring this rising star immediately appealed to Jack and, a few days later, he made an appointment to meet Jo in Fribourg. The pair hit it off immediately and quickly agreed contract terms. It was determined Jo would wear the Heuer logo patch on his overalls at all races and would wear a Heuer chronograph (Jack insisted it was an Autavia) on his wrist. Additionally, Jo was required to put a red Heuer

sticker on the front or the side of all the cars he raced. In return, Heuer would allow him to buy its products at wholesale prices and he would be free to resell them

HEUER AND REASONED IT WAS NO LONGER APPROPRIATE TO BE SEEN DRIVING AROUND IN SUCH A FLASHY CAR

privately to colleagues in the pits. Jack agreed to pay Jo an annual fee of CHF 25,000 for an initial contract period of two years.

In his autobiography, *The Times of My Life*, Jack admits he didn't realise it at the time, but this relatively simple sponsoring contract with Siffert was one of the best marketing moves he would ever make — it opened the door for Heuer to the world of Formula One, resulting in hugely profitable exposure the company continues to enjoy to this day. As far as Jo was concerned, there was only one sticking point. Observing Jack's choice of chariot, he asked how the sponsor of a Porsche works



Above Flat-six was rebuilt by HS Tuning & Classics and is now developing 280bhp with the aid of RSR cylinder heads

driver (who also happened to be the official Porsche representative and dealer in Fribourg), could be seen driving around in an Alfa Romeo Cabriolet. "You must switch over to Porsche," he demanded. Jack hesitated, but eventually came around to the idea of buying a 911 as a company car. In fact, he would drive the Stuttgart concern's products from 1968 until 1975, when he smashed the last of his 911s into a guard rail.

Jack describes 1975 as a "crisis year" for Heuer and reasoned it was no longer appropriate for the company's CEO to be seen driving around in such a flashy car. Consequently, he acquired a SAAB. Two years earlier, he'd bought a brand-new Carrera RS 2.7. Following time the RS spent in his hands, it remained in

Switzerland, first passing to a marque enthusiast named Christian Bleuer, who then sold the car to a modifier named Rolf Engler, who stripped the car to Lightweight specification in the mid-1980s.

RALLY THE TROOPS

The next person behind the wheel was Peter Rau, owner of Touring Garage AG in Oberweningen, who remembers accumulating a number of speeding tickets and shaming more powerful cars at the Hockenheimring race circuit. Rau's stewardship lasted ten years until a Touring Garage AG customer, Hans-Peter Fässler, was next in line. He entrusted the Porsche to Heinrich Schneebeil of HS Tuning & Classics in Klingnau with an instruction to convert the Porsche to rally specification.

During the course of an extensive six-year restoration, the RS was prepared for historic rallying, as per Hans-Peter's wishes. To make the car truly rally ready, its body was stripped back to bare metal, seam welded and parts were powdercoated. Much attention was lavished on the engine — the original 2.7-litre lump was paired with a set of RSR cylinder heads, along with an RSR distributor, a 910 ignition box and a Carrera 3.2 oil cooler and fan. The engine was now developing close to 280bhp. Adjustable twin master brake cylinders, adjustable shocks and an eighty percent locking differential were also introduced to the mix. The interior was stripped out and a full roll cage was installed, as was a fire suppression system, race seats and harnesses, map lights, radio intercom and polycarbonate windows. Hans-Peter considered the build a complete success and was delighted when the car was awarded its FIA technical passport.

Current owner, Robert Torre, got his hands on the





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Above and below Robert has made the car more comfortable for regular road use by way of street seats and a more forgiving clutch, but has left the majority of HS Tuning & Classic's alterations as he found them

Porsche in 2011. He purchased it — still in rally trim — from historic sports car importer and sales specialist, Motor Classic and Competition, based in Bedford Hills, New York. To make his new toy easier to live with as a road car, the sparse competition interior was replaced with more forgiving furniture, but everything else was left precisely as it was when HS Tuning & Classics had finished restoring the car.

After a decent amount of seat time, Robert decided to make a few changes. The addition of blue *Carrera* body script over the white body was the first notable alteration, promptly followed by colour-coded centres for

the Fuchs wheels. Less obvious was the rebuilding of the front suspension and switching out the 'on-off' racing clutch for a standard RS part. The work was carried out at Robert's own shop, R&R Restorations, in Mount Kisco,

New York. Setting off from standstill at a set of traffic lights is now much less 'dramatic'.

You know that thing about never wanting to meet your heroes because

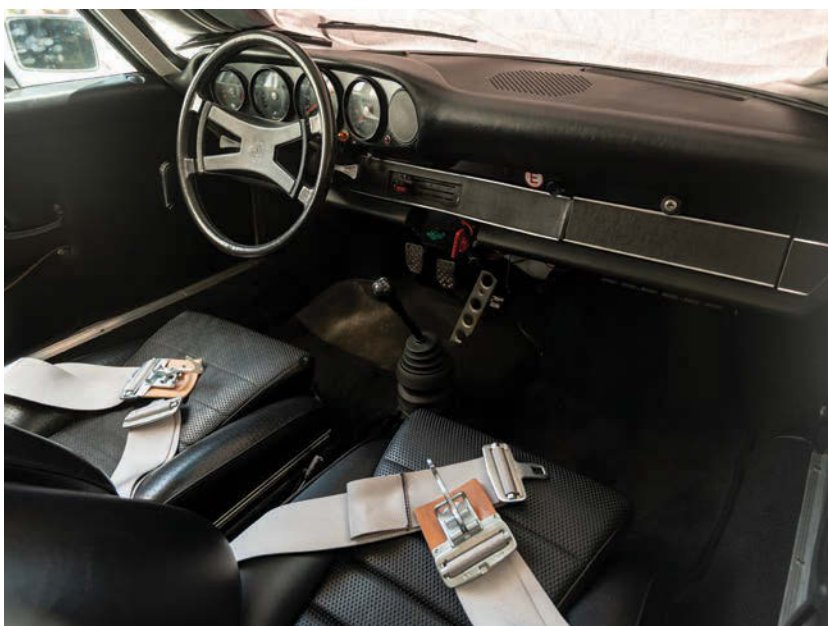
IT'S HARD TO FIND A ROAD THAT WILL CONTAIN EVERYTHING ON OFFER, BUT WHO'S COMPLAINING?

they never live up to your expectations? It really doesn't come into play here. I have been around and driven a great many different Porsches over the years, but the Carrera RS 2.7 is a unique beast. It may have the same basic look as other 911s of the time, but there's something about the RS, which radiates performance. It's familiar, but oh-so-very different.

Even when driving on the road, it's obvious the RS is still very much a competition machine. There's the ducktail, of course, but as I look at the dashboard, there's also a more ambitious tachometer displaying a redline at 8,000rpm, topping out at 10,000rpm instead of the standard 7,500rpm topping out at eight grand. This is no casual go-get-the-groceries, ride-around-town sports coupe. You have to commit yourself to grabbing this machine by the neck and taking it for a drive. That said, it'll get you to the shops in record time, if need be!

BRING THE NOISE

You fire up the engine and the tingling in your guts is immediate. It's the sound and feeling of pure Porsche power. The distilled essence of the company's period motorsport programme and the very best of its classic road cars is wrapped up in this amazing 911 package. The steering is light and balanced — the RS doesn't wander, instead tracking laser straight. And because of





all the seam welds applied by HS Tuning & Classics, the feeling is of being in charge of a distinctly solid 911.

Due to being brought up to Lightweight specification and with addition of the RSR twin-plug heads, this car

isn't just fast, it's warp-speed-Steve-McQueen levels of fast. It's hard to find a road that will contain everything on offer, but who's complaining? When you get the chance

to open this thing up, it just kicks you in the backside and slingshots you up the road, screaming a siren song in your ears you'll want to experience over and over again. No computers, no stability control, no ABS? No problem. Just pure unadulterated classic Porsche.

KILLER INSTINCT

Even in standard trim, you have to show the Carrera RS 2.7 the respect it deserves and requires, but at the same time, this isn't a car to be scared of. You just have to come to an agreement along the lines of *I won't kill you if you won't kill me*. Keep your foot into a turn and you'll both come out the other side happy. And then it's a run up a straight at the speed of light before it's time to do the same again. And again. You'll want to keep going until your face goes numb from all the smiling.

Not much comes close to time behind the wheel of a machine like this. It takes you back to another time,

but you're right in the moment with every creeping rev.

To get close to the same sensation in a newer car, I have to climb into Robert's 2007 997 GT3 RS. I have also had the privilege of seat time in a 1995 993 Carrera

RS. Both of these cars are amazing examples of Porsche's wizardry. They're wonderfully fast, elemental and highly capable, of course, but to my mind, neither has

the same attitude as the genesis RS. This thing has aggression in spades.

There is purity to its nastiness. It brings out the hooligan in you. It makes you laugh maniacally as you push your right foot down to the floor and watch the needle on the rev counter climb ever higher. *That*, friends, is the Carrera RS influence.

Robert was nearly talked out of buying the car. Friends told him he wouldn't like it, that it wasn't for him, it would be too hardcore, too old. Dismissing their concerns, he was pleased to report he instantly fell in love with the car. You see, once a Carrera RS 2.7 gets under your skin, you're hard pressed to find the same rush anywhere else. It's extraordinary to be admitting as much, but fifty years on from the model's arrival, nothing else comes close. And, thanks to the enhancements made by HS Tuning & Classics to this particular RS, nothing else is likely to, either. I wonder what Jack Heuer would make of it all. **CP**

Above Currently celebrating its fiftieth anniversary, the RS has found favour with successive generations of Porsche enthusiasts

ONCE A CARRERA RS 2.7 GETS UNDER YOUR SKIN, YOU'RE HARD PRESSED TO FIND THE SAME RUSH ANYWHERE ELSE



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HS TUNING SWITZERLAND

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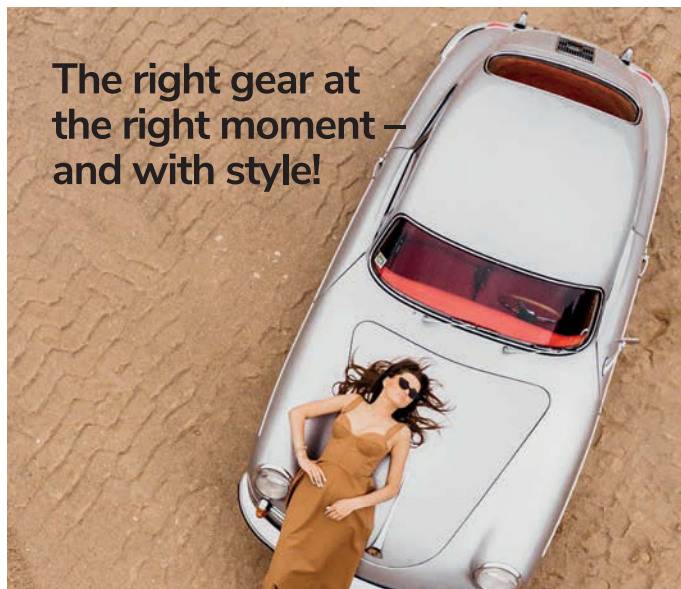
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One of the ways we ensure top-quality content in the pages of *Classic Porsche* is by keeping in touch with you, our readers. We love hearing about your personal Porsche experiences, but beyond this, we enjoy getting to find out more about your lifestyle, thereby enabling us to continue producing editorial in tune with your interests, both inside and outside the Porsche scene.

With this in mind, we've put together a short survey to help us know you better. You can fill out the form on these pages and return it to us by post, or complete online at www.surveymonkey.co.uk/r/cporsche22. Either way, we'll enter you into a prize draw to win one of three £100 John Lewis vouchers. We look forward to hearing from you.

Dan Furr
Editor

1. How many cars do you have in your household?

.....

2. Please list all the car marques you own e.g. Ford, Porsche...

.....

.....

.....

.....

3. How did you purchase your last car?

- ☐ Bought new from main dealer
- ☐ Bought used from main dealer
- ☐ Bought via traditional auction house, e.g. BCA, Manheim
- ☐ Bought via specialist auction house, e.g. Silverstone Auctions, SWVA, Historics, WB & Sons, Brightwells
- ☐ Bought via online auction, e.g. carandclassic, collecting cars, The Market etc
- ☐ Bought from an online retailer, e.g. Carwow, Cinch, Cazoo
- ☐ Bought privately
- ☐ Other (please specify)

.....

4. When was it obtained?

- ☐ Within the last 3 Months
- ☐ 4-6 Months ago
- ☐ 7-12 Months ago
- ☐ 1-2 Years ago
- ☐ 3-4 Years ago
- ☐ More than 4 Years ago
- ☐ I don't own a car

5. How much did your last car cost you?

- ☐ Up to £5,000
- ☐ Between £5,000 and £10,000
- ☐ Between £10,000 and £20,000
- ☐ Between £20,000 and £40,000
- ☐ Between £40,000 and £60,000
- ☐ Between £60,000 and £100,000
- ☐ More than £100,000
- ☐ I don't own a car

6. What would you say is the total value of all your cars?

- ☐ Up to £10,000
- ☐ Between £10,000 and £20,000
- ☐ Between £20,000 and £40,000
- ☐ Between £40,000 and £60,000
- ☐ Between £60,000 and £100,000
- ☐ Between £100,000 and £150,000
- ☐ Between £150,000 and £200,000
- ☐ More than £200,000
- ☐ I don't own a car

7. Are you considering buying any of the following cars in the next 2 years?

(PLEASE TICK ALL THAT APPLY)

- ☐ Yes, definitely a new car
- ☐ Yes, definitely an approved used car
- ☐ Yes, definitely a second hand car
- ☐ Quite likely, a new car
- ☐ Quite likely, an approved used car
- ☐ Quite likely, a second hand car
- ☐ It's possible, but unlikely
- ☐ No

8. Would you buy at an auction? Or have you in the past?

- ☐ Yes, I would buy at an auction, and have previously done so
- ☐ Yes, I would consider buying at an auction, but haven't previously done so
- ☐ It's possible, but unlikely that I'd buy at an auction
- ☐ No, I wouldn't consider buying at an auction

9. Have you ever used a specialist car finance provider for a purchase?

- ☐ Yes, I have used a specialist car finance provider in the past
- ☐ No, I haven't used a specialist car finance provider, but would consider it
- ☐ No, it's unlikely I'd consider a specialist car finance provider

11. Which of the following are things do you use your car(s) for?

	Often	Occasionally	Rarely	Never	N/A
Car shows	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occasional drives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participating in car shows	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Track days	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Concours competitions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Car rallies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Owner's Clubs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12. How often do you go to car-related social gatherings, like events, meets, shows, competitions, clubs and so on - per year?

Please enter the number of times, using an estimated number if needed.....

13. When your car needs work, what types of car-related products do you personally make the final brand decision on?

- ☐ Tyre make
- ☐ Wheels
- ☐ Oil brand
- ☐ Detailing products brand
- ☐ Brakes / suspension In-car entertainment
- ☐ Exhaust-related parts
- ☐ Other (please specify)

.....

14. Taking a moment to think about it, what's your approximate car-related spend per year?

We're not including purchase or insurance here, just work and maintenance and so on, whether you do the work yourself or pay someone else to.

- ☐ Less than £500
- ☐ Between £500 and £1,000
- ☐ Between £1,000 and £1,500
- ☐ Between £1,500 and £2,000
- ☐ Between £2,000 and £2,500
- ☐ Between £2,500 and £3,000
- ☐ Between £3,000 and £3,500

10. Do you use a specialist motor insurance provider?

- ☐ Yes (please specify which provider)
- ☐ I don't, but I would consider a specialist insurer
- ☐ No, I generally wouldn't consider a specialist insurer
- ☐ If yes, please specify which provider here

.....

- ☐ Between £3,500 and £4,000
- ☐ Between £4,000 and £4,500
- ☐ Between £4,500 and £5,000
- ☐ Over £5,000
- ☐ I don't own a car

15. How much would you estimate you spend on detailing products each year?

- ☐ Less than £50
- ☐ Between £50 and £100
- ☐ More than £100
- ☐ I don't spend on detailing

16. Do you have breakdown cover?

- ☐ Yes, (please specify the brand)
- ☐ No, but I am considering one
- ☐ No, I don't and I don't need one
- ☐ If yes, please specify which provider here

.....

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17. When it comes to detailing, what are your preferred or favourite brand(s)?

	Always	Sometimes	Never but would consider	Never	N/A
Autoglym	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gtechniq	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CarPro	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Meguiars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Angelwax	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alchemy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gyeon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify).....					

18. Regarding in-car entertainment, can you give us your personal score for the following brands on a scale of 1-5, where 1 is 'very poor' and 5 is 'excellent'?

	Always	Sometimes	Never but would consider	Never	N/A
Alpine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bose	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bowers & Wilkins	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Retrosounds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Audison	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Focal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sony	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pioneer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kenwood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
JVC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19. Do you own an add-on satnav?

- ☐ Yes, (please specify the brand)
- ☐ No, I don't but I am considering one
- ☐ No, I don't and I don't need one
- ☐ If yes, please specify which provider here

20. Would you say you're in the market for in-car entertainment within the next 2 years?

- ☐ Yes, I definitely am
- ☐ It's possible, I might be
- ☐ It's unlikely
- ☐ No

21. Thinking of breaks, holiday and travel, how often do you travel with your car, or to car-related destinations per year, as a break/holiday?

Car Rallies.....

Motorsport events.....

Driving holidays.....

22. How many watches do you own?

23. Please list all the watch brands you own

24. Is one a smartwatch?

- ☐ Yes
- ☐ No

25. Would you say you're in the market for another watch, in the next 2 years?

- ☐ Yes, I'd say I am in the market for a new watch
- ☐ It's possible, but unlikely
- ☐ No, I'm not looking to buy a watch within the next 2 years

26. Are you in the market for a new smartwatch, over the next 2 years?

- ☐ yes, I definitely am
- ☐ It's possible, I might be
- ☐ It's unlikely
- ☐ No

27. We're interested to know if you have, or are interested in, any of the following financial products or services. Please tick all that apply:

- ☐ Wealth management
- ☐ Private health
- ☐ Life insurance
- ☐ Income protection
- ☐ Wine/spirits investments
- ☐ Other

28. We touched on car-related holidays and events earlier. Specifically on general holidays, how many would you say you typically take each year (without a pandemic getting in the way) of the following types?

Breaks in the UK.....

Breaks in Europe.....

Breaks further afield.....

29. And what would you say are your favourite types of break?

- ☐ Package holidays
- ☐ Beach/Resort
- ☐ Countryside
- ☐ Lakes & Mountains
- ☐ City Break
- ☐ Coach Tour
- ☐ Escorted Tour
- ☐ Sea Cruise
- ☐ Golfing
- ☐ Backpacking
- ☐ Multi-Country Tour
- ☐ Safari
- ☐ Skiing/Winter Sports
- ☐ Spas/Health Spas
- ☐ Boating/Sailing Holiday
- ☐ Watersports
- ☐ Other Theme Park
- ☐ Camping
- ☐ Holiday Centre (e.g. Centre Parcs)
- ☐ Other

30. Do you have any subscription boxes e.g. beer, food, pet supplies? If yes, which ones?

.....

.....

.....

ABOUT YOU

31. Which area of the UK do you live?

- ☐ North East
- ☐ North West
- ☐ Yorkshire and the Humber
- ☐ East Midlands
- ☐ West Midlands

- ☐ East of England
- ☐ London
- ☐ South East
- ☐ South West
- ☐ Wales
- ☐ Scotland
- ☐ Northern Ireland
- ☐ I don't live in the UK

32. What is your gender?

- ☐ Female
- ☐ Male
- ☐ I prefer not to self-identify
- ☐ I prefer not to say

33. What is your age?

.....

34. Employment status

- ☐ Working full time
- ☐ Working full time
- ☐ Working part time
- ☐ Not working - Retired
- ☐ Not working - Unemployed
- ☐ Not working - Full time homemaker / parent
- ☐ Not working - Full time student
- ☐ Long term illness/disabled
- ☐ None of the above

35. How many children, under the age of 16, are in your home?

.....

36. What is your gross household income (before tax)?

- ☐ Less than £10,000
- ☐ £10,000 - £19,999
- ☐ £20,000 - £29,999
- ☐ £30,000 - £39,999
- ☐ £40,000 - £49,999
- ☐ £50,000 - £74,999
- ☐ £75,000 - £99,999
- ☐ £100,000 - £150,000
- ☐ Over £150,000

37. What is the total value of the savings and investments of all members of your household?

- ☐ Less than £5,000
- ☐ £5,000 - £9,999
- ☐ £10,000 - £24,999
- ☐ £25,000 - £49,999
- ☐ £50,000 - £74,999
- ☐ £75,000 - £99,999
- ☐ £100,000 - £149,999
- ☐ £150,000 - £199,999
- ☐ £200,000 - £250,000
- ☐ £250,000 or more

NEARLY FINISHED

38. Thanks for completing our survey. Please provide your details for entry into our free prize draw for the chance to win one of three John Lewis vouchers worth £100 each*

*This prize draw is for the Kelsey Media motoring reader surveys featured in Classic Porsche, Jaguar World, 911 & Porsche World, Aston Martin Driver, Classic Jaguar and Total BMW magazines.

Entries close 1st January 2023. The winners will be drawn on 3rd January 2023 and contacted within three working days.

Name.....

email.....

Phone number.....

The editor's decision is final and no correspondence will be entered in to.

*Full Kelsey Media Competition – Terms of Entry can be viewed here www.kelsey.co.uk/competition-terms-conditions/.

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July 31, 1962

F. PORSCHE ETAL

3,047,331

FRAME CONSTRUCTION FOR VEHICLES

Filed Feb. 12, 1959

2 Sheets-Sheet 1

FIG. 1

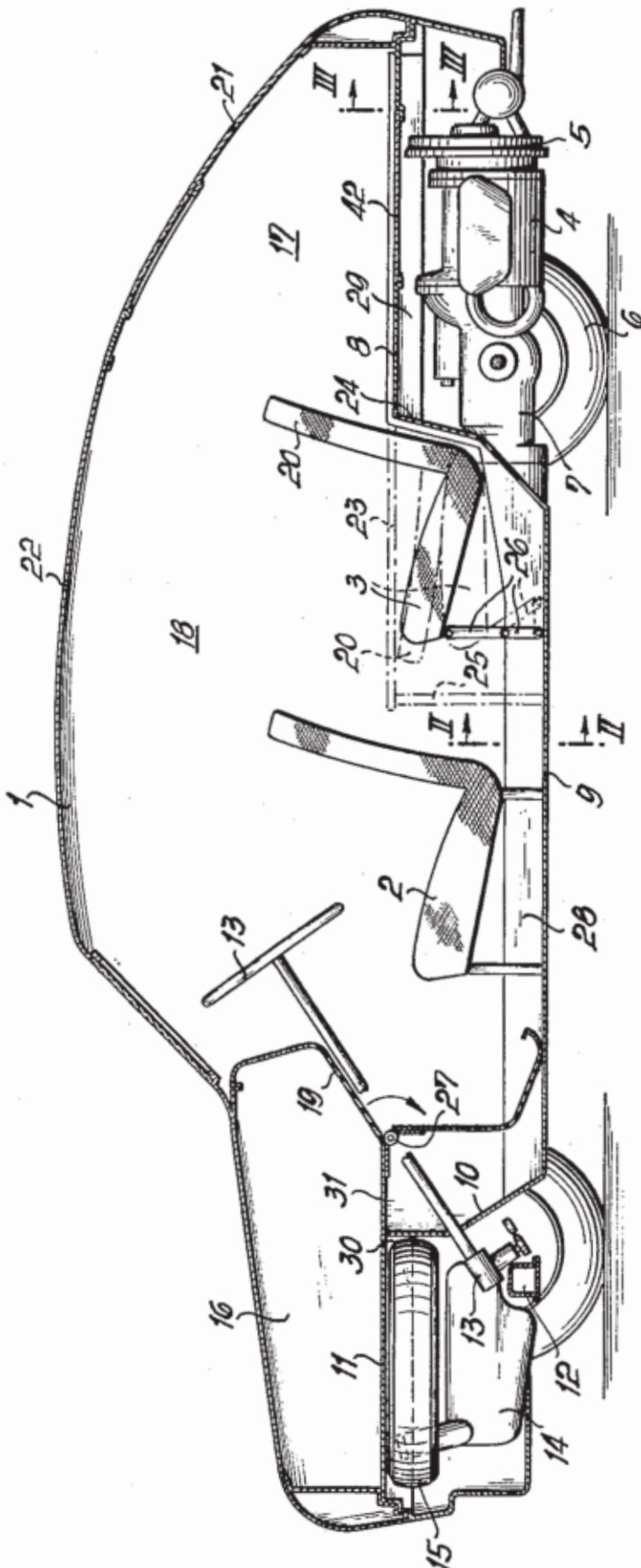


FIG. 2

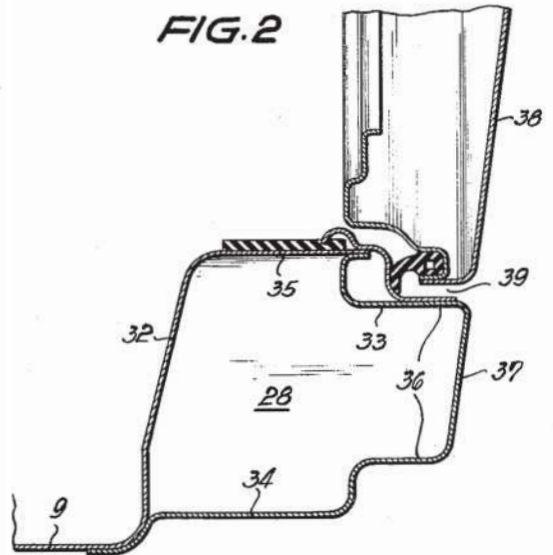
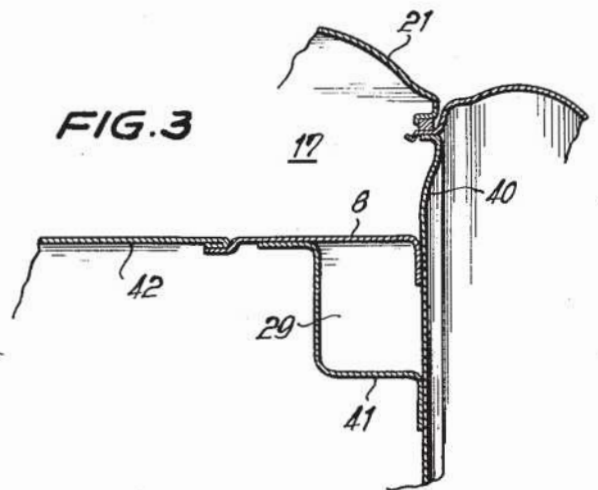


FIG. 3



INVENTORS

FERDINAND PORSCHE
ERWIN KOMENDA
FRIEDRICH BLASCHKA

By Dicke, Craig & Freudenberg
ATTORNEYS



THINK BIG

Whether Panamera, Taycan, Macan or Cayenne, Porsche has had huge success with its more-door models, which provide generous room for families, plus their luggage. In truth, the company knew greater rear cabin space would broaden the appeal of its products as far back as the early 1950s, but early attempts at creating full-four-seater Porsches failed to get past the prototyping stage...

Words **Shane O'Donoghue** Photography **Porsche**

Staying true to its core values whilst prospering and expanding has been a challenge since Porsche's inception. Indeed, it wasn't so much pressure from marque enthusiasts, but protection of the brand from its founders and management team which prevented Porsche from branching out too early. This is clearly illustrated not only by the model line produced for the first fifty years of Porsche history, but also by the company's various stillborn concept cars and prototypes. A true four-seat, air-cooled Porsche, for example, was quite rightly identified as a desirable product early on, the idea being such a car would encourage more brand loyalists — if you're

starting a family, a 356 or 911 might not seem like the most practical of vehicles. Porsche was keen not to lose customers to other manufacturers when buyers of its products reached such personal milestones.

The first attempt at true Porsche four-seater arrived not long after the company's return to Stuttgart following time spent assembling early 356s in Gmünd. Using the 1952-specification, 356 Pre-A as a starting point, the Type 530 explored the feasibility of a stretched 356 with much more space around the rear seats. Two prototypes (a coupe and a cabriolet) were constructed. The new-for-1952 single-piece, V-shaped windscreen was employed, along with much of the rest of the 356 production car's design detail. The standard 356's

Previous spread Porsche patent (granted in the USA on 31st July 1962) for the Type 695 passenger car



2,100-millimetre wheelbase, however, was stretched by a further 300mm. The rest of the sheet-steel body was redesigned to suit.

In the Type 530 coupe pictured here, the redesigned body meant a higher roofline, standing at 1,350mm off the ground (up 30mm over the 356 2+2 coupe) and a longer roof to create headroom for the rear passengers. This necessitated a more upright rear windscreen and an almost saloon-like profile, though unmistakably from the same school of design as the 356. The Type 530 cabriolet featured a notably long folding soft-top.

Its rear occupants benefited from windows which could be fully cranked, regardless of whether the roof was retracted. The coupe made do with longer side windows pushing out at the rear, mirroring those of the 356.

To allow easier access to Type 530's large rear seats, longer doors were fitted, while the upper portions of the new back seats were designed to tilt forward (a common feature of the 356 and all 911s) to increase luggage space when there was nobody seated in the rear. Porsche quoted a mass of 918kg for each of the Type 530s, which

was some hundred kilos heavier than the 356. There was a notable change in weight distribution, too — the Type 530 coupe had 54.5 percent of its mass at the rear, while the cabriolet had fifty-three percent of its weight at the back. Compare this with nearer 55.5 percent for the 356 coupe. It becomes clear the Type 530 could have had slightly better balance, if not quite the same traction advantage, than the period's production Porsche.

Porsche equipped the Type 530 with the Type 527 flat-four, a 1.5-litre unit pumping out 59bhp at 5,000rpm and 75lb-ft torque at 3,000rpm. Power was sent to the rear wheels via a four-speed

manual gearbox. The prototypes appear production-ready in photographs and what little information there is about these cars suggests there was a lot of support for the Type 530 project from Ferry Porsche. The official line, however, is that after extensive trials, the Type 530 design was rejected for series production, primarily on the grounds of concerns regarding marketing of the production variant.

And yet, with the Type 644, our favourite manufacturer revisited the idea of a family-friendly Porsche only a

COUNT ALBRECHT VON GOERTZ WAS INITIALLY DRAFTED IN TO HELP, BUT HIS INVOLVEMENT AT PORSCHE DIDN'T WORK OUT

Above The Porsche Type 530 prototype, one of two built (this being a sports coupe, the other a cabriolet)



c5789ddb a5df 4b46 9c84 c56e1e8ad27f



Above Erwin Komenda and Ferry Porsche at the drawing board — the latter felt the company's product range needed a car with bigger rear passenger room to widen brand appeal beyond traditional sports car drivers

Below and facing page Type 530 had an upright windscreen and a much higher roofline than the 356

couple of years later. Sadly, nothing more than styling sketches of various roof designs sat on an extended wheelbase came to fruition, unlike in 1956, when the Type 695 project kicked off. We should stress, this wasn't intended as a replacement for the 356 — Ferry Porsche saw the Type 695 as a complementary model with four full-size seats and more cabin space. Far from thinking he and his engineering team didn't take the project seriously, there's evidence they invested plenty of time and resources into it. Indeed, on 12th February 1959, a US patent (number 3,047,331) was filed by Ferdinand Porsche, Erwin Komenda and Friedrich Blaschka showing a novel chassis-and-body construction technique using box-section sills, specifically for a four-seat vehicle with the engine at the back and the fuel tank and spare wheel mounted in the nose. The design, patented 31st July 1962, but originally applied for in Germany on 1st March 1958, shows the seats mounted low down in the car and allowed for lots of luggage space, both front and rear.



On the subject of design, it took Porsche several years to go from conceiving the idea of a larger car carrying the Stuttgart crest to effectively signing off on what it might look like. Count Albrecht von Goertz, designer of the BMW 507 (a roadster produced by the men in Munich from 1956 until 1959), was initially drafted in to help, but his involvement at Porsche didn't work out and he soon left. He would later claim he contributed to the design of the 901. Meanwhile, Ferdinand Alexander 'Butzi' Porsche (son of Ferry, grandson of Ferdinand) was coming of age and about to begin his career as an automotive stylist. To his frustration, the designs he submitted for a larger-than-356 four-wheeler were 'reinterpreted' when passed to long-time Porsche designer, Komenda, who turned Butzi's work into engineering drawings, causing a fair degree of boardroom strife in the process.

TENSION MOUNTS

To make matters worse, Komenda and his team went as far as creating their own full-scale model of the design, which differed considerably to Butzi's penwork. In doing so, their intention was to keep design language close to that of the 356, notably so in the relationship of the wheels to the wheel arches. Even so, the design was rejected. Then, in 1960, Butzi's design was brought to life in prototype form. It used a stretched 356 platform of 2,350mm with the 356's swing-axle rear end and a novel new strut-type front suspension, though at this stage, the project's focus was chiefly on aesthetics.

This was the Type 754, the factory designation adopted for the prototype, which nearly made it into production. Klaus von Rücker oversaw development of the new suspension, intending to create a chassis of far more sophistication than that of the 356. Experimentation was carried out using designs by in-house suspension guru, Wolfgang Eyb. The finished product used wishbones up front, with anti-roll bars, coils and dampers mounted together all-round. Trailing arms featured at the back. Next on the list of items to reinvent was the engine.





Initially given project code Type 745, this was to become the flat-six to power the first 911. A major moment in Porsche history was reached when the engine was signed off as a 2.2-litre unit developing 130bhp and 130lb-ft of torque.

By early 1962, it appeared this new Porsche, as yet unnamed, but known as the T7 (in keeping with the nomenclature used for 356 bodies), was ready for production, but it didn't progress past the prototyping stage due to a series of decisions made over the course of the following twelve months. The first was the redesign of the 356 body to ensure it would sit well alongside the proposed volume-production T7. This led to a flurry of engineering changes, which effectively resulted in the 901, a Porsche much larger than the 356 and with more passenger and luggage space, but still very much a 2+2. Consequently, the T7 was shelved — in a roundabout way, the 911 owes its being to the T7. And, as we know, Porsche didn't completely give up on the idea of a full four-seater.

ITALIAN FLAIR

Turmoil raged between the company's ruling families toward the end of the 1960s and into the start of the 1970s, leading to a dramatic restructuring of the organisation's businesses and a stepping down from responsibilities and day-to-day management by anyone with the Porsche or Piëch surname. Although we have no

evidence to support the theory, this could be partly why Porsche commissioned Italian design and coachbuilding house, Pininfarina, to design and produce a prototype four-seat version of the 911. It was otherwise an unusual move for the company, which prior to this commission, had preferred to use its considerable internal resources for such projects.

Pininfarina used a B-series 911 S as the basis for its prototype. The B-series already featured a fifty-seven-millimetre increase in wheelbase over the A-series

911, with the rear wheels moved backwards in an attempt to stabilise the car's handling. Pininfarina's design, codenamed B17, was 192mm longer again in the

wheelbase. This significantly altered weight distribution toward the back of the car — where the A-series models were 41.5/58.5 (front/rear percentage) and the B-series was 43/57, the B17 had sixty-one percent of its mass distributed at the rear.

While the B17's leather-lined rear accommodation was said to be comfortable for two adults, and though a fantastic view to the outside world was provided by an extended roof and large opening rear windows, it's understood the B17's handling was far from up to scratch. This is Porsche, after all. What's more, the Pininfarina car's mass had increased by 135 kilograms (on a car starting out at a comparatively scant thousand kilos). Porsche paid Pininfarina for its time and the two companies parted ways. That said, rather oddly, the

Above and facing page
B17 was a larger version of the 911 styled and prototyped by Pininfarina

POWER CAME FROM A 2.2-LITRE FLAT-SIX MAKING 180BHP AND SENDING DRIVE THROUGH A FIVE-SPEED MANUAL GEARBOX



Above Porsche revisited the B17 in 1975, painting it bright green and equipping it with a Carrera RS engine

Right Ferry Porsche (left) with his eldest son, Ferdinand Alexander 'Butzi' Porsche, examine the packaging of the 356 A Carrera

Below 911 cues are easy to spot when looking at this photograph of the T7

one-off B17 concept was revamped in 1975. The car's subdued dark paint was replaced a searing green hue covering freshly flared wheel arches hugging wider wheels and tyres. Chrome was swapped for anodised black brightwork and, quite remarkably, a Carrera RS 2.7 flat-six made its way beneath the engine lid.

DON'T STOP BELIEVING

Just as curiously, Porsche took inspiration from the B17 to create yet another big-cabin prototype in 1970. Developed under the Type 915 project code, the car became known as the C20. It didn't look drastically different to Pininfarina's effort, but stayed truer to the original design language of the 911, extending the curved rear side window design, rather than reinventing it (as the Italians had). More rakish rear bodywork meant less headroom, though. Conversely, the C20's wheelbase was 2,615mm, representing a massive stretch of 347mm over the B-series coupe. This may have improved rear legroom, but it also resulted in a laughably big turning circle of some

twelve metres. Nevertheless, the C20's weight distribution was claimed to be the same as that of the donor B-series 911.

Porsche carried out more significant chassis tweaking than Pininfarina, including shifting the mounting points for the front wishbones up by forty-five millimetres, which meant the need for thick shims to bring the wishbones themselves back to their correct positions. The caster angles and upper shock absorber mountings were also changed to suit the extended wheelbase, while a fifteen-millimetre diameter front anti-roll bar was fitted. The same thickness of anti-roll bar was used at the rear, while the trailing links were lengthened by 50mm.

Power came from a 2.2-litre flat-six making 180bhp and sending drive through a five-speed manual gearbox. The six-inch wide Fuchs alloy wheels were shod in Michelin 185/70 VR15 tyres. Koni dampers were employed in each corner. The 911 S's standard disc brakes were also fitted to the prototype.

Unfortunately, because of geometry

changes cause by the revised chassis, heavier and more expensive universal joints were needed in place of the 911's simpler half-shaft joints. Porsche managed to keep the overall increase in weight down to about a hundred kilos, and the longer wheelbase should have meant better balance than the core car and the Pininfarina effort, but Zuffenhausen's chassis tuning team didn't have time to work its magic before the project was shelved. This decision appears to coincide with the shake-up of Porsche's management board and the departure of Ferdinand Piëch (son of Louise Piëch, grandson of Ferdinand Porsche), one of the driving forces behind the C20, who left Porsche in 1971. Later, he would become chairman of the executive board of Volkswagen Group and chairman of the Wolfsburg outfit's supervisory board.

Of course, many marque enthusiasts are glad the idea never made it to production, potentially diluting the legacy of Porsche's air-cooled product line-up, but just as many 911 owners probably wish they had a little more cabin space to accommodate their families when heading out in their Stuttgart-crested joy toys. Ferry Porsche didn't give up on the idea altogether, though. He was the catalyst for the 928 H 50 project, a long 'land shark', complete with suicide doors to give the maximum amount of access to a super-luxury rear cabin in a Porsche grand tourer. Like the Type 530, the H 50 project failed to gain traction beyond a pair of prototypes, but its legacy lives on in the Panamera, the closest thing Porsche has ever produced to a four-seater 911. If only Ferry had been around to see it roll off the production line. **CP**



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PORSCHE 911



1996, £125,000. Porsche 911 Carrera (993) 1996 road/race car, N reg., 3.6 lt twin turbo, 6 speed gearbox, turbos recently rebuilt and fuel lines replaced. Engine 500 bhp (approx.) Brembo race brakes (road units also supplied). Gt 2 wide body kit fitted with 8x10x18" BBS alloys. Welded custom cage, fire eater system, air jack system (as per Brit car). Variety of race springs available, variety of split rims and spare set BBS alloys available at separate extra cost. Competed in AEMC and ASEM sprint championships and DOMC North Sports Saloon Championship Please call 07860379440, East of England.

112913

PORSCHE 911



1977, 100 miles, STOLEN! 1977 Porsche 911, VIN: 9117300972, Registration: 90 FF, Guards Red with black leather, Fuchs alloys, sunroof. STOLEN from Battersea, London, evening of Monday 25th July. Any information please contact Metropolitan Police and owner at sr_313@outlook.com. , Greater London.

115786

PORSCHE 911



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112557

PORSCHE 911



2003, £69,950. The vehicle has a service record full of stamps from both Porsche Main Agents and independents. The vehicle will be re-serviced and inspected at Jasmine Porsche prior to delivery to the lucky new keeper. Please call 01229 486315, North West.

112558

PORSCHE 911



1972, £119,995. The Viper Green paint is first class, the chrome work exceptional and the interior is outstanding and incredibly sharp. Please call 01944 758000, Yorkshire and the Humber. (T)

110061

PORSCHE 911



£107,950. This car has just been released from the private collection of one of our very best clients and friend of the business. The car must be viewed in order to fully appreciate. The history file is just enormous and contains receipts for recent works carried out by our client totalling £40,000. As such, this is a turn key operation, nothing to sort, nothing to do but just drive and enjoy. Please call 01229 486315, North West.

112561

PORSCHE 912



1967, 132853 miles, £45,000. Porsche 912. I am selling my 912 after 12 years of ownership. The car is a 1967, left hand drive short wheelbase car with matching numbers. The car was originally from California and was imported into the UK around 2000 where it underwent a restoration. Please call 07773772474, North West.

113516

PORSCHE 924



£4,750. Very Tidy Porsche 924 with 1 years MOT and ready to drive away. Its only done 53000 miles with mots to back up the mileage. The car has had a good bit of money spent on it since 2019 and it runs and drives very well. We have one set of keys, the V% and lots of old MOTs and receipts and a service book with stamps at 48500. 48600, 49000 and 50000 miles. Please call 01875 820527, Scotland. (T)

113125

PORSCHE 928



1990, 165000 miles, £29,928. Porsche 928 S4 auto 1990. Restored by Porsche Portsmouth and Porsche approved Poole body shop for Porsche UK 40 YEARS AT THE FRONT DEALER COMPETITION IN 2016. Very rare in special order Tahoe blue , even more rare is having in excess of £55000 spent in restoring it bodily and mechanically. Done 165k with a large documented service history , all books and receipts showing over £55k being recently spent in bringing the 928 back to its former glory. Everything works on car as you would expect ! Full extensive photographic record of epic restoration . Been mainly looked after by Porsche main dealers for the last 5 years , done several hundred miles since restoration . , Scotland.

113608

PORSCHE 912

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Keeping the 912 faith

PORSCHE 928



110000 miles, £29,999. coupe (pre-S- model). auto, a very desirable car light blue metallic with royal blue leather, full-service history, Porsche UK authentication certificate. Please call 01452 731289, South West.

110220

PORSCHE 944



1990, 133000 miles, £12,950. 944S2 Cabriolet, Guards red, black interior. Lovely condition, total 3 owners, dotting last one for 29 years. Every document for that period. Serviced at Northway Porsche, always garaged. MOT to February 2023. Please call 07711703542, South East.

113090

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Please contact us by email :
contact@raceparts9.com or contact@racecars9.com

PORSCHE 944



1990, 186000 miles, £20,995. As featured in 911 and Porsche World, late model 952 (250hp) with FSH, cream leather, M030, genuine original car, loved by me (4th owner) for 19 years. Drives beautifully, fabulous condition which belies its mileage. Please call 07710094124, East Midlands.

113444

PORSCHE 944



1989, £13,950. 944 S2 Cabriolet. Lovely Looking Appreciating Classic in Black over Cream Leather Interior. Please call 07835 877345 , South West.

110586

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PORSCHE 944



46000 miles, £13,950. 944 S 16V Coupe.

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113141

PORSCHE 944



1991, 16999 miles, £16,999. 944 3.0 Cabriolet S2. 5 speed manual, 92k miles, service history, 4 keepers, fully specification, Baltic bleu metallic pain with linen coloured interior, new blue mohair soft top. Please call 01452 731289, South West.

110219

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PORSCHE 944



1987, 2 Previous owners current owner 18 years, 94 000 miles, summer use only, always garaged, well maintained and in excellent condition. Please call 07747020758, South West.

PORSCHE BOXSTER



2006, 67000 miles, £11,250. My car is in Arctic Silver with Sand Beige leather interior, registered in November 2006. It's a Tiptronic with Sport Chrono which is a "must have" option with the auto as it makes it more lively and responsive than without. It's in great condition. There's a few stone chips on the front but no rust and she benefits from many optional extras some of which are rarely optioned on a Boxster. Please call 07909923202, South East

11370

PORSCHE BOXSTER



2003, £9,750. 2003 Porsche Boxster 3.2 S. Metallic Basalt Black with Black leather and Black power soft top. Facelift model with the glass heated rear window and clear indicator lenses. 6-speed manual, power steering, ABS, Porsche stability management, automatic air-conditioning, headlamp wash, factory alloy wheels, xenon headlights, Bose sound system with CD stereo, wind deflector, electric windows and mirrors, electric seat recline, remote central locking and alarm with 2 keys. Only 74,000 miles with full service history from new. Extremely nice condition throughout. Please call 01277365415, East of England. (T)

113353

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1952 KLASSENSIEG

1953 EX AEQUO DOPPELSIEG

1954 ZWEI KLASSENSIEGE

1100 ccm: Arkus-Duntov/Olivier

1500 ccm: Claes/Stasse

Ebenso nördlich des Polarkreises

Rallye „Zur Mitternachtssonne“

Schweden

1950/51 KLASSENSIEG

1952 SIEGER IM GESAMTKLASSEMENT

1953 SIEGER IM GESAMTKLASSEMENT

1954 SIEGER IM GESAMTKLASSEMENT

(C. G. HAMMARLUND)



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92.510DUAL / 1620605800 Exhaust, 2 x Ø50 mm outlet pipe - TÜV/EEC approval
92.510DUALS / 1620605700 Exhaust, Sport, 2 x Ø50 mm outlet pipe, rear, dual outlet, Stainless Steel, polished



92.210S / 1620607800 Exhaust, Ø60 mm outlet pipe - TÜV/EEC approval



91.410 / 1620612200 Exhaust, with dual center outlet pipes, "GT3" style, 2 x Ø63 mm



92.510S / 1620603400 Exhaust, Sport, Ø70 mm outlet pipe, Stainless steel - TÜV/EEC approval
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