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ISSUE

THE REAL DEAL A HISTORY OF 944

944 TURBOPROJECT REVEALED

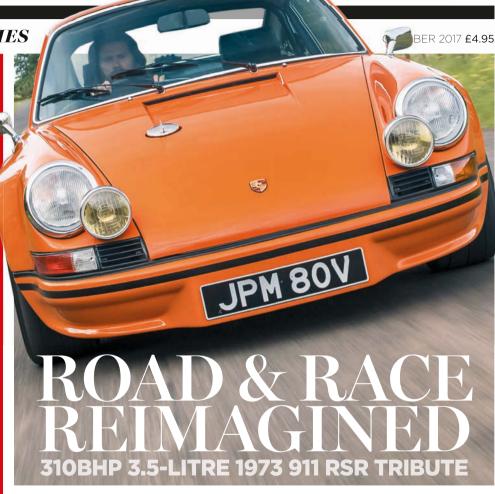
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Plus

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THE CUTTING HEDGE!

MANY OF YOU have been asking when we're going to launch an Ultimate Porsche project car. I'm pleased to announce that the wait is finally over! In what is very likely to be the closest I'll ever get to a barn find, a 1986 Guards Red 944 Turbo has been rescued from the hedge it has spent the past half-decade living in (yes, really) and dragged back to my place where work to afford the car a new lease of life is about to begin. I'm looking forward to getting stuck in. Read all about the start of my adventures on pages 72-78.

When it comes to introducing a 951 project to *Ultimate Porsche* readers, few issues will be as fitting as this special 944-themed edition of the magazine. We're paying tribute to thirty-five years of the all-conquering transaxle, a car that was Porsche's most successful product after it went on sale in 1982. Richard Gooding takes us on a trip down memory lane with a look back at 944 history from the model's development through to the launch of the 968, while wildly modified 944s are represented by James Howson's Audi-powered Lux. Equipped with a tuned 3B, the turbocharged monster has been painted Stagecoach green!

Frank Cassidy's 1973 911 RSR tribute returns to the pages of *Ultimate Porsche* following its supporting role in the 'Porsche People' feature we ran in our August issue. We received numerous emails from readers keen to find out more about this awesome 3.5-litre Signal Orange wide-body. We're sure you'll enjoy reading the story of how Frank's classic restomod came to be.

His isn't the only 911 that we've been having fun with this month: few 930 trim options exude the glamour of a Cabriolet. We took a Baltic Blue rag-top Turbo for a blast around rural Yorkshire. It didn't fail to entertain! Read all about it on page 52.

As ever, we love featuring real cars driven by real enthusiasts, so be sure to drop me a line with details of your classic Porsche. I look forward to hearing from you. In the meantime, I'd better start tidying my grime-covered 944 Turbo. Wish me luck!



Email dan.furr@kelseymedia.co.uk Twitter @ThePorscheMag Facebook facebook.com/UltimatePorsche Instagram theporschemag

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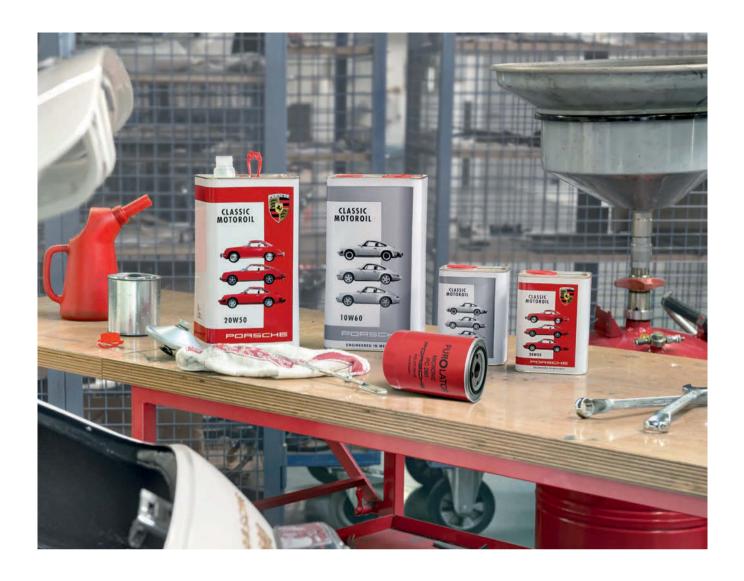












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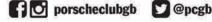
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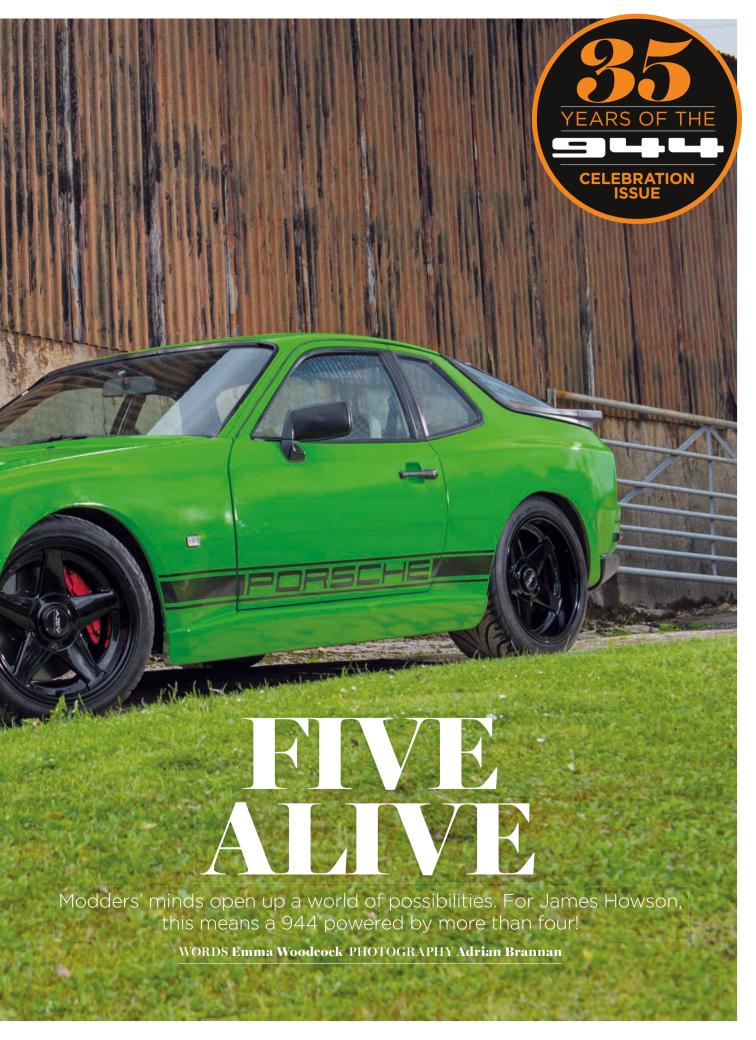
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JAMES HOWSON

Occupation Agricultural engineer

First Porsche A two-litre 924

Favourite Porsche 944 Turbo

Best thing about your 3B-powered 944 Its 20-valve engine is simply awesome

Worst thing about your 3B-powered 944 Fitting the gearbox was a challenge



ing! I've got mail. Onto the desktop, open the message, click the link. It's a video from James Howson, owner of the striking 944 you see on the pages before you. The clip he's sent me is short, but it's one that distils the essence of his personalised Porsche. The mean, green machine vaws into view, rear wheels spinning before grabbing traction and spooling down the road. The visuals are impressive, but it's the soundtrack that really gets juices flowing; a hard-edged, gravel-voiced cacophony roars from a single rolled exhaust tip. Bwaaaaarh! Psssh! It's an unusual, distinctive note. Too baritone to be a four, too clear-cut for a benteight. It can be nothing other than a straightfive. And it sounds amazing!

A couple of years ago, James wasn't making video clips – he was watching them! More specifically, he was viewing videos of modified motors loaded with Audi engines. One car stood out above all others. It was a 944 propelled by a turbocharged five-cylinder lump and heaps of

'wow factor'. He was impressed enough to begin searching for an Audi powerplant and a fourwheeler to put it in.

The car came first. For just £800, the agricultural engineer from Cumbria purchased an unkempt 1985 944 Lux complete with early dash and a 2.5-litre four-pot lump. "I drove the car for close to eight months before I made any changes," he explains. "I owned a two-litre 924 prior to the arrival of the 944. My experience behind the wheel of these cars, however, left me thinking that naturally-aspirated transaxles are a little uninspiring to drive when compared to their forced induction counterparts," he muses.

Within weeks, James had sourced the 3B turbocharged straight-five from an early S2 coupé. He was primed to start work equipping his 944 with blown Audi power, but it would take a further eight months before the conversion was complete. "Physically, the Audi engine slots into place without issue. It's shorter than the 944 2.5, leaving plenty of space for ancillaries. That's not to say that I didn't face any challenges!" he laughs.







Left 3B was an easy fit, despite an Accusump oil accumulator and a Garrett T34 making the engine bay look cramped

Above It might share its colour with the Stagecoach that transports your granny to town, but James' 944 is anything but an old bus!

Right Azev five-spokes shield custom Compbrake calipers







Shared estate

Shared estate

James Howson's
bright green 944 isn't
the first Porschelabelled car to feature
a five-pot Audi engine.
The Audi RS2 proudly
wore Porsche script on
its front grille and its
tailgate, alongside
Porsche-branded
Brembo brakes, 964
Turbo door mirrors
and seventeen-inch
Cup alloys. The
inter-marque meddling
ran more than skin
deep; Porsche
reworked the Audi's
engine, adding a
bigger turbocharger,
high-lift camshafts and
a fresh map designed
to produce 315bhp.
Elsewhere on the car,
304mm drilled front
brake discs were lifted
from the mighty 968
Clubsport's M030 cost
option, while ride
height was lowered by
a noticeable 40mm.

The first head-scratcher concerned sump location. When installed in the donor vehicle, the 3B sits entirely in front of the axle line. This is in stark contrast to its frontmid position beneath the bonnet of the 944. Consequently, neither the Audi nor the original Porsche sump would fit the engine in its new home. The solution? James merged the sumps of both cars in order to create a custom part featuring extensive baffling.

The 3B was treated to new forged internals and a racy crank prior to installation, but no matter how robust the bottom end was. things weren't panning out as planned uptop. For a start, the inlet manifold wouldn't fit where James wanted it to sit. In its original application, the pipework loops to an intake at the rear of the engine. Many consider this a poor design for a car focused on performance and packaging. "To make the system work in the Porsche as Audi intended, I'd have to cut my 944's bulkhead," he sighs. There was no way he was prepared to butcher his car for a design he thought questionable, a train of thought that led to the purchase and appointment of a forwardfacing manifold lifted from a 1990s Audi S4, the performance-oriented version of the 100 saloon.

TURBO TALES

Manifolds would also prove a sticking point when it came to installing the turbocharger. Initially, James used the donor S2's cast iron exhaust manifold, placing the turbine to the side of the engine and using a U-bend pipe to connect it. The result was cramped, but quick thinking resulted in the setup being dismissed in favour of a more creative solution; the 944's pop-up headlights and their bulky electric motors were removed in order to free up space at the front of the engine bay. It was a strong concept: the newly liberated area provided ample space for a larger turbo (a Garrett T34) and good proximity to attach it to the side of the engine. In turn, this allowed for the uncompromised fitting of an oil return pipe.

Concerns regarding the likelihood of the cast manifold cracking under increased pressure encouraged James to invest in a 034Motorsport uprated part. The new manifold is ideally suited to an environment where free-flowing air and an ability to withstand extremes of temperature are key. Custom turbo bracing, a Forge Motorsport actuator, bespoke water cooling pipes and a large front-mounted intercooler also promote reliability whilst maximising performance; under the regulation of DTA S80 standalone engine management, the straight-five is now producing a sizeable 371bhp at 20psi boost.

The extra space at the front of the car's engine bay allows for the hosting of 944 Turbo dual radiator fans, although the aforementioned intercooler was too big to fit in the same void, leaving James with no choice but to mount it externally. "In truth, it does a better job out in the open!" he smirks. "Most people like it due to the track-focused vibe it gives off." The race-



ready aesthetic is reinforced by Deutsch Nine bonnet vents. James confirms that fitting these parts has dropped temperatures at the nose of the car by more than ten degrees!

With the engine sitting pretty, it was time to transmit its power to the rear. A 944 Turbo S gearbox was called into service, a unit known for its harder first and second ratios – plus its limited-slip differential – when compared to a standard 944 Turbo five-speed. The later model's external transmission cooler was also put to good use.

"I was able to use the car's original gearbox mounts, but mating the Turbo S cog cruncher to the Audi engine wasn't quite as straightforward as I hoped it would be," recalls James. "The spigot bearing poked too far through the 924 bellhousing I was using, necessitating the need for a 10mm spacer plate from an Audi S4 V6. I also had to remove a fair amount of webbing to ensure the bellhousing cleared the 3B flywheel I'd retained."

In Cina

Porsche has never produced a model with five-cylinder power, but things could have been very different. There's persistent hearsay that suggests Ferdinand Piech wanted to use the first-generation Audi five-cylinder engine in the 924. Rumour has it that the idea was rejected on the grounds of cost and a worry concerning the potential for over-reliance on the Volkswagen Group. Some also claim there was a plan to create a 4.6-litre V10 for the 928, effectively merging two of the Audi engines on a common crankshaft!







Above TIM gauges join an AEM wideband to keep track of what the forged engine up-front is getting up to

Right MOMO three-spoke steering wheel hints at the vastly increased performance of this Lux, power aided by a Bosch high-flow fuel pump, Siemens 630cc injectors and a DTA standalone ECU







CORNER-CARVING IS TAKEN CARE OF BY GAZ GOLD COILOVERS, A RE-INDEXED TORSION BAR AND FEDERAL 595 RS-R SEMI-SLICK TYRES

Thankfully, the engine was up and running without issue after all components were shoehorned into place. Now the focus of James' attention was his 944's ability to turn and stop! 986 Boxster calipers were trialled, but they left him with little confidence in their ability to slow 371 fine-voiced fillies. Subsequently, the newer Porsche parts were replaced with a custom big brake kit from Wigan-based motorsport parts manufacturer, Compbrake. Based around the 944's hubs, the six-pots are joined by meaty 330mm discs. The previously-installed Boxster anchors were then radially mounted at the rear.

Corner-carving, meanwhile, was taken care of by a set of GAZ Gold coilovers, a re-indexed torsion bar and Federal 595 RS-R semi-slick tyres with a 235 and 255 profile at the front and back respectively. The black circles are wrapped around Azev seventeen-inch alloys which were previously fitted to a modified 911. Staggered with a deep dish, the gloss black wheels measure a full ten-inches of width at the rear!

Of course, as the discerning Porsche owner knows only too well, it's no good having speed without style. To that end, James added to his collection of Deutsch Nine parts by buying the company's 924 Carrera GTS fixed headlight and fibreglass 924 side skirt package. As part of the fitting process, the car's wings and sills were thoroughly inspected, treated and welded wherever necessary.

Fresh metal demanded fresh paint. Taking a

step back to look at his work, the Kendal-dweller wondered just how he was going to colourmatch decades-old Hall Bronze Metallic. His answer was to take the appearance of the project in a completely different direction. "I looked at how much of the car required a fresh coat of colour. I quickly came to the conclusion that it would be less effort to apply a full respray!" he continues. "I fancied Signal Green, but was shocked at how expensive it was. Fortunately, a mate of mine works at Stagecoach and was able to send me a couple of tins of the paint used on the company's buses. It's called Mid Green and is a surprisingly close match to the Porsche paint."

He admits that tackling the respray himself without any prior experience of handling a paint gun might have been an error ("it was the first time I'd painted a car, and it shows!"). The finish isn't quite what he hoped for, but black Porsche stripes serve to draw the eye away from the odd blemish here and there. Besides, you can't see the paint when you're sat inside the car! What you can see is Pascha seats and door cards that replace tired brown leather. There's a rally-style MOMO steering wheel too, yet despite this motorsport-themed equipment, the car was built for use on the open road. "My modified 944 managed to achieve a 13.1 second quarter-mile at Kirkbride Airfield, but I'm most happy when hearing the noise generated by the Audi engine during spirited street use." And who can blame him? Four cylinders might be good, but in this instance, five is much better!

Above This mean, green fastroad machine regularly enjoys itself along the quarter-mile

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Porsche quits Le Mans prototype class



Shift to Formula E in 2019 marks the end of a very successful era

ollowing our report in last month's issue of *Ultimate Porsche* revealing Porsche's plans to quit the FIA's World Endurance Championship LMP1 class at the end of this season, the manufacturer confirmed our suspicions by announcing its intention to enter Formula E in 2019. The current Porsche LMP team will be tasked with operating the new Formula E programme.

Don't think this means an end to a Porsche presence at Le Mans. Factory bosses are keen to continue international GT racing. In addition to the works 911 RSR entries, a large number of Porsche customer cars race in France, with many more taking part in competitive motorsport around the globe. These racing teams will continue to be supported by Porsche, thereby ensuring the Stuttgart brand remains a force to be reckoned with on the grid.

Calling time on the 919 Hybrid project means that Toyota remains the only LMP1 participant. Regulations agreed between the FIA and ACO (Le Mans organisers, Automobile Club de l'Ouest) state



clearly that there must be at least two manufacturers competing in the class. Questions regarding Toyota's desire to continue its Le Mans Gazoo Racing programme already existed after a string of reliability issues saw the team's cars fail to finish in successive campaigns. Despite winning top honours three years on the bounce, reliability and massive development

costs have also plagued Porsche.
Additionally, Mercedes controversially announced its departure from DTM days before Porsche dropped its LMP bombshell. It seems that German manufacturers are rethinking their motorsport strategies, with rumours still rife that Porsche intends to become a supplier of engines to F1. Until that plan of action is confirmed, we'll have



to get used to the idea that the world's most successful manufacturer at Le Mans is about to enter a new era of racing, with technology and expertise ported to Formula E from the 919 Hybrid project. Reacting to the news, ACO representatives described Porsche's altered motorsport strategy as "abrupt, sudden and without careful consideration." Ouch.



Nurburgring at 90

This summer marks the Nürburgring's ninetieth birthday. The tree-flanked German racing circuit has played host to some of motorsport's most exhilarating episodes, many of them attracting attention for all the wrong reasons. Nevertheless, the venue's twists, turns and high-speed straights remain a benchmark for the testing of performance production cars. As if to prove the point, the new Porsche 911 GT3 recently scored a lap time of 7m12.7s,

continuing the Stuttgart concen's long history of success at what many regard as the ultimate automotive proving ground. Best of all, the Nürburgring remains open for public use most of the year, allowing you to test you driving abilities on the very same asphalt that has carried some of the greatest sports cars ever manufactured. Visit bit.ly/porschering for a calendar of events marking the legendary Green Hell's special birthday celebrations.



Porsche on parade at Goodwood

Porsche celebrated the global debut of the new 911 GT2 RS at the Goodwood Festival of Speed by sending some of its most iconic motorsport machines up the venue's hallowed hill climb course. Among the star drivers recruited for the weekend of fun was 1970 Le Mans winner (and *Ultimate Porsche* guest columnist), Richard Attwood, who drove the fire-breathing 935/78 'Moby Dick', much to the excitement of the masses gathered at the legendary West Sussex venue. Other highlights included the recently retired 919 Hybrid (complete with the layer of grime it attracted during its recent win at Le Mans). The Goodwood Festival of Speed is the biggest motoring event of its kind, attracting over 200,000 visitors over four days. Every realm of motoring is represented, be it race or road on two wheels or four. Visit bit.ly/goodwoodspeed

See you here...

CLASSICS AT THE CASTLE

Europe's largest gathering of Porsches returns to Hedingham Castle, Sunday 3rd September. Open to all motoring enthusiasts, the event will celebrate the fiftieth anniversary of the 911S, setting out fifty restored examples on the castle's entrance. A special exhibition of pre-1974 (KG-badged) Porsches will also be available for you to gawp at. Aside from the car show, the opportunity to explore the castle's grounds, banqueting hall and minstrel's gallery will also be on offer. Gates open at 10am. Pre-booking is essential - tickets will not be available on the gate. Visit bit.ly/hedingham

924s AT ROCKINGHAM Following our 'fly on the wall' feature shadowing the PDC Racing team at Cadwell Park for the **BRSCC Toyo Tires** Porsche Championship (grab your copy of the July edition of Ultimate Porsche at bit.ly/backissuesup), the team's drivers, Gavin Johnson Jason Wood, and class leader, Pip Hammond, join their rivals in the 924 class of the competition when it lands at Rockingham for three races as part of the BRSCC's Saloon & Sports Car Racing series across the weekend 16-17th September, Order your tickets at bit.ly/924tickets

WARREN CLASSIC SUPERCAR SHOW

An anticipated 125 rare and desirable classic cars will join a battalion of supercars at the Warren Classic and Supercar Show Sunday 24th September. Priceless Porsches will be available for you to coo over at this relaxed event. Info at bit.ly/warrencars



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Smuggler's box



Amsoil is the first oil brand to have produced synthetic oils, and now it's re-entering the UK aftermarket with a selected range of high performance engine oils, gear oils, additives and greases. The company is also bringing to market a special manual transmission fluid designed to protect and extend the life of your Porsche's gearbox while delivering slick and easy shifting. Outperforming conventional gearbox oils, Amsoil's offering is rated at between -40°F to 300°F, maximising energy efficiency and resisting the effects of heat, oxidation, sludge and varnish deposits.

of heat, oxidation, sludge and varnish deposits.

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Over the years, Amsoil has remained loyal to the principles of its founder, Al Amatuzio. As a jet fighter squadron commander, he relied on excellence, integrity and strong leadership to forge a decorated and respected military career. In the early 1960s, he used those same traits to guide his newly formed company.

His breakthrough came in 1972 when Amsoil 10W-40 synthetic motor oil became first lubricant of its kind to meet American Petroleum Institute service requirements. Outperforming conventional oils on all counts, Amsoil's product provided maximum performance for motorists. It also signalled a new age in lubrication science.

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The Essential Buyer's Guide PORSCHE 944

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911 WHEEL CLOCK

Watch time race by (groan!) with this official Porsche wheel clock. Made from an original 911 Turbo twenty-inch multi-spoke, this stunning timepiece weights approximately 8kg, so you'll have to be careful if mounting it on plastered drywall. Hands powdercoated red indicate the time of day, with a matching Porsche crest taking pride of place in the centre. The rim of the ten-spoke alloy acts as the dial. This is another inventive release from Porsche's celebrated Driver's Selection, a line not to be confused with the Porsche Design brand. From time to time (here we go again!), home furnishings made from genuine Porsche parts are made available in the collection, including this cool clock and a matching bookshelf that started life as a GT3 Cup rear wing!

Price: £1200
www.bit.ly/wheelclock

ADVAN A052 Tyre giant, Yokohama, has added a street-legal competition tyre to its range of performance products. The Advan A052 is available to order in sizes ranging from sixteen to eighteen-inches. As the successor to the popular Advan A048, the new tyre provides extraordinary levels of grip in both wet and dry conditions. The asymmetrical, high rigidity tread pattern has been developed from Yokohama's established tarmac rally range and features an all-new sport-oriented compound. Importantly, the Advan A052 is included in the MSA's 'Blue Book' approved motorsport tyre list. Yokohama's manufacturing standards are well known, and the company's efforts in developing the Avan A052 have resulted in a top quality tyre that delivers a favourable environmental performance, meeting Europe's rigorous rolling resistance and strict tyre noise regulations.





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Price: From £81.95

www.yuasa.co.uk



PORSCHE

BRIAN LONG



PLAYMOBIL GT3 CUP

With the Porsche 911 GT3 Cup in Playmobil format, young motorsport fans are a step closer to realising their dream of winning a race! Just like the real-life GT3 from Zuffenhausen, Playmobil's offering boasts innovative design, a height-adjustable rear spoiler and changeable tyres. A command centre, a dedicated mechanic and a winner's podium are also included PRICE: £34.93 www.bit.ly/playmobilgt3



MOTAMEC CORDLESS WRENCH

Packing a hefty 430lb/ft torque, Motamec's cordless impact wrench (half-inch drive) is powered by a lithium battery which retains its charge for long periods of time. Forward and reverse controls with an 'instant stop' brake are integrated into a sturdy housing, making this an ideal tool for the DIYer at home or those working at motorsport events. Supplied with a mains charger and carry case, this variable speed wrench features a battery condition LED. PRICE: £179 www.bit.ly/motamecwrench

RECOMMENDED READ PORSCHE 944

Veloce has re-released what many consider to be the definitive history of the internationally popular 944. Covering all variations of the model from 1982 to 1991, this 192 page tome features close to 200 full colour images (many supplied by Porsche) printed on high quality art paper, plus expert advice on buying and restoring what was the fastest-selling Porsche of all time. Written by acknowledged marque expert, Brian Long, the book covers a history of the manufacturer in the lead up to the design and development of the 944, as well an in-depth look at the model's forced induction variants. From drawing board to the arrival of the 968, this is the full story of an extraordinary supercar that's now well established as an affordable modern classic.

Price: www.bit.ly/944history



RENOVO CARPET REVIVER

Discoloured, matted-down and dirty carpets can make your classic Porsche look tired and neglected. Fortunately, car care product manufacturer, Renovo, has developed a carpet reviver designed to make even the greyest of blacks look as good as new. The firm's unique formulation not only cleans and re-colours black carpet, but it also protects with a UV inhibitor and an advanced anti-bacterial guard effective against superbugs. Simple to apply and capable of delivering outstanding results, Renovo carpet reviver is sold in 400ml spray bottles for a shade under fifteen guid.

Price: £14.95 www.bit.ly/renovocarpet



SMART POLISH WATERLESS WASH & WAX

According to the Met Office, Britain has experienced the driest first half-year in more than two decades, the third most parched since records began! Water companies are now warning of the possibility of a hosepipe ban as their reservoir levels drop much more than expected. One essential activity that may be affected by water restrictions is activity that may be affected by water restrictions is the cleaning of your classic Porsche. Thankfully, British start-up, Smart Polish, has developed a car care formula that allows you to achieve a showroom shine even when the taps stop running. The detailing outfit's teal-coloured Waterless Wash & Wax has been chemically engineered in the UK using a unique carnauba wax mixture. Quick and accounts apply this cast fixedly fluid contains an easy to apply, this eco-friendly fluid contains no nasty chemicals, meaning that gardens and nearby drains remain undisturbed. The product also comes in handy when you want to clean your car at shows. Simply keep a bottle in the boot!

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www.smartpolishpro.com









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f you're a fan of Porsches and a user of Instagram, then it's highly likely you'll have seen images of the car on these pages pop up on your social media feed. The spectacular Signal Orange wide-body is owned by Frank Cassidy, a collector of tuned air-cooled classics and a prolific poster of pictures. Be it his lock-up, country roads, racing circuits or show display stands, there's a photo of his neat 911 in each setting, demonstrating just how keen he is to seize every opportunity to sit behind his car's four-spoke leather-trimmed steering wheel.

His desire to enjoy so much seat time makes clear his passion for Porsche, but it also illustrates how useable his car is. Yes, it's a firebreather that wants to be driven in anger, but it's not the kind of 911 that punishes its occupants if they're sat inside its cabin for long periods of time. Credit for how compliant the car is goes to Canford Classics main man, Alan Drayson, and his talented team of Porschephiles.

"When it comes to race-ready road cars, many drivers think they want a stripped-out monster unlike anything they've owned before," muses the Dorset-based classic Porsche restoration specialist. "In reality, most people like to keep creature comforts, a degree of soundproofing, the ability to put their luggage somewhere safe," he says, acknowledging the benefit of achieving a good mix of involved fast-road driving and real-world practicality.

JUICY DETAILS

Frank's awesome orange road rocket strikes the balance perfectly, an attribute that has encouraged him to spend countless hours covering many miles with the pedal to the metal. He owns a more hardcore street-legal track weapon in the form of an 1974 911 RSR tribute (check it out in our next issue) for when he feels the need to shake the teeth out of his skull, but as we discovered when visiting his home in rural Oxfordshire, his fiancée refuses to step inside the Acid Yellow animal. She is, however, more than happy to spend time in his orange wide-arched wonder – further proof of how comfortable the car is, even when it's being asked to unleash all 310bhp from its 3.5-litre flat-six.

Wait! What?! 3.5-litres?! That's not what the badge on the back says! That's right. It might be difficult to believe, but the 911 you're looking at can be rightly described as a sleeper. Not that it started life with quite so much poke. "The car came to Canford Classics as a part-prepared SC shell that was being readied for a life as an RSR backdate," continues Alan. "It wasn't what you'd describe as 'rust free', but it came with wide wheel arches tacked onto the rear, reinforced roof webbing and a built engine," he recalls.

















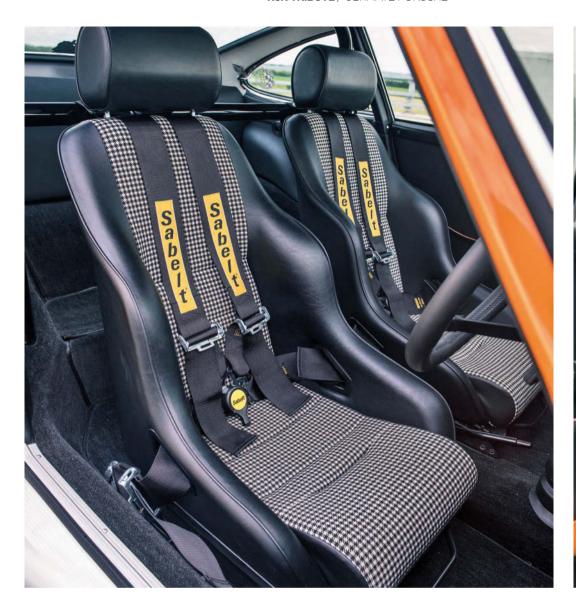
FRANK CASSIDY

First Porsche 1989 964 Carrera 4

Favourite Porsche Black Betty, my 1990 964 Carrera 4

Best thing about Porsche ownership The driving experience

Worst thing about Porsche ownership The cost of parts at main dealers can be eye-watering!





in time had another classic Porsche project on the go (a '68-plate 911), a build he wanted Alan to get involved with. A deal was struck that saw the SC taken as part payment for the restoration of the second car.

CITRUS FRESH

The once-red SC shell was promptly stripped and media blasted. Less than enamoured with the quality of metalwork he was subsequently presented with, Alan decided to clear all modifications already undertaken and start again. A new engine lid, bonnet, bumpers, inner wings, battery boxes, slam panel and door details were sourced, while all brightwork was restored and chrome items were re-plated. Each panel was painstakingly checked and gapped, with an attention to detail that was carried over to the car's mechanical components.

"While it's true to say that its flat-six had already been put together by the time it landed in the Canford Classics workshop, I was concerned that the engine had never been fired up. Additionally, a significant period of time had passed since assembly," says Alan. It made little sense to spend so much time preparing perfect bodywork only to install an untested engine, a train of thought that led a strip and rebuild of the twin-spark MFI-fed lump and the appointment of a fully rebuilt aluminium 915 gearbox with a reinforced side plate, a factory limited-slip differential, new gear linkages, a new pedal assembly and a fresh gearstick.

Likewise, the car's suspension was meticulously rebuilt using uprated parts, including all-new coilovers and upgraded antiroll bars which have helped to deliver massively enhanced road holding. Further trick chassis equipment can be detected when peeking through the car's giant re-finished five-spokes (fifteen-inchers measuring a giant eleven-inches at the rear and joined at the front by a genuine Fuchs spare wheel held in place by a leather tyre strap above a 110-litre long-range fuel tank); "phenomenal" stopping power is provided by Carbon 12, a company known

Right and above Comfortable cabin makes this race-ready RSR tribute totally useable as a tuned 911 capable of delivering just as much enjoyment at slow speeds as it does when all 310bhp is unleashed from rebuilt 3.5-itre flat-six







Three letters
Less than fifty Carrera
RSRs were built in
1973. Each car was
equipped with a
2.8-litre flat-six
producing close to
300bhp. Aero, wide
wheel arches, reduced
weight and brakes
borrowed from the 917
were fitted to each
example until 1974
when the RSR was
updated with a
three-litre engine. Built
with similarly low
volume production as
its predecessor, the '74
car produced even
more power. A Turbo
version came second
at the 24 Hours of Le
Mans in 1974, an
achievement that
encouraged Porsche to
invest heavily in forced
induction, resulting in
the 930 road car.

Social stream

If you're keen to find out more about Frank and his collection of air-cooled classics, then follow him on Instagram. You can find his profile at @blackbettyandco. He posts photos of his exciting adventures in Porscheland each day. Additionally, he recently founded the Porsche Owners UK Facebook group in the hope of bringing together like-minded folk for monthly meets. Check it out. Who knows? Perhaps you'll be able to meet "Memphis' in the metal in the not too distant future! For those of you stuck fast in your armchairs, fret not! We recently visited Frank's Porsche-filled lock-up and showcased the cars we were lucky enough to spend time with by giving them their own 'Porsche People' feature. You can order a back issue copy of the magazine by visiting the URL bit.ly/legendsoflemans



Above Frank's orange 911 looks fantastic from any angle!

for its line of big brake kits for classic 911s. The setup fitted to Frank's ride is the company's top-of-the-range offering supported by bespoke modifications, further proof of the no-compromise approach to building this eyepopping Porsche.

BEAR FRUIT

Clearly, the car wasn't left wanting for power, handling or style, but with all parties keen to end up with an RSR-fashioned 911 recognised for its comfort as much as its ability to plant useable power to the tarmac, work began on the car's interior.

"Most backdates make use of cheap, lightweight carpet that's quickly laid over the rear seating area and parcel shelf," sighs Alan. "In contrast, we trimmed an original 'salt and pepper' carpet complete with the correct sound deadening material. We also created and installed a full headlining, bespoke door cards, custom rear inside quarter panels and a new parcel shelf." The Canford Classics crew even added an under-bonnet carpet, allowing for the aforementioned safe storage of carry-on equipment when the car is on long journeys.

In place of oft-seen tie-down fasteners, cable pulls have been fitted front and rear to ensure security for stored bags and to stop prying eyes having an uninvited butcher's at what's generating such fantastic power. The engine itself is kept happy with all-new oil supply gear, including sill-mounted lubricant lines fabricated in-house by Alan and his talented team.

Complete with rebuilt gauges, all new wiring, sports seats, Sabelt safety harnesses and that striking coat of Signal Orange, Frank's 911 - now affectionately named 'Memphis' by its master - has become as much of a social media star as the man who drives it. "With this particular 911, form follows function," he tells us. I love the fact that the car isn't too 'in your face', even though it's obviously very eye-catching," he adds, pointing towards the black Carrera side stripes and rally-inspired Cibie spot lamps that seem to help generate a lofty number of 'likes' every time the car is seen online. "It's a 911 that I can get in and drive for long periods, which is why paint protection film now covers its front end!" he laughs.

If this spectacular Signal Orange stunner from Stuttgart has appeared in your social media feed, then you'll undoubtedly have been just as amazed as us by the quality of car Canford Classics has created. What's less easy to identify is a specific feature that makes this errorless 911 so special; ordinarily, a modified motor is recognised for a single key characteristic, such as outlandish bodywork, wicked wheels or a crazy colour. Bucking the trend, Frank's four-wheeled friend is the complete Porsche. You might argue that the execution is subtle; no one feature stands out above all others, making his deliciously zesty 911 the perfect blend of well-considered, perfectly-executed styling, performance and comfort wrapped up in a powerful Porsche package. We love it!

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Torque Specialist



Andrew Mearns

The 944 is an over-engineered and underrated supercar, making it one of the best buys in Porsche's back catalogue, suggests Gmund Cars boss, Andrew Mearns...

've spent the best part of thirty years restoring and selling classic Porsches. During that time, I've found myself admiring how well engineered the 944 is. In stock form, it's a fantastic-looking car that performs well with virtually bulletproof mechanical equipment. In fact, I'm such a fan of the 944 that in addition to offering various incarnations of the model in the Gmund Cars showroom, I have three 944s in my personal collection!

I still own the first example I bought. It's a 1985 S with manual transmission. Importantly, the car features power steering, an option that makes light work of cruising and manoeuvring. Having covered only 39k miles, the Kalahari Beige beauty is in excellent condition, as evidenced by the silverware it won in a concours competition not long after I became the registered keeper. That was five years ago, and I continue to be excited about the car today.

Porsche engineers designed and built the 944 as though they were assembling a battleship; where tales of 996 and 997 owners having to deal with scored cylinder bores and cracked liners are commonplace, you'll find it hard to locate a 944 owner who can tell you that his or her car's engine has caused them grief. Porsche created a thoroughly reliable sports car with the 944, adding to the brilliance of the model by using high-quality materials for its cabin furniture. I'm a big fan, as proved by my desire to obtain a late 944 Turbo.

The car I ended up buying was offered for sale at the Historics at Brooklands auction. An immaculate example with full black leather interior and 'Turbo' script displayed along its offside front wing, the low-mileage minter came with a history file three-inches thick! A life spent in a heated garage ensured its bodywork remained in excellent condition, while detailing and colour correction revitalised impressive Guards Red paintwork.

A bidding war ensued. I won, resulting in a bill for more than twenty grand. People were astonished that a 944 could fetch such a huge sum! I've since turned down offers of more than



half as much again for the same car. That's not to say you have to splash a large amount of cash in order to buy a good 944, but it does go to show that appreciation for the model is on the up.

If you have between five and six grand at your disposal, there's no reason why you shouldn't be able to get hold of a well-kept 944 boasting low mileage. To put that into perspective, a similarly-aged VW Golf GTi in the same condition will cost more than double. The 944 is a far superior vehicle. You'll need to move fast, though. Demand is high, as I know only too well through the increasing number of interested parties that arrive at the Gmund Cars showroom looking for a 944 to take home with them.

The most desirable examples of any iconic sports car tend to be the earliest and last of the model produced. In my opinion, this is true of the 944. Buy wisely, and you'll be rewarded with a fast, brilliantly built Porsche that will keep you happy for many years to come. It needn't break the bank, and it'll most likely increase in value. What's not to love?!

Above The 944's under-bonnet equipment rarely gives any cause for concern

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There's no reason why you shouldn't be able to get hold of a well-kept 944 boasting low mileage





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Torque Racer



Rebecca Jackson

In just five years, Rebecca Jackson went from racing a 924 in the BRSCC Porsche Driver's Championship to competing at Circuit de la Sarthe in a Ligier JS P3...



fter witnessing the spectacle of Le Mans first-hand, I knew that I wanted to drive in what is the world's oldest endurance motorsport competition. A colleague told me, however, that if I wanted to attack the

asphalt at Circuit de le Sarthe, then I'd have to master rear-wheel drive. With that in mind, and with no prior competition experience, I bought a 35-year-old 924 and went racing in the 2011 BRSCC Porsche Driver's Championship.

After a tricky start, I finished the season eighth out of sixteen on the grid. The following year, more comfortable in my trusty transaxle, I bagged five podiums and finished fourth out of twenty in the same competition. Better still, in adverse weather, I achieved my first race win at a drenched Snetterton Circuit.

At season end, I parted with my 924 and bought a standard 986 S in order to make a step up to the championship's Production Boxster class. This move highlights just how great racing Porsches can be for anyone who wants to progress through the ranks of competitive motorsport; through various well established racing series, it's possible to follow a path from Porsche club racing all the way to Le Mans. This is the journey I decided to embark on, a three-year plan of action that became known as 'Project Le Mans'.

Cap in hand, I traipsed around various motorsport trade shows trying to attract sponsorship and car parts in order to help me prepare my Boxster for battle. My efforts paid off; I was lucky enough to secure fifteen grand's worth of safety kit at the 2013 Autosport International Show, equipment that enabled me to convert my car into a machine ready for racing. Subsequently, I won my class by a significant margin.

In 2014, I competed in longer races with the 750 Motor Club's Cartek Roadsports Endurance Series. The competition offers participants a great deal of freedom in tuning their vehicles, whilst providing a framework that ensures



racing remains cost effective. I had great fun, although I'll admit that my participation in the year's Birkett 6 Hour Relay at Silverstone was more satisfying. My dad competed in the same race when I was a baby, and the Towcester track is where I took the test for my race license. The Birkett bash was, therefore, a special occasion for me, and I was delighted when my team took a deserved class win.

For 2015, the Boxster (which I still own) was put to one side in favour of a drive in the Bute Motorsport GT Cup from behind the wheel of a 450bhp factory-built ex-Carrera Cup 997. It was a brute, but proved my theory that rapidly climbing the motorsport ladder through racing Porsches was perfectly achievable. My reputation as a 'safe pair of hands' was galvanised with my ability to get the best out of the 997, a feat that saw me unexpectedly selected to compete in the European GT Series in a KTM X-Bow, a prototype-style car loaded with aero and a carbon-fibre monocoque chassis. This was a huge step forward for my goal to compete at Le Mans, and one that enabled me to finish third in the Reiter Young Stars Championship.

I didn't ever dream of racing LMP, but my time in the X-Bow equipped me with the experience needed to prepare for 2016's highly anticipated Road to Le Mans (a support race taking place on the same day as the main endurance race) in a Ligier JS P3, an LMP3 car similar in design to LMP1 racers. In just five years, I'd gone from racing 924s to competing at Le Mans. Proof that even the cheapest of competition Porsches can help ambitious drivers achieve their motorsport dreams.

Above Rebecca had her sights set on GT racing at Le Mans, but her hard work and persistence saw an unexpected shift in her plan, resulting in an LMP3 drive in 2016

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Even the cheapest of competition Porsches can help ambitious drivers achieve their motorsport dreams



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Porsche people

t's not unusual for us to find out from a petrolhead that his or her love of a particular make or model of car stems from a poster they pinned to their bedroom wall when they were a kid. In the case of Porsche obsessive, Nash Hunter, pictures of the 944 decorated his chamber at a time when many of his classmates were cooing over photos of fast Fords. Blue Ovals didn't hold much appeal for the youngster from Dorset, however, due to the fact that he was surrounded by them on a daily basis. "My dad was always modifying or restoring Fords," recalls Nash with a smile. "Constant exposure to the various Escorts, Zephyrs, Zodiacs and whatever else he was working on made Dagenham delights seem ordinary to me. In contrast, I was in awe of the exotic styling of the 944, a car that I first got hold of in die-cast model form before starting my Banbury-based 944 restoration business, Retro Restorer (www.retrorestorer.co.uk), decades later!"

In what sounds to us very much like a case of history repeating, Nash's sons, Anthony and Jamie, are constantly exposed to the 944s that their father maintains for his customers, leading the lads to regard the transaxle as a 'regular' ride ("they drool over Ferraris"). Be that as it may, ensuring that as many 944s as possible stay on the UK's roads is a definitely a Hunter family affair. "The team that work at Retro Restorer includes my wife, Louise, who manages our paint shop," explains Nash. The couple's shared







Facing page 924 S with automatic transmission lived a hard life in the hands of Retro Restorer's customers



passion for Porsche goes a long way towards explaining why so many 944 owners travel considerable distance to visit Retro Restorer, a company widely regarded as being the number one destination for 944 servicing and restoration work. To that end, it's reassuring to know that Nash practices what he preaches, as evidenced by his own collection of transaxles.

"It started with my first Porsche, a 1983 944 Lux that I bought twenty years ago," he tells us. It remains in his possession to this day, and became the catalyst for his decision to establish Retro Restorer. "I spent a lot of time bringing the car up to high mechanical and cosmetic condition. I drove it to many shows where it attracted the attention of fellow 944 owners. Many of them asked me to carry out jobs on their cars. Before I knew it, my driveway was full of other people's Porsches!"





HE'S NOT SHY OF BUYING CUSTOMER CARS IN ORDER TO ADD TO HIS OWN STOCKPILE OF STUTTGART SPORTS METAL





Special edition

Contrary to popular belief, the 625-only Turbo Cabriolet isn't the absolute 944 holy grail. February 1992 saw the UKDM 944 S2 SE get the go-ahead from Stuttgart. Fitted with a 31mm front anti-roll bar and sitting 30mm lower to the ground thanks to Turbo springs and an adjustable Koni damper kit, the car produced 225bhp as a consequence of being blessed with a factory sports exhaust and a chipped ECU. Cosmetic upgrades included a rear wing, SE decals and a colour-coded steering wheel.

Improved cornering and sharper handling saw the S2 SE (limited to just fifteen units) become the inspiration for the 968 Clubsport. Porsche specialist, Rennsport, currently has a restored SE for sale. It's priced at £50kl.















NASH HUNTER

First Porsche A 1983 944 Lux

Favourite Porsche Square-dash 944

Best thing about the 944 range Excellent engineering, balance and handling

Worst thing about the 944 range I don't like the look of side panel bump strips



Quitting his job in the IT industry

(after studying chemistry at university), he secured a workshop and began to restore 944s on a full-time basis. The business expanded at a rapid pace, leading some of Retro Restorer's clients to ask Nash if he could help sell their cars. Of course, he's only too happy to oblige, although as we found out during our recent visit to his place of work, he's not shy of satisfying such requests by buying customer cars in order to add to his own stockpile of Stuttgart sports metal. As if to prove the point, he proudly presents us with FUV 544V, the two-tone 924 Turbo he acquired from a loyal buyer of his services.



PASCHA PASSION

"I've owned the Turbo for almost three years. Prior to my name appearing on its logbook, it had been in the possession of one owner from new," reveals Nash. Brown pascha trim looks great alongside green exterior paintwork. In fact, this 924 is in such good order that it's difficult to believe that it has covered more than 126k miles. "The interior was overhauled by my team a short while ago, as was the suspension, transmission and engine. It's a special car that drives brilliantly, and it's one I intend to keep for many years to come," he says.

There's more than one 924 in the Hunter Porsche portfolio. PDZ 8650 is a 924 S with automatic transmission. Many actively look for manual 'boxes when seeking out their next sports car, but Nash reckons the lazy characteristics of his S – a car powered by a 2.5-litre engine – make it an easy drive not too dissimilar from that of a GT cruiser. It was also a car he thought would be safe in the hands of his customers.

Facing page Red 928 S2 is being readied for the road to Romania before Brexit kicks in

This page Lightly-restored 944 S serves as Nash's daily driver and provides comfort in the form of burgundy velour seats



Porsche people

"I bought my 924 S after seeing it advertised on eBay," he tells us. "The car was in terrible condition. Its sills were rotten, but I liked the idea of being able to give clients an automatic as a Retro Restorer courtesy car."

Essential remedial work followed the S's arrival at Nash's workshop, resulting in the transaxle barely recognisable as the same vehicle that had been offered online. Reasoning that there was little chance of his customers being able to misuse a 924 equipped with transmission that does the thinking for them, he soon put the narrow-body into service in its new role. It didn't take long for the car to limp its way home.

"I don't fully understand how my 924 S has been crashed on three separate occasions by drivers who pride themselves on taking good care of their Porsches!" he laughs. Needless to say, after another rebuild, the nifty 924 has been spared any further punishment by being used exclusively by the Hunters.

POWER TRIP

Of all the transaxles we saw outside the Retro Restorer workshop, the car that looks as though it has led a harder life than the 924 S is the 928 S2 work-in-progress Nash is preparing for a forthcoming European road trip. "A Romanian friend of mine living in the UK wants to drive a car to his home country before what he sees as Brexit's closing of borders. I'm preparing the 928 for the journey. I bought the car as a nonrunner. Its 4.7-litre engine now starts, runs and stops as the manufacturer intended, although I have a lot of work to do on the bodywork and interior," he says. The GT's electrics were also in need of attention, but with a new coat of Guards Red planned for the not too distant future, this V8 hero will soon be back to its best.

F157 EMW is Nash's daily driver, a white 944 S filled with a burgundy velour interior. Like many 944s of a similar age, the car has been treated to new sills and a light restoration to ensure it performs faultlessly as a useable everyday classic. It's another example of a Retro Restorer customer car that found its way into Nash's possession, and despite the fact that its original wheels are long gone, it's a great example of a pre-facelift 944 that sees plenty of the nation's highways.

Spending much of its life away from the road is D338 KDE, the Hunter family's track toy. Taking the form of a Guards Red 924 kittedout with Sparco colour-coded bucket seats, TRS safety harnesses, a full roll cage, Teledial wheels, a custom exhaust, standalone engine management, uprated suspension and brakes, Lexan polycarbonate windows and











Left 924 track weapon is stuffed full of tuning gear that helped it to compete in various motorsport competitions







Porsche people







Toyo Proxes street-legal track rubber, the car has participated in various endurance racing series, not to mention competitions organised by the 750 Motor Club.

The S-badged bruiser was owned by (yep, you guessed it) a Retro Restorer customer who lives close to Silverstone. "He took an interest in the 944 Turbo I owned. We struck a deal that saw me keep hold of his race car. In return, he drove home in my Turbo!" explains Nash.

STRANGE ATTRACTION

Less straightforward than swapping cars is the work involved in sorting F279 PPG, a 944 bought as a rolling restoration. One of its sills is a different colour to the other, Boxster leather inhabits the car's cabin and various other non-standard items can be detected after eyeballing the white wonder. Nash was attracted to it due to its 2.7-litre engine, a limited-run unit he considers to be the best of the eight-valvers due to its linear torque curve and increased number of ponies when compared to earlier 2.5-litre 944 powerplants.

The car landed at Retro Restorer when one of its customers (*quelle surprise!*) thought he'd bagged an eBay bargain before wheeling it into his local Porsche Centre for a quote covering a thorough restoration. Immediately determining that he'd bitten off way more than he could chew, he popped over to Nash's place and asked if our man wanted to get stuck into another project. "It's one I intend to keep for the long term. I like the 2.7 engine, and this 944 has the potential to be a really good car," he grins.

Above Nash places special sentimental value on this Guards Red 16-valve 944 S, a car previously owned by a loval Retro Restorer customer

The last car we spend time with during our jaunt to Oxfordshire is YJI 8107, a 944 S powered by 2.5-litres of displacement topped by a cylinder head housing sixteen-valves. It's a low mileage car and was owned by one of Retro Restorer's oldest customers prior to his recent death. Afraid that the pretty Porsche would end up in the hands of someone who might not treat it in the way that it has become accustomed to, the family of the deceased asked Nash if he could help take care of the gorgeous Guards Red speed machine. "The car played a big part in the chap's life, so much so that I was asked to drive it as part of his funeral procession," he says.

Plans are already being drawn up to restore the 1986 example to its original condition, a project Nash says has special sentimental value. "Most of my customers have been with me for many years, and the owner of this 944 was one of the earliest to put his prized possession in my keep. It seems fitting to pay tribute to his trust in me by continuing to take good care of the Porsche he loved so much."

Now that 944 prices are on the rise, an ever-increasing number of owners are doing what they can to keep their cars on the road. Long gone are the days where a knackered clutch would be reason enough to strip a 944 before sending it to the great scrapyard in the sky! Today, healthy restoration budgets and enthusiasts who wish to observe proper maintenance schedules are ensuring the 944's future looks very strong indeed. And with Nash on hand to help, this modern classic is set for another thirty-five years of fast-road fun.



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1970 911 2.2E LHD

Delivery mileage since complete rebuild, Tangerine Orange with leatherette interior, immaculate throughout, originally supplied in Switzerland but fully registered in UK.

Porsche Centre Hatfield 01707 277 911



£145,000 1976 911 2.7S LHD

18,705 miles, PTS Blue with Black interior, specification includes 15-inch Fuchs alloy wheels, electric windows and sunroof, UK registered.

Porsche Centre Hatfield 01707 277 911



£85,000 1986 928 S2

65,879 miles, Crystal Green Metallic, one owner from new. Restored by Porsche Centre Hatfield and M&A Coachworks as part of the Porsche Classic Restoration Competition.

£72,000

Porsche Centre Hatfield 01707 277 911





This month, we take a look at camshafts and what they do, plus we help you to ensure you buy the right parts for your Porsche

For the duration





hen it comes to increasing engine power, changing camshafts should be close to the

top of your list of things to do. With a few relatively minor adjustments to your Porsche's cam profile, you can wield a massive influence over its powerplant's performance characteristics. Whether you're on the hunt for more power at maximum revs, or if you simply need more low-down grunt, installing uprated camshafts can help to produce the desired results. Get it wrong, however, and you can inflict hardship on your car's engine, resulting in dire consequences when it comes to its ability to perform at its best.

WHAT IS A CAMSHAFT?

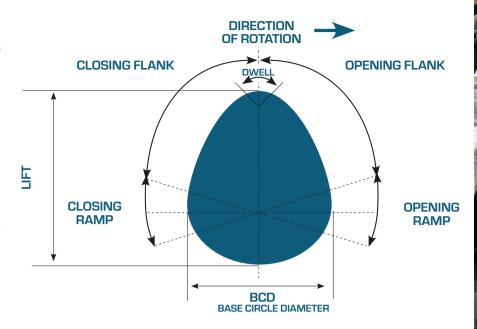
A camshaft's job is to control the important air/fuel mixture that enters an engine's cylinders. Camshafts also regulates the amount of exhaust gases that exit the cylinder, and the speed at which they travel in and out of the cylinder. As such, a camshaft can massively affect an engine's operating behaviour,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

LIFT

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

FLANK

A camshaft's 'flank' is its lifting edge. Its job is to rapidly open and close its corresponding valve. This is one of the most important parts of the camshaft profile in terms of design. It must accelerate and decelerate the valve within the working limits of the valve spring, which is why it's crucial to use the correct valve springs for the camshafts you've chosen and the



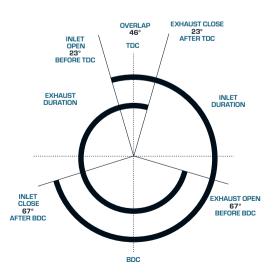
To time the camshaft correctly, the point at which 'true full lift' is experienced must be carefully observed

engine power output you're trying to achieve. If the flank is too aggressive for the application, you run the risk of encountering 'valve float' (where the valve does not properly follow the closure phase of the cam profile) or 'coil bind' (where a valve spring's coils stack solid at or before full lift), both of which are bad news for engine performance and reliability.

DWELL

All camshaft designs feature 'dwell'.
This is the point of camshaft rotation

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



OVERLAP

'Overlap' is the period when both the inlet and exhaust valves are open at the same time. Long overlap usually occurs when cams with long duration (see boxout on facing page) are installed. The valves remain open for a lengthier period than normal, meaning that overlap time will also be increased.

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

comes to boosting the performance of your classic Porsche. For example, having an overlap as the exhaust valve closes and the inlet valve opens helps increase the speed of the air/fuel mixture entering the cylinder. As the exhaust gases are forced out of the cylinder, the movement helps draw intake air into the cylinder. Unfortunately, this isn't very good as far as emissions testing is concerned because some of the unburned mixture will be forced directly out of the exhaust, thereby increasing hydrocarbon output. You'll find that cams with a shorter overlap will produce more torque and peak power than those with a longer overlap, although cams with greater overlap tend to produce more power higher up the rev range.



TIMING

No matter what camshafts you use, setting timing correctly is essential. When we talk about cam timing, we're referring to the position of the camshaft in relation to the position of the crankshaft. Cylinder head valves need to open and close at precisely the right time to achieve their best performance. Setting the correct timing is crucial for reliability and performance.

On modern cars, you may gain as much as 20bhp simply by altering cam timing, and that's without having to switch to alternative camshafts! In their OEM fitment, factory cams are timed to meet commonly adopted emissions requirements, but by simply adjusting timing, you can change your pride and joy's engine characteristics to trade lower

emissions for more power and torque. A set of adjustable cam pulleys allows cam timing changes to be made. The pulleys enable rotation of the cam while the crank remains motionless.

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



DURATION

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

The trade-off for a longer duration is an increased period of overlap (when both inlet and exhaust valves are open at the same time). In some cases, this can cause lumpy idle and poor performance at low rpm. These unwanted operating conditions mean that cams with long duration are usually reserved for race engines, where maximum power is needed at the top of end of the rev range. In these applications, the positives outweigh the negatives, primarily because race engines are pushed to the limit and spend most of their time at full chat.

It's worth noting that due to today's strict emissions controls, newer engines with fuel injection and electronic ignition systems tend to include cams that boast more lift and less duration. In contrast, tuning of older vehicles tends to involve cams with longer duration and less lift!



VALVE SPRINGS

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

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

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



NATURALLY ASPIRATED vs FORCED INDUCTION

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

With a naturally-aspirated engine, you want to encourage the flow of as much intake air as possible. Longer duration and the resulting increased overlap help to achieve this. With forced induction, the opposite is true; you don't need to worry so much about encouraging air into the cylinder on a turbocharged engine due to the fact that it is already being forced in by the nearby snail-shaped bhp booster! Even so, you don't want any of the exhaust gases to slow the speed of intake air as

a consequence of escape through the inlet tract; therefore, most turbo camshafts feature a shorter duration and a resulting shorter overlap than naturally-aspirated equivalent parts.

Forced induction cams are designed to work in conjunction with a turbocharger when full boost is reached. There's no point in having a set of cams designed to rev at 9000rpm and make peak power at 8500rpm if your car's turbo runs out of puff at 5000rpm! Conversely, there's no point in having a set of cams that will make peak power and peak torque early on in the rev range if you have a massive turbo fitted which doesn't start producing boost until 4500rpm!

Think carefully before shelling out.

LOW-FRICTION COATING

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

MULTI-PROFILE CAMS

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

BILLET CAMS

Most camshafts are produced from chill-cast iron. This process involves casting the blanks in a rough camshaft-like shape. meaning the cam profiles and bearings are ground onto the cast lobes. This is by far the most cost-effective method of producing camshafts in large volume, which is why almost all factory and mass-produced aftermarket performance camshafts are made in this way. For one-offs and high-end motorsport applications, however. camshafts are often made from steel billet. The result is a much stronger, hardwearing part.

Billet camshafts are megastrong because they're made from a single piece of billet steel. Starting out as a round bar, the material is then turned down to the required size to suit the expected bearings and fixings. Cam lobes are left circular to begin with, before being ground into a shape on a computercontrolled stone grind wheel. Each camshaft is then heattreated and case-hardened to prevent wear.

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

Billet camshafts are best suited to high-revving applications, but the expense involved in producing them means they're usually only foune in punishing motorsport environments.



CONTACTS

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t's the middle of summer, otherwise known as the perfect time of year to enjoy the drop-top you keep tucked away for months on end until that big vellow thing in the sky comes out to play. A winter in hibernation means that your open-topped joy toy is a tad dusty, but that's no bother. Cleaning your car is all part of the fun, right?! You might as well spend the entire day detailing your pride and joy, ridding it of every particle of nonexistent dirt that you perceive to have gathered while your car has been in what most people would call 'storage'. Then, after you've exhausted every last microfibre your polishing cloth has to offer, you can don your sunnies, wheel your pristine Porsche out into the open and take to the road with the roof down. Bliss!

Well, you'd be able to exactly that if it wasn't pissing down with rain. Yep, while Donald Trump and Kim Jong-Un's willie waving contest threatens to end the world as we know it, the UK has suffered what is surely going to be

referred to as the wettest few weeks on record. It certainly feels that way, with torrential rain, flooding and dark skies causing custodians of cabriolets to waste a month's worth of road tax by forcing them to keep their cars indoors.

Small pockets of the country have been lucky enough to experience a few hours of sunshine during the past few weeks, although we wouldn't like to hazard a guess regarding the concentration of rag-top owners that have been able to take full advantage of driving in the dry. What we can say, however, is that being able to do so is a motoring experience like no other.

Unlike fans of the output generated by many other car makers, Porsche enthusiasts are lucky enough to be able to choose an *al fresco* version of pretty much every model the boys in Stuttgart have produced over the years. And if you're a fan of turbocharged classics, then the 930 (Porsche's internal designation for the 911 Turbo) Cabriolet is up there with the very best roofless rides the world has to offer.

Above If you like what you see, then it's a good job this Baltic Blue Metallic 930 Cabriolet is available to buy direct from classic Porsche sales specialist, Gmund Cars (gmundcars.com)



With DNA that can be traced to the race track, the 930 Cabriolet delivers the exhilarating acceleration, cornering and grip that its hard-topped sibling is famous for. 3.3-litres of flat-six fury chuck out 300bhp, bags of torque, a 0-60mph sprint in less than five seconds, and in the case of 1989 models, a five-speed G50 gearbox and limited-slip differential that greatly enhance seat time.

TRUE BLUE

The car you see on the pages before you is one of very few 930 Cabriolets registered in the UK back in 1989. Shimmering Baltic Blue Metallic paintwork, Marine Blue electrically adjustable heated leather sports seats, a matching roof and air-conditioning make it an absolute peach of car, one that has spent its entire life as a 'weekender'. It's this role that explains the low mileage, although if rainfall since our last issue is anything to go by, then perhaps not being able to come out to play as often as its previous

owners would have liked is also a contributing factor?! Regardless, we were thrilled to have been spared being drenched for just long enough to have some four-wheeled, open-top fun during a recent visit to Gmund Cars, the Knaresborough-located classic Porsche sales and restoration specialist currently offering this very 930 Cabriolet for sale.

Few would contradict anyone who suggests the 911 Turbo is an iconic supercar. Along with the Lamborghini Countach, the Ferrari F40, the Lotus Esprit Turbo and the DeLorean DMC-12, the 930 was a Porsche that became a pin-up during an exciting era of automotive development. The model proved popular throughout its lifespan (21,589 units were sold between 1975 and 1989), and is arguably even more desirable today, as indicated by investors frothing at the mouth as they attempt to put their cash in places that banks can't currently compete with. Fortunately, 911 Turbos are too numerous to hit the kind of lofty

Nose job

Porsche offered its famous Flachbau (flat nose) 930 through its special order program in 1981. Essentially a 935-style nose in place of the normal 911 front end, each 911 Turbo Flachbau was specially modified by hand, a process that involved remodelling front wings to allow for new pop-up headlights and a deep front bumper. The price of a factory Flachbau was so high that very few were produced, leading a number of aftermarket companies to offer a replica kit for sale. 948 Flachbaus were built, most of which were fitted with the 330bhp version of the flat-six.



Older model

Older model
Porsche discontinued the 930 as soon as the G Series 911 platform was replaced by the 964. Late 930s were the first 911 Turbos to feature the Getrag G50 five-speed transmission, a gearbox offered in the Carrera since 1987. The 930's successor officially arrived with the launch of the 964 Turbo, a car that inherited the 930's 3.3-litre flat-six. A last-run 930 became available to mark the end of 911 Turbo production. Given the name 'LE' (Limited Edition), the car is widely considered to be the most collectible 930 of them all. We featured an LE buying guide in our last issue!











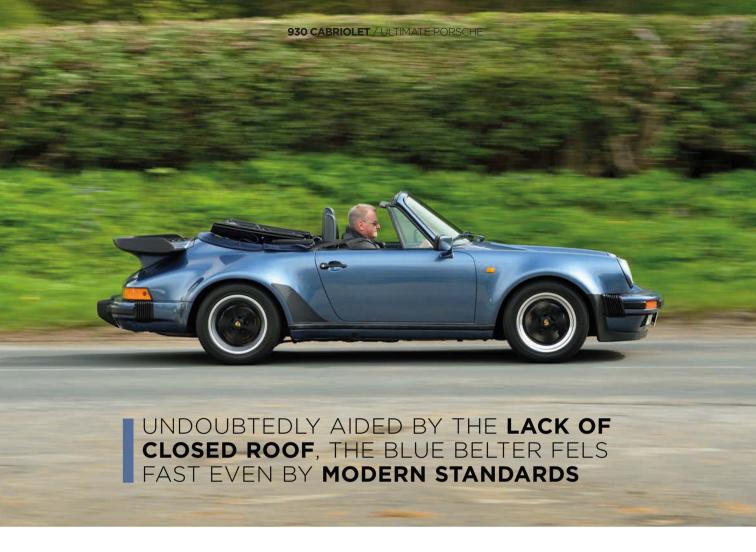
30MPH CAN FEEL LIKE 300MPH WHEN YOU'RE NOT SURROUNDED BY THE TRAPPINGS OF PROTECTIVE METAL (OR CARBON-FIBRE IF YOU'RE POSH)

purchase prices commanded by motors from Maranello (famous last words?!), but that doesn't mean the Porsche comes cheap. This rare 930 Cabriolet, for example, is on sale for a shade under £125k. The AFN-supplied stunner's gorgeous combination of Fuchs wheels, understated blue bodywork, luxurious interior, effortless performance and typical-of-the-era whale tail certainly do much to justify the price tag, but it's when the electrically-operated hood retracts that the car's true value is realised.

Those of you who have had the pleasure of fun on two wheels will know that 30mph can feel like 300mph when you're not surrounded by the trappings of protective metal (carbonfibre if you're posh). We're not suggesting that

Above and facing page In many sports cars, blue upholstery looks dated, but the 930 manages to pull it off, helped in part by lashings of satisfying deep pile carpet and plush leather bum-warmers the 'night and day' effect is quite so pronounced when comparing the drive of a 911 Turbo coupé to that of a Cabriolet, but there's certainly a lot to be said for how much quicker the drop-top feels when tackling the twisties of the rural North Yorkshire roads we found ourselves on. The car's chassis is rigid, with little body roll experienced where other open-topped sports cars demonstrate flex (often corrected by the appointment of polybushes and other uprated suspension equipment).

Sharp blips of the throttle as we move the car's short shifter between gears results in the flat-six doing its best to push us forward while we smile at the era-defining lag (not a lot happens below 3000rpm) that so many



complained about before the linear delivery of power produced by modern forced induction gear had the very same motorists reminiscing about how turbocharged cars felt more 'organic' back in the good ol' days.

Of course, 'roof down' means the glorious flat-six noise emanating from the back of the car fills our ears as we press on down the road, revhappy with turbulent air battering our barnets as we gain speed.

FAST AND HARD

Get the car past the 4000rpm mark and it really comes into its own. Undoubtedly aided by the lack of closed roof, the blue belter feels fast even by modern standards. Acceleration awakens, forcing the back end to squat, encouraging wide rubber to increase traction as it does so. This is a Porsche that feels remarkably planted. We feel in complete control thanks to the nearperfect positioning of the chunky steering wheel and pedals. And then the local wildlife comes out to play. Stomping on the brakes delivers a surprisingly swift halt. It's not the 'stop on a sixpence' effect delivered by the anchors bolted to modern Porsches, but it's far superior to what we know similarly celebrated sports cars originally on sale at the same time as the 911 Turbo are capable of. We comfortably avoid clattering whatever breed of deer cuts across our



Guards Red when we hand the car and its keys back to the Gmund guys.

Our time behind the wheel of this cool

path, ensuring that Baltic Blue doesn't resemble

Our time behind the wheel of this cool Cabriolet comes to an end just as clouds form overhead. We watch the turbocharged classic being positioned alongside the other rare Porsches currently packed into the Gmund Cars showroom. We can only hope that whoever buys this utterly gorgeous cabby plans to make use of it. This is a 911 that deserves to engage in regular bouts of fun in the sun. Y'know, providing the rain stops long enough for it to do so!

Above Barely used luggage area looks comfy enough to accommodate a roadside nap!



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1991 Porsche 944 S2 Cabriolet, White with blue hood and leather, 74k miles, very good order, £16,495



1994 Porsche 968 Cabriolet, Cobalt Blue with Grey leather, Cup alloys, £18,495



1989 Porsche 944 2.7 LUX, white w/blue plaid interior, 60k miles, as new condition, £18,995



1989 Porsche 911 3.3 Turbo Cabrialet, Baltic Blue, w/blue, 5 speed, 60k miles, as new, £119,995



1970 Porsche 911 T 2.2, Black with Black interior, fully rebuilt and in pristine order, £79,995



1973 Porsche 911 Carrera 2.7 RS, 3 cars available, please email or call for info, £POA



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Porsche Tractors, always around 10 in stock, mostly restored, most models, see website, £POA



1978 Porsche 911 SC, two in a prep, a Targa and a Coupe, call for details, £POA



1980 Porsche 930 3.3 Turbo Coupe, white, 78k miles, just had engine re-build, history, £89,995



1965 Porsche 911 Coupe, Ihd, Irish Green, UK registered, call for details, £POA



1996 Porsche 993 Turbo 4, Black/Black, good history, standard car, high spec, UK rhd, £139,995



1987 Porsche 924 S Le Mans, 1 of 37 made in white, UK car, 71k miles, full history, £9,995

What it takes to turbocharge a Porsche, including the turbocharger.

The theory that a whole is greater than the sum of its parts did not originate with Professor Porsche.

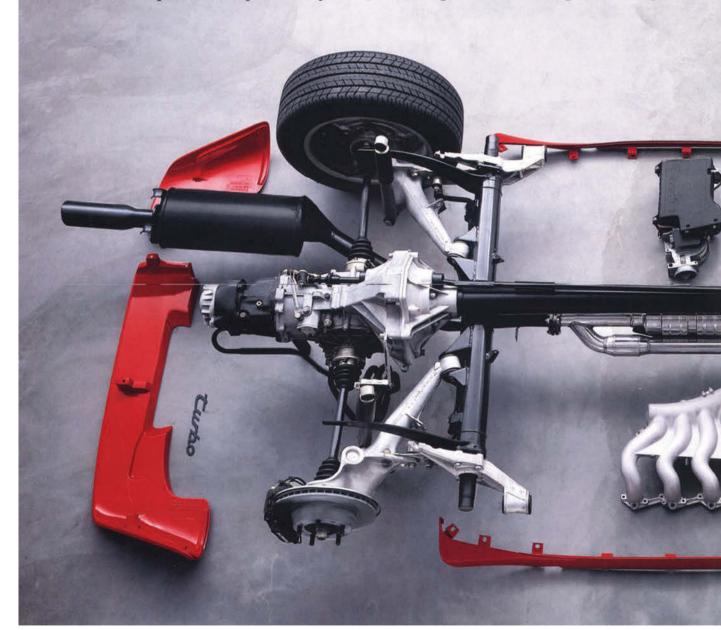
But he, for one, wholeheartedly subscribes to it.

Because if he's learned anything in four decades of building cars, it's that a change in one component can profoundly affect

the performance of the others. And ultimately, the performance of the whole car.

Nowhere is this truth more evident than in the area of turbocharging.

Porsche pioneered this technology for production cars back in 1975. And realized right from the start that simply bolting on a turbocharger, tweaking the



engine a little and re-naming the car was the wrong way to go about it.

The right way is revealed below.

Every component shown here was deemed necessary to transform a normally aspirated 944 into a turbocharged 944.

Major engine components, more than 30 in all, to compensate for increased internal loads and heat.

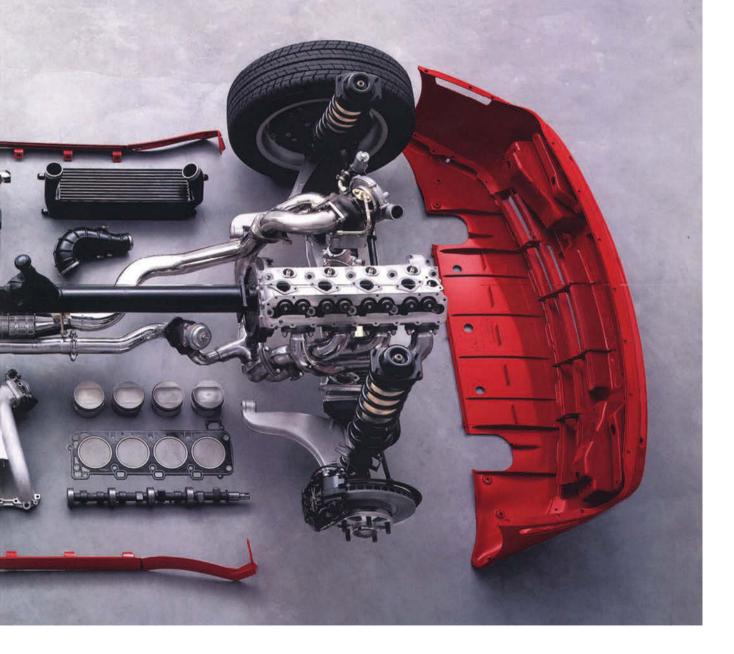
Chassis components, from shock absorbers and brakes to wheels and tires, to meet higher performance demands.

Front and rear body components, to improve wind resistance at higher speeds, while controlling lift and drag.

To say nothing of the turbocharger itself which, among other innovative bits of technology, includes two water cooling systems to protect turbine bearings, even after the engine is turned off.

Of course, if we hadn't gone to such lengths with the 944, we could still have built a turbo.

We just couldn't have built a Porsche.



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- · Gold



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Herbert Linge

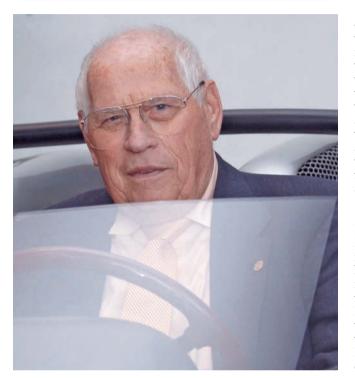
A Porsche career spanning more than fifty years and a lasting impact on motorsport safety

WORDS Frank Ash PHOTOGRAPHY Porsche AG

f all the tales we could tell you about Porsche and its personnel, the daredevil antics of works drivers, Herbert Linge and Hans Hermann, during the 1954 Mille Miglia rank high on a list of stunning stories. The pair were battling their way through the Italian open-road endurance race in a 550 Spyder facing challenging weather and driving conditions. At one point on the thousand-mile course, the pair encountered a railroad crossing. Its barriers fell in order for the fast train to Rome to pass. Hermann was in the driving seat and pushing on at an astonishing pace. He didn't think he'd be able to stop the car before hitting the lowered barriers, a reasoning that led him to tap on the back of Linge's safety helmet with an instruction to duck for cover. Yikes!

TRAINING DAY

Remarkably, the 550's lowslung design enabled the car to fly beneath the barriers. It crossed the railroad track seconds before the train passed, much to the astonishment of spectators. Hermann and Linge ended



driver, John Woolfe. Sadly, the Londoner was killed as a result of crashing and being thrown from his car during the first lap of the race. It was this event that led to the traditional standing start at Le Mans to be replaced with a start where all drivers are already in their cars (it's thought that Woolfe failed to fasten his seat belt in a bid to advance quickly up the field).

CHANGE OF PACE

Disturbed by what he saw, Linge immediately quit racing. Behind the scenes, however, the Porsche man remained as busy as ever for his employer. It was Linge who recommended the spot in Weissach that would become home to Porsche's research and development centre. It

He counts his design for emergency access to racing circuits as his proudest achievement

up sixth overall, although the fact they finished at all is a remarkable result!

Linge's career with Porsche dates back as far as the 1940s when he became the first spanner man re-employed by the manufacturer after World War II. He would spend the next five decades working for the Stuttgart concern in various roles ranging from mechanic to superstar driver (he won the Tour de Corse rally as a works entrant in 1960 before racing for Porsche in numerous outings at Le Mans).

In all, Linge racked up four world championships during a driving career that ended in 1969. The reason for his withdrawal from motorsport? He was due to share driving duties in a 917 at Le Mans with British was Linge who oversaw Porsche's customer service programme in the USA. It was Linge who established the world-famous Carrera Cup competition. In fact, he carried out various key roles in the field of design and brand development for Porsche before retiring in 1992, but it's his design for emergency access to racing circuits that he counts as his proudest achievement. Enabling a crashed car to be reached within sixty seconds, the system earned Linge the coveted German Order of Merit award.





THE REAL DEAL

The 944 was the best-selling Porsche of all time prior to the arrival of the Boxster and 997 Carrera

WORDS Richard Gooding PHOTOGRAPHY Various

aunched in 1969, the 914 proved that Porsche didn't need to survive on a diet of rear-engined metal alone. By 1975, however, the twoseater's time was up. That same year, the similarly radical 924 was launched. Originally penned as a project for Volkswagen designed by Porsche using a mismatch of parts from both manufacturers (including a front-mounted 125bhp two-litre inline-four), the new car's nearperfect 53/47 front/rear weight distribution did little to win over purists who were riled at a water-cooled configuration and non-Porsche origins. The first offering in the transaxle family was off to a difficult start.

Extensively developed throughout its production run, the 924 yielded high-performance Turbo and Carrera GT variants, as well as the 245bhp Carrera GTS. Sadly, despite the big power and impressive specification of these high output models, the 924 failed to shake off the image of being 'a Porsche with a VW/Audi engine'. In contrast, the 944 was embraced as a Porsche in its own right.

The 944 was revealed at the Frankfurt Motor Show in September 1981. Looking as though the 924 had spent every waking moment in the gym after being picked on by the motoring press, the new car inherited its muscular, widearched styling from the aforementioned Carrera GT. The wedge had a familiarity



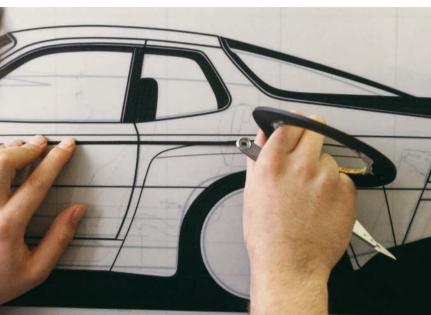




3 1974 1975 1976 1977 1978 1979 1980











about it, but there was no wheezy VW/
Audi engine for 911 fans to complain
about. This time, a new 2.5-litre four-cylinder
powerplant designed and developed by Porsche
was used. It was essentially the same unit that
had been proven under the bonnet of the 1981
Le Mans 924 Carrera GTP (as featured on the
cover of the August edition of *Ultimate Porsche*).
A development of a single cylinder bank from
the 928's V8 (and equipped with twin counterrotating balancer shafts to suppress vibration),
the base 944 engine pumped out 163bhp, just
7bhp shy of 1978's 924 Turbo.

Whereas the 924 was considered to be Porsche's entry-level model, the 944 was marketed as a luxury sports car when it went on sale in the spring of 1982. Standard equipment included air-conditioning, electric windows, fog lights and tinted glass, all wrapped up in a 137mph performance package that could deliver a 0-62mph dash in less than nine seconds. Priced at DM38,900 in Germany and £12,999 in the UK, the 944 sat somewhere in between the 924 and 924 Turbo.

Disc brakes were fitted at each end of the new arrival in order to deal with the shrugging off of increased performance, while improved weight distribution was achieved with a 51/49 front/rear split. Just like the 924, the 944 was built at Audi's former NSU factory in Neckarsulm, with the all-Porsche engine transported from Zuffenhausen.

To begin with, the 944 shared the 924's interior. What it didn't have in common with the much-criticised older car was a 'non-Porsche bitsa' reputation. Yes, the 944 borrowed much of its style, some of its oily bits and most of its early cabin furniture from the 924, but it was ordained as a 'proper' Porsche! It suited the era's mobile phone-toting yuppie to a tee; more than 26,500 944s found homes in 1984, half of that number making their way to the USA.

By 1985, the 944 was rolling on Teledials (wheels so-called because they resemble the digit tingler of an old telephone) and had screamed past the 55,000 sales mark. It's

UNLIKE THE 924, THE 944 WAS MARKETED AS A LUXURY SPORTS CAR WHEN IT WENT ON SALE IN EARLY 1982





8 1974 1975 1976 1977 1978 1979 1980







This page The 944's wide body panels and updated aero give it a much more purposeful stance than the narrow-bodied 924 that came before it





By numbers

Most know Porsche's transaxle family as the 924, 928, 944 and 968, but drill down further into specific models and a whole new numbers game becomes apparent. The 924 Turbo has factory designator '931' in left-hand drive guise, Carrera GTs are '937' and '938' (left and right-hand drive), while the 944 Turbo is known inside Zuffenhausen as '951', Logically, the Turbo S was labelled '952'. All right-hand drive standard 944s are officially referred to as '945', while '946' and '947' are numbers reserved for left and right-hand drive examples of the 924 S. '968' was originally the internal designator for the 944 S3, but the number stuck after the changes made were so extensive.



worth remembering that despite the split opinion the 924 found itself generating, the older transaxle was once Porsche's fastest-selling model. The 944 eclipsed its stable-mate's achievement early on; after only its first year on sale, the newer car accounted for more than 51% of total Porsche production. Importantly, the 944 saved its maker's bacon at a time when cash was in short supply.

The highly anticipated 944 Turbo landed in late 1985. Given the factory designator '951', the turbocharged 944's air-to-air intercooler worked with a water-cooled KKK K26 turbocharger to push power up to 220bhp with 244lb/ft torque. Compared to the naturally-aspirated 944, the Turbo was a monster: 0-62mph took close to six seconds, while top speed was (literally) boosted to 157mph. Four-piston Brembo brakes, sixteen-inch staggered alloys, stiffer suspension, an aerodynamic underbody, a rear lower spoiler and an integrated polyurethane front bumper made the model an enticing dish.

An updated dashboard design was ported over to the Turbo, and with it came a boost gauge. Drivers needed to keep an eye on the speedo too – the blown 944 was the fastest four-cylinder production car of its time!

DRIVING FORCE

Ballistic performance didn't come cheap. Costing DM72,500, the 944 Turbo's price translated to approximately twenty-five grand in the UK. Even so, the steep windscreen ticket didn't deter a car-buying public with a thirst for speed; over ten thousand 944 Turbos were sold in 1986, proving more than ever before that Porsche products remained attractive regardless of their price. In fact, the 944 was getting so expensive that the 924 (the model pulled from price lists after the 944's arrival) was reinstated in the USA! In 924 S guise, this 'second coming' made use of a detuned version of the 944's stock 2.5-litre lump.

ABS and front airbags became standard 944 equipment in 1987. This was a world first, as was the model's ability to produce the same power with or without a catalytic converter.

An S-badged version of the tidy transaxle appeared a short while later. Naturally-aspirated power and torque shot up to 190bhp coupled with 170lb/ft torque. The 0-62mph sprint was equally impressive, clocking in at close to seven





seconds. Topping out at 141mph, the S borrowed much of its tech from Porsche's 1981 Le Mans engines. It went on sale for £27,977.

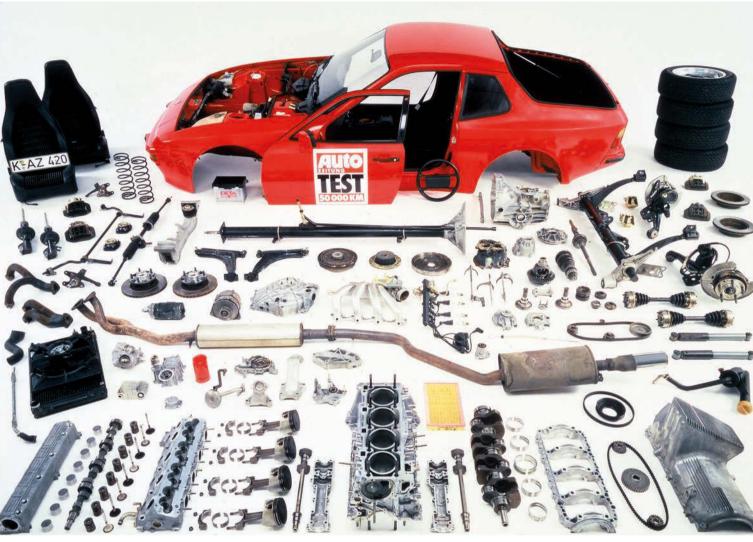
Later, in 1988, a newer high compression engine saw the standard 944 pump out 160bhp. The big news that year, however, was the arrival of the 944 Turbo S. With 250bhp bolstered by 258lb/ft torque, the limited-run model was the most powerful road-going 944 yet! Not only did it feature a bigger turbocharger than the older 944 Turbo, it included a limited-slip differential and bigger brakes as standard. Unfortunately, while the Turbo S was arguably the most impressive 944, it was also the most expensive, costing DM99,800 in Germany.



UNFORTUNATELY, WHILE THE TURBO S WAS ARGUABLY THE MOST IMPRESSIVE 944, IT WAS ALSO THE MOST EXPENSIVE

3 1974 1975 1976 1977 1978 1979 1980







Right If the standard 944
Cabriolet doesn't ruffle your bouffant, then perhaps the 944 Turbo Cabriolet will!
Released in February 1991, the forced induction droptop rop promised 250bhp of exclusivity. Only 625 were built (none sent Stateside), of which 100 were right-hand drive.
Costing £47k in the UK, the car was fast, boasting a top speed of 162mph and 0-60mph in less than six seconds. Extra chassis strengthening included the welding together of two floor pans, while a shortened windscreen with extra rake aided aerodynamics. An original AFN-supplied 944 Turbo Cabriolet recently sold at Silverstone Auctions for £39,375 and featured as the cover star of the July edition of Ultimate Porsche. Order a back issue copy by visiting:





As the decade was drawing to a close, the 944's star was beginning to fade. Numerous shuffles to the engine line-up took place in order to reinvigorate the range. The 944 Turbo gained the sixteen-valve unit from the Turbo S, and the standard car's engine was bored out to 2681cc in the pursuit of 165bhp. The 944 S became the 211bhp three-litre 944 S2 and was offered as a Cabriolet in 1990. With a soft-top engineered by American Sunroof Corporation, the Cabriolet was solid, but going topless was a fussy operation with the roof needing to be manually detached from the upper windscreen. It was characteristically expensive trim; the S2 cabby had a price tag of £36,713 in the UK and almost \$53,000 in the USA!

JAPANESE WHISPERS

Near the time of the 300,000th four-cylinder transaxle Porsche rolling off the production line in the summer of 1989, the entry-level 944 2.7 was dropped. Annual production fell to just 8510 units, leading to the eradication of 944 Turbos from main dealer showrooms in the USA. A barrage of new competition was coming from the Far East, with price-matched offerings from the likes of Mitsubishi and Nissan delivering more power thanks to V6 engines that promised greater bang for your buck.

In response to this threat from the Land of the Rising Sun, a 944 redesign was drawn up. Thanks to Harm Lagaay (the original designer of the 924), the 944 S3 was expected to play an important supporting role to the evergreen 911 and slow-selling 928. Exposed pop-up headlamps, new smoother surface detailing and more integrated bumpers were introduced, as was a new variable intake system

Before we start production on a car, it's already finished.

The car on the left is the 944 GTP. In 1881, we entered it in the Twenty-Four Hours of Le Mans where it competed against cars with engines more than twice the size of its own in-line four Cars which no amount of modification could trun into legal production automobiles.

an, a Lord among society of country.

Nevertheless, it came in an assonishing seventh overall. And spent less time in the pits than any other car in the race. It was this car's superb racing performance that led, in 1982, to the introduction of the production 944. A car which our origineers, headless of the praise given their initial dosign, have continued to servinize, to amend, to push, to mold into the car on the right.

The 944 Turbo. A car with a top speed of 152 mph, 27 horsepower, and the ability to accelerate from 0 to 60 in just 61 seconds. A car which, in certified Showroom Stock events around the country, still regularly competes against machines with engines twice the size of its own. And which, even six years later, still bears a remarkable resemblance to the Le Mans protocytee to which it owes much

of its original technology.

For us, competition provides a contant source of challenge and new ideas.

And well continue to race Porsches for is long as we continue to build Pursches. Not because we feel its necessary it; thatk up more wins than we already have. But because when we introduce a

944GTP Activates in time, not excellent consisting. Jour subsciper cylinder, liquid control front engine with tartis-



named 'VarioCam'. A revised cylinder head was also designed for the new 944, but with sales dropping faster than the Turbo S could accelerate, the car got a new name – 968.

Production of the 944 was halted in July 1991 after 163,302 units were manufactured. That tally means the model was the most successful Porsche made until the arrival of the Boxster and 997 Carrera. Thanks to its Porsche engine, the 944 didn't suffer the same derision as the 924, but there was still the odd cry of complaint (usually from 911 fans who hadn't experienced the 944's qualities for themselves). Thankfully, all that has changed. Now more fondly remembered than other models in Porsche's transaxle family, and with prices on the rise, it's difficult to imagine a better time to buy a 944 to call your own. Go!

Above The 944 Turbo's GTP origins are clear to see in this telling factory advertisement



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YEARS OF THE

CELEBRATION ISSUE

SPECIAL DELIVERY

Dragged out of a hedge after five years in suspended animation, this 1986 944 Turbo has just become the first *Ultimate Porsche* project car

WORDS Dan Furr PHOTOGRAPHY Howard Langston



DRIVER



DAN FURR OccupationPeddler of words **First Porsche**

This one Favourite Porsche 935/78 Moby Dick

Best thing about your 944 Turbo

Worst thing about your 944 Turbo Look at it!







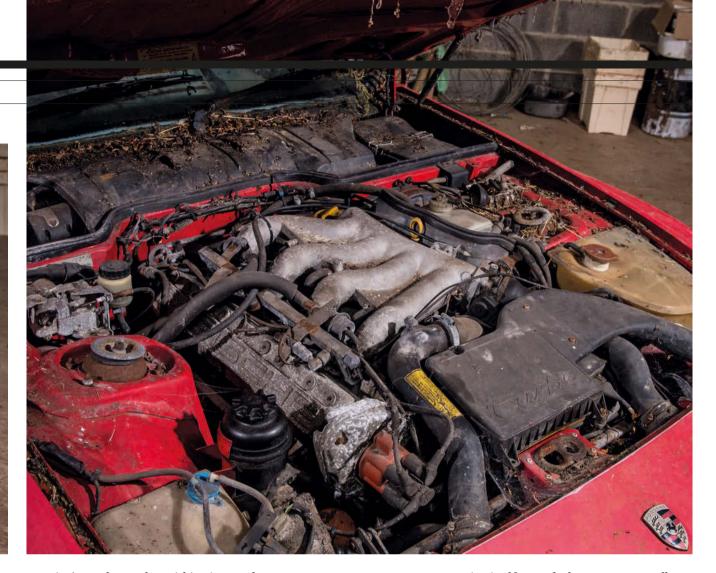


hen was the last time
you took time out to talk
to your postie? Each
and every day he (or
she) sails past where you
live, regularly pausing
in order to load your

letterbox with mail, but have you ever stopped to consider just how encyclopaedic his knowledge of the local automotive landscape must be? After all, he's constantly exposed to whatever metal is parked on the driveways of the houses he visits six times a week. It'd be difficult for him not to make a mental note of the more interesting four-wheelers he encounters on his rounds!

I'm fortunate enough to have my mail delivered by a Royal Mail employee whose blood has its own octane rating. Classic Fords are his thing. We regularly chew the fat about Blue Ovals, although our conversations cover all sorts of vintage vehicles, including old Porsches.

A few months back, while I was preparing for the launch of *Ultimate Porsche*, he asked whether I was considering the purchase of a Stuttgart-badged beast to run as a project in each issue of the magazine. The reason for his enquiry (this is the bit where you might be inspired to collar the Royal Mail operative shoving bills through your letterbox tomorrow



morning) was the 944 languishing in a garden just a few miles from where I live. "It's been sitting motionless for at least five years. The owner asked me to inform him if I knew of anyone that might be interested in taking it on. You sprang to mind!"

Faded paint covered in grime, a ruined interior, flat tyres, dodgy sills and a damaged wing are hardly key selling points for a classic car, yet these were features highlighted when I asked what condition the slumbering 944 was in. "The last time the Guards Red coupé turned a wheel was back in 2012 shortly after its owner inherited his late father-in-law's XJS," I was told. The Jag replaced the Porsche as its new master's pride and joy, resulting in the 944 being retired from the road.

I don't mind admitting to you that I wasn't exactly filled with excitement at the prospect of tackling what sounded like a potentially expensive restoration at a time when I've got umpteen other builds on the go. Just as I was about to dismiss an invitation to inspect the car, however, I was informed that the tired transaxle was wearing a 'Turbo' badge. Game changer.

It didn't take long for me to arrange a viewing. No further than seven miles from my house, the '86-plate 951 had been parked next to a hedge that had spent the past five years

Left and above Forced opening of the car's bonnet reveals evidence to suggest the local wildlife population has taken pride in making the engine bay its home

wrapping itself around what was once a well presented Porsche. Guards Red was now Guards Pink with a liberal coating of green. True to the information I'd been given, both sills were rotten, the wings had seen better days and cloth sports seat centres were frayed beyond repair.

ROUND THE HOUSES

Script handles were detached from their decaying doors, the tailgate didn't open and the bonnet was stuck fast. Heavy-handed persuasion sorted the latter; after I pushed down hard on the bonnet (while the car's owner pulled the release handle in the odd-smelling cabin) the panel popped, allowing me to shed light on a turbocharged 2.5-litre inline-four. There was a bird's nest to look at too. I'm guessing this is an aftermarket part – I can find no record of it as a cost option on the supplied build sheet.

Connecting a battery confirmed the car's electrics are in good working order, although a lost activation fob for an immobiliser fitted in the 1990s prevents the engine from firing up. Not that I wanted to risk damaging a powerplant that has been dormant for so many years by starting it without the benefit of fresh belts, fluids and filters!

Regardless of the car's cosmetic state, I was looking at a matching numbers 951





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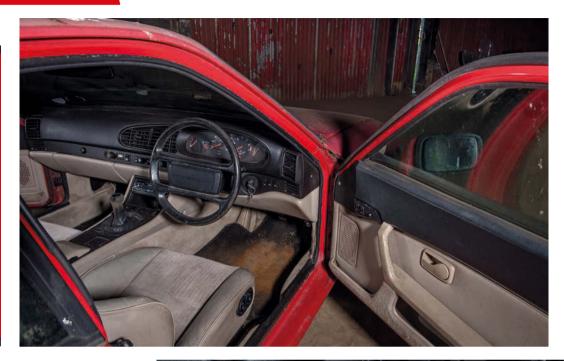
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Builds

Pandora's box

You might be looking at these photographs thinking "it doesn't look that bad," but believe us when we say that the pictures flatter this particular 951 in its current state. There's a lot of work to do! A scan through the car's paperwork highlights original registraton in April 1986, making this 944 one of few Guards Red Turbos sold in the UK that year. Our suspicion is that sills have been replaced with poor quality pattern parts, hence the need to cut out rot and replace it with fresh metal. Project progress will feature in every issue of Ultimate Porsche, so subscribe at bit.ly/subscribeup



complete with staggered sixteen-inch
Teledials and an eye-catching DVLA-issued
registration number. There was no way I was
going to turn down the opportunity to take the
car home! A low-loader arrived a short while
later, at which point the sleeping Porsche was
unceremoniously dragged out of the hedge it has
lived in for the past half decade.

FIRST CLASS

According to the stack of paperwork that accompanied my purchase, the car was supplied new by Porsche Centre Cambridge and has spent the vast majority of its life in or around Norfolk. Recent(ish) receipts highlight brand new fourpot Brembos, various items from Autofarm and regular servicing and maintenance courtesy of independent Porsche specialists. There's a stack of old MOT certificates, hand-signed letters from Porsche Cars GB (including correspondence from Steve Kevlin, formerly PCGB's Technical Services manager, now Porsche Club GB's motorsport co-ordinator), old tax discs and multiple factory handbooks.

What now? My intention is to return the car to excellent mechanical order, rid it of horrid '90s wiring and switches, sort its bodywork and restore its interior. A thorough clean might also be on the cards! Fresh paint and refurbished alloys are a given, as is new suspension and braking equipment. I'll be documenting the work in successive issues of *Ultimate Porsche*, so stay tuned for project progress. In the meantime, I suggest you get on good terms with your postie. Perhaps he'll be able to point you in the direction of your next Porsche?!





Above Even in its knackered, smelly state, the car's cabin is a comfortable place to be



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Under the hammer

Hammer time!

What may be the best 356 Speedster available to buy right now competes for our attention with another 944 Turbo Cabriolet...



1957 356A SPEEDSTER

Instantly recognisable by virtue of its low-profile wraparound windscreen, entirely retractable hood, lower door waistline, horizontal trim strip and its twin bucket seats - all of which served to emphasise a sporting image - the 356 Speedster was, in effect, an 'economy' model intended to compete with cheap British sports cars. This low-mileage 1600 Super Speedster must be among the best examples available anywhere. Not only does it retain its original matching numbers Super engine, but with less than 18,700 miles covered from new, it's in a category of its own. Furthermore, the car was delivered new to Switzerland - quite unusual for a European sports car aimed at the American market before being restored by Clark and Carter in Essex a few years ago. Complete with its factory white-over-red colour combo, this sexy Speedster will be offered at Bonhams Quail Lodge auction later this month.



1991 944 TURBO CABRIOLET

For a rare car (only 100 right-hand drive models were produced), we're sure seeing a fair number of 944 Turbo Cabriolets presenting themselves at auction this year! The latest example to attract the bang of a gavel is this Guards Red low-miler supplied new by Strattons of Wilmslow in August 1992. Equipped with a limited-slip differential, an enlarged stainless steel exhaust system and minty fresh Classic Grey interior, this cool cabby was part of an enthusiast's collection before being offered at Silverstone Auctions recent Classic Sale.







If ever there was a car that could be associated with Thatcher's Britain, then a Guards Red 911 Turbo (ideally loaded with an integrated phone the size of a brick) would be it. The motor of choice for the 'loadsamoney' crowd, the bright red, arseengined status symbol cuts a striking figure, which is probably why the specification of this 1988 930 proved to be so attractive at H&H Classics last month. Supplied new by Gordon Ramsay (no, not that one) of Newcastle, the car was recently subjected to an engine overhaul by Unit Eleven in Warrington at a cost of more than ten grand. Pleasingly, mileage of 94,500 shows that this is a fine example of an '80s classic that has been enjoyed on the road by its previous owners.







1994 968 CLUBSPORT

Appreciation for the 968 Clubsport is still to reach levels befitting of a stripped-out, trackoriented factory Porsche, meaning that you can currently buy a 'no frills' transaxle geared-up for an attack of the asphalt for a reasonable sum. This Speed Yellow CS is a prime example of what we're talking about. Recently refurbished and treated to a top-end engine rebuild (following a snapped timing belt), the car benefits from new wings, new inner and outer sills and a full glass-out respray. Interestingly, this particular Clubsport hasn't ever been used for heavy track work, meaning that its brakes and suspension remain standard. Additionally, a life on the public highway means that this stunning 968 is free of telltale roll cage mounting points. It's a lot of car for the money!



Under the hammer



1985 928 S2

This handsome S2 has an assured place in the history of the 928 due to it being first registered to Porsche Cars Great Britain (PCGB) and for serving as its press car with the registration THE 928S. Featuring sparkling Crystal Metallic Green bodywork teamed with half leather interior trim in Green and Grey, the car's comprehensive specification includes an original Blaupunkt SQ46 head unit, working air

conditioning and heated seats. This historic 928 also comes complete with a large collection of books and magazines in which the car was featured during its road test days. There's a verified DVLA keeper history listing PCGB too. An interesting proposition for the discerning 928 fan who bought the car at last month's H&H Classics auction at Imperial War Museum Duxford.



1968 912

The question of how to tempt new customers into Porsche ownership has always been problematic. On the one hand, the manufacturer wants to uphold the reputation of the company as a purveyor of high-quality sports cars, while on the other, it is anxious not to alienate potential customers whose budget won't stretch to a new 911. In 1964, with sales of the then-new 911 slow (meaning demand for the due-to-be-ended 356 remained high), the four-cylinder 912 was introduced as a low-cost alternative to the six-cylinder beast. The left-hand drive 912 presented here has been fully restored at a cost of £25k after three decades in the USA, but not even our recent article celebrating the model was enough to tempt you guys to part with your hard-earned, meaning that the car passed through Silverstone Auctions Classic Sale without finding a new home. Sheesh!





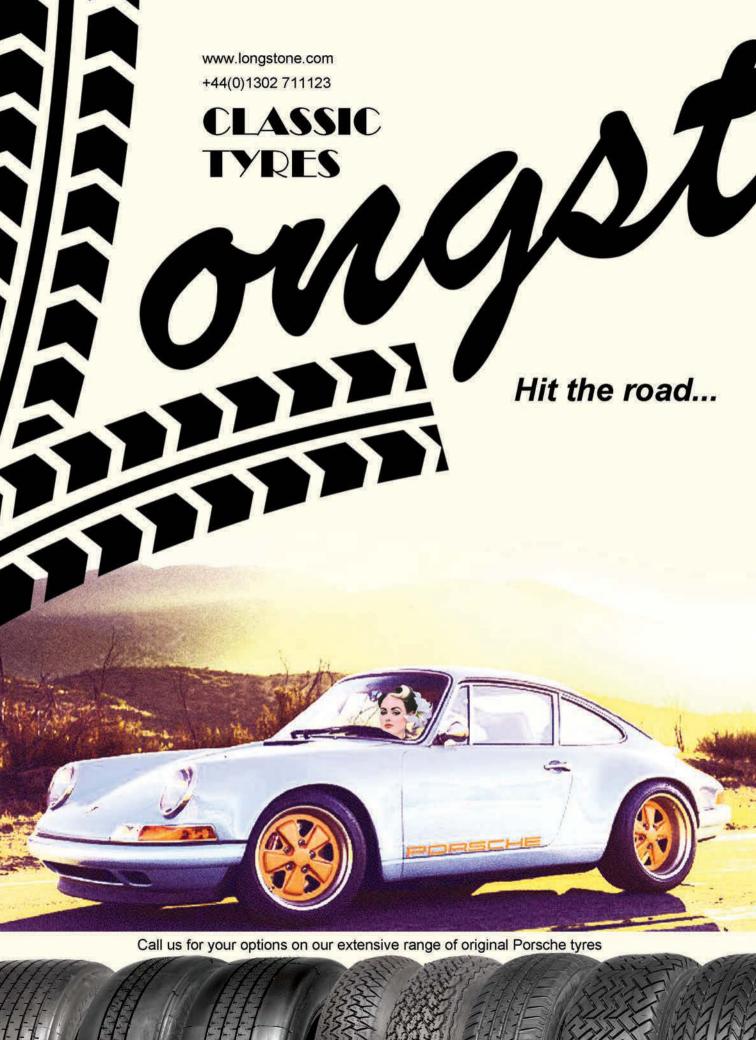
1989 930 LE

Regular readers will remember the 930 LE buying guide we produced in the last edition of *Ultimate Porsche* (grab a back issue copy at *www.bit.ly/backissuesup*). In the article, we referenced the Grand Prix White LE that sold for £160k at Silverstone Auctions a couple of years ago. Not to be outdone, another Grand Prix White example



of the super-rare 'last hurrah' for the 911 Turbo just sold at the same auction house for £165k. With a tacho registering just 30k miles and a Porsche Certificate of Authenticity, this one-of-fifty represents what is arguably the most collectible turbocharged 911 (LE was UK-only trim offered as 930 production drew to a close).







Porsche 944

944s have been hovering at the lower end of the Porsche price spectrum for years, but the tide is turning...

WORDS Roger O'Donnell PHOTOGRAPHY John Colley

f you've picked up this issue of Ultimate Porsche, then the chances are that you've thought about buying a 944 at some point or another. Perhaps you're considering the purchase of a 944 right now? Echoing sentiments expressed elsewhere in this magazine, fast-appreciating prices make this a good time to seek out a 944 to call your own. After all, how long will a mint condition 944 Turbo remain cheaper to buy than a tatty 911 SC?

If you're not bothered about forced induction, then the 944 becomes even more of a bargain. At the time of writing, little more than five grand can get you any one of a number of tidy pre or post-facelift coupes or cabriolets, with a choice of purely Porsche engines ranging from 2.5-litre eight-valvers to three-litre sixteen-valve units. No VW/Audi powerplants here, thanuverymush!

The 944's high volume production means there's no shortage of cars to choose from, which also means that owners have nothing to worry about when it comes to the availability of spares or tuning equipment. Similarly, the 944 has proved so popular over the years that servicing doesn't have to empty your wallet for much more than the price of running a Ford Focus. And with the Porsche Classic programme reintroducing genuine parts at prices often cheaper than buying aftermarket, the superbly balanced 944 represents one of the shrewdest ways to break into the world of supercar ownership. But don't delay – the 944's thirty-fifth birthday has generated a lot of interest in this modern classic.



BODY

The 944's part-galvanised bodywork earned the car a reputation for being a Porsche that laughed in the face of corrosion. In reality, more than thirty-five years have passed since the earliest 944 rolled off the production line at Neckarsulm, and it's difficult to argue that the model is immune to rot. In fact, many will say that the 924 has stood up to the ravages of time far better, with 944 sills, door bottoms and wing bases often replaced in order to keep their host vehicles on the road.

Thankfully, renewed interest in the 944 (not to mention an increase in the financial worth of well-presented examples) means that many more owners are treating their cars to corrective surgery in order to ensure they survive for decades to come. Demand for sills means that they can be bought from any one of a number of parts suppliers at reasonable cost, while new door panels and wings are simply bolt-on items that can be replaced with brand new components or salvage spares.

Water-soaked dirt collects behind wheel arches, trapping moisture and causing regrettable rust to form. Blocked roof drains, compromised tailgate glass and sunroof seals also prove problematic. Have a good poke around to ensure there is no evidence of leaks or water damage.

Telltale signs of corrective paint includes overspray on door hinges and rubber seals. Be sure to check to see if wheel arch protection film has been painted over (instead of being removed and renewed either side of cosmetic work). While there's nothing wrong with renewing colour, this slapdash finish may suggest that the car has been involved in a prang and fixed on the cheap. Heresy!

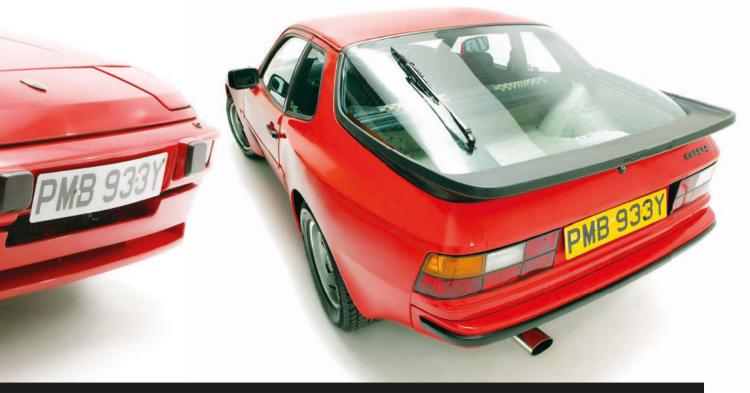
Paint protection lacquer wasn't always offered as standard on some colours, meaning that bodywork can look flat; faded Guards Red can appear pink. A machine polish and aftermarket ceramic coating will help to revive pigment, although a potentially expensive respray will be required if replacement panels are deemed necessary.

Paint protection wasn't offered on some colours, meaning that bodywork can look flat



IDENTITY

A 944's vehicle identification number (VIN) is stamped into the top of the bulkhead. It's easy to access if your head is beneath the bonnet of whichever car has taken your fancy. Make sure the number displayed matches what's printed on the accompanying V5 document. Additionally, a sticker placed on the inside back panel (above the spare wheel well) will feature the same information, along with engine number/type, paint and interior colour codes, model type (e.g. an early 944 Turbo will be listed by its factory designator, 951) and a list of options specified by the original buyer. This will include factory wheel, suspension and in-car entertainment choices ordered at the car's initial point of sale. The complete list of 944 trim options is easily found online, so it's a good idea to bookmark it on your mobile device's browser (or print it on paper) in order to be able to check that all original equipment is present and correct before you part with your hard-earned dosh.





S Buy & Tune

ENGINE

During its time in production, the 944 was fitted with a range of different engines varying in displacement. Power ranged from the 150bhp of early cars through to the 250bhp of late Turbos. with special edition variants and limited-run race cars delivering even more in the way of performance. Unlike the 924 before it, the 944 was a Porsche-only project, meaning that with proper care and maintenance, even examples with high mileage should provide you with hassle-free fun on the road, although it's fair to say that low mileage cars in a standard state of tune tend to hold their value far better than those that have been tinkered with.

TRANSMISSION

944s were offered with a choice of manual or automatic transmissions when new. Unlike the oft-clunky auto shifting of early 928s, 944 gear changes should be smooth. If a test drive highlights staggered shifting, check when the transmission oil was last changed. It should be replaced every 48k miles, and you may be surprised at the transformation this simple, low-cost update will deliver.

The 944's manual gearbox is a five-speed unit with ratios determined by the model bought. For example, Turbos have higher ratios than naturally aspirated 944s. Limited-slip differentials were offered as a costoption (a standard fit on late Turbos).

Nylon bushes in gear linkages are known to wear over time, but replacement parts are available, meaning that you'll be able to experience tight, precise shifting that feels factory fresh.



Be wary of Turbos that produce blue smoke from their exhausts. Any such condition should be treated as a huge bargaining chip; there's potential for a big bill to come your way if a replacement or repaired turbocharger is required. Thankfully, there are many specialists who can help with the rebuild or upgrade of the car's forced induction equipment.

It's worth noting that the 944 Turbo's engine wasn't simply put together by bolting a snail-shaped bhp booster onto the side of the existing 2.5-litre powerplant. Different pistons, connecting rods, a revised cylinder head, an uprated valvetrain and a free-flowing intake system were all specially commissioned for the model.

Check for coolant, oil or vacuum leaks by observing the condition of hoses while the car's engine is running. Rubber perishes over time, which is why many replace OEM fluid and airflow pipework with high-performance parts made from reinforced multi-ply silicone. Many manufacturers, including Roose Motorsport

and Samco Sport, produce these parts in a range of colours, but they also offer them in matte black for purists who wish to improve performance whilst retaining a factory finish.

Look for evidence of a recent timing belt change. If there is no supporting paperwork to support claims that this work has been carried out, then factor the cost of parts and labour into the purchase price of the car you're looking at.







BRAKES

The majority of 944s produced feature single-piston calipers and vented discs at each corner. Turbos and S2s, however, benefit from a full set of four-piston Brembos as standard. The famous M030 cost-option (check that boot sticker!) gave lucky owners even bigger Brembo calipers able to house larger discs. These

parts are more difficult to get hold of than the standard Turbo calipers and discs, but came as standard equipment on the 944 Turbo S and some special editions, including the rare S2 SE.

Premium quality aftermarket discs and pads can be ordered direct from British manufacturer, EBC Brakes, as a package deal or as separate components.





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INTERIOR

Early 944s share the same square-type dashboard as the 924. In late 1985, Porsche provided the later car with its own curved dash in response to unhelpful comparisons between 924 and 944 trim. Door cards and switchgear were also updated, as was in-car audio equipment that sprouted extra speakers as the years went by.

944 seat fabric is known to bleach and fray if left exposed to intense sunlight for long periods.
Replacement cloth is available to buy from werk924.com. It's a poorly kept secret that this is where

Porsche buys a lot of replacement fabrics for customer cars restored by its various Porsche Classic Partner Centres!

944 leather is more hardwearing, and is considered to be much better quality than the hide used in later Porsches, including the Boxster. That said, sports seat bolsters are prone to wear if drivers slide in and out without care, a condition that can result in an expensive repair bill. Speak to interior restoration specialist, Cambridge Concours, if you think the cabin furniture of the 944 you're interested in buying requires attention.







Buy wisely, keep good care of the car you end up with, and you shouldn't lose money, even when adding high mileage

TUNING

Before you're tempted to tinker, make sure the car is properly serviced and is running without fault in a standard state of tune. Once you're satisfied that this is the case, airflow updates that will free trapped ponies can be easily bought and fitted to your 944. A 'plug and play' K&N panel air filter, an enlarged stainless steel exhaust system and renewed hoses will make a world of difference to the performance of a Porsche.

Unlike modern ECUs, the 944's electronic brain can't be mapped, meaning that chipsets need to be installed on the original circuit board. These old-school parts can

be bought from a number of different retailers and should improve the torque curve of your car whilst raising its rev limiter. For the most comprehensive ECU upgrade, invest in a standalone engine management system.

A re-profiled camshaft will offer instantly noticeable performance benefits over the fairly tame standard Porsche part. Balancer shaft deletion and lightweight pulleys will also provide optimised power.

The easiest and most cost-effective way to make a 944 quicker and faster is to reduce its overall weight. Consider ditching the rear seats, passenger seat, heavy

audio equipment and any other parts you consider supplementary to requirements.

944 suspension and brake upgrades aren't in short supply, with retro-fit factory cost options or aftermarket alternatives at your disposal. Wheels can also be replaced, although many 944 owners like the look of factory rims. OEM highlights include the 1986 Turbo's staggered deep dish Teledials and the most expensive rim option ever offered on a 944, the classic fifteen-inch Fuchs, as made famous by the Carrera 3.2.

Improve grip by investing in quality performance rubber from the likes of Falken, Toyo or Nankang.

PRICE

For those who have always dreamed of owning a 944, now is the time to get out and buy. Riding on the 911 price bubble that has been a key driver in the increased interest in classic cars over the course of the past few years, the 944 is beginning to gain traction with investors. This is especially true of Turbos. Buy wisely, secure a good purchase price, keep good care of the car you end up with, and you shouldn't lose money, even when adding high mileage through regular use.

Remember, the 944 is the supercar that can easily be used as an everyday vehicle. Buy one while you still can!

A quick scan of what's on sale this month delivered the following results:

1992 S2 SE

One of only fifteen, recently restored by Rennsport, offered in factory specification with rebuilt blueprint engine

£49.500

1986 TURBOGuards Red, recent respray, low miles, M030 brake and suspension package, staggered Teledials

£27,500

1991 S2 CABRIOLET

White body, new blue hood, full Porsche service history, refurbished D90 wheels, cloth re-trimmed in twin-tone leather

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1986 LUX

Guards Red, recent respray, freshly serviced, new timing belt, new pulleys and seals, four owners from new, big history file

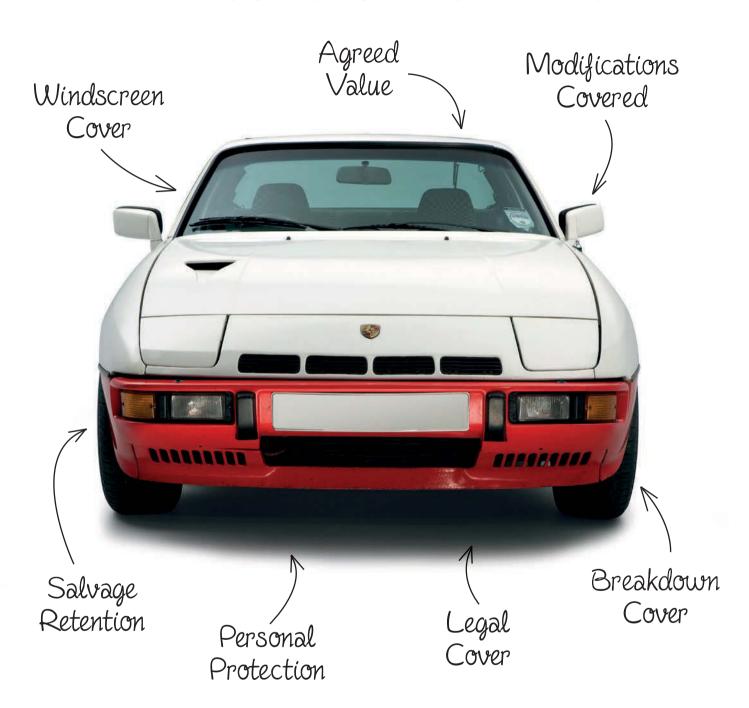
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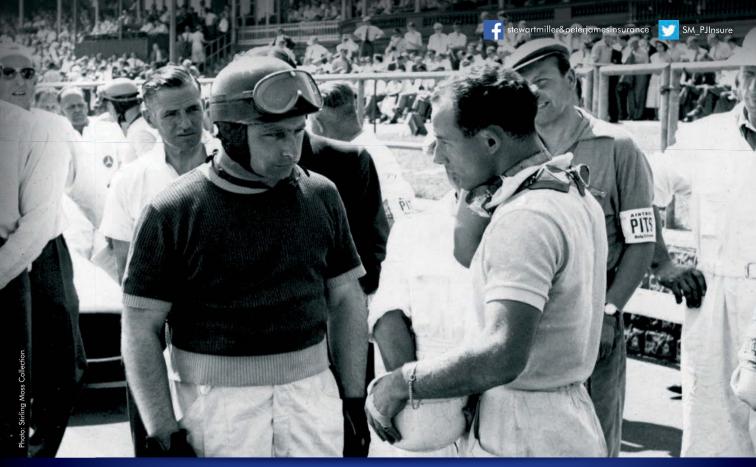
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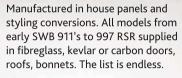
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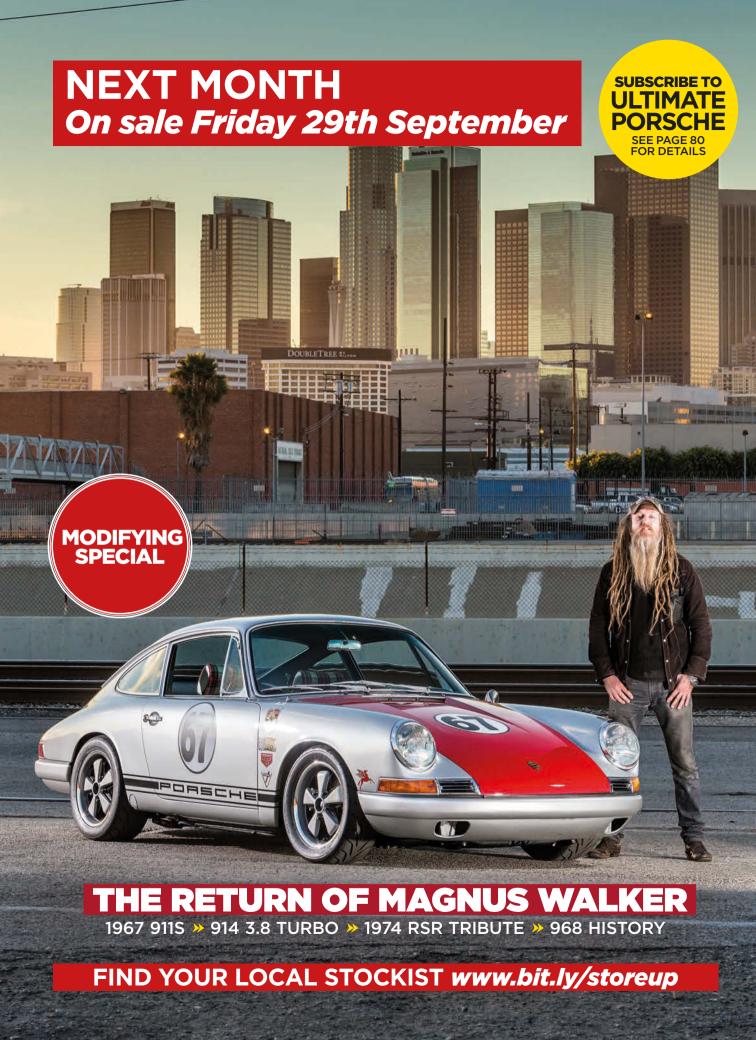
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