

A red Porsche Carrera is shown from the side, driving on a winding asphalt road that curves through a lush green landscape. In the background, there are rolling hills covered in vineyards and several large, leafy trees. The car is in motion, with some motion blur visible on the wheels and the background. The title 'SOUNDS OF THE SEVENTIES' is overlaid in large white letters on the left side of the image.

SOUNDS OF THE SEVENTIES

Cargraphic has loaded a bunch of its exhaust and tuning goodies onto this 3.2 Carrera – and turned it into a 2.7 RS lookalike. We crank up the volume

Words: Johnny Tipler Photos: Antony Fraser

When your business is producing performance exhausts and other tuning kits for Porsches you need a show-off car to showcase it, and that's just what Cargraphic have done with a 1987 3.2 Carrera. And because principal Thomas Schnarr's favourite 911 is the 2.7 RS, that's how the car is presented. We called in at his Landau base for the full aural effect.

Landau is a medium-sized German town in the heart of the hilly Pfalz region to the north east of the Black Forest, surrounded by prolific vineyards producing wonderful Dornfelder and Riesling among other delicious wines. That, of course, has nothing to do with our visit; although it does provide a fabulous backdrop for our photoshoot.

Before we get to the car, a bit of background is in order. Cargraphic has been producing Porsche replacement exhaust systems for 21 years, since Thomas went into partnership with Simon Young, who's based in Cullompton, Devon, in a business owned 50-50, refining and upgrading exhaust systems for modern as well as classic Porsches – from 911s and 991s to Macans and Caymans. There's a certain *frisson* standing beneath a 911 that's up on a ramp in southwest Germany, knowing that its exhaust system was handcrafted in equally picturesque south west England. Coincidentally, both regions have vineyards...

Thomas Schnarr has been involved with Porsches most of

his life, and the 2.7RS was always the goal: 'I like the F-programme models, and back in 1982 I had seven original ones which I bought here in Germany – cheap at 25,000 DM at the time (around £11,000), and sold them to France for between 30 and 35,000 DM. I even had a tangerine 911 back then, but it was horrid to drive; the gearshift was wobbly and the mechanical fuel-injection was always giving trouble.'

There are no such issues with the new car. 'I wanted a rust-free black American late G50 car to start with, and this is what I got three years ago: no accidents, no rust, and since then we've completely done it up.' From front to back, the revised bodywork consists of carbon front wings and long front lid, steel doors, pert carbon ducktail and carbon rear bumper panel, the whole package weighing in at 1025kg. Trad Carrera graphics emblazon the lower flanks.

The 3.2 Carrera-based flat-six is Cargraphic's 'RSC 3.2 power kit' unit, rated at 283bhp with top speed calculated at 267Km/h, and contains Cargraphic's own modified 964 cams and head porting. It's running a big mass airflow sensor and BMC air filter, which forms a very neat arrangement, having been installed by Cargraphic's in-house technicians. There's no getting away from its huge compressor, actuating full air conditioning, an anachronism on a 2.7RS but no less welcome in the modern world.

The suspension features Bilstein Clubsport dampers with Weltmeister bushes, and retains the 3.2's torsion-bar set up.

**“THOMAS SCHNARR’S
FAVOURITE 911 IS
THE 2.7 RS”**





Thomas Schnarr points out that it's running Michelin TB15 classic racing tires on 15in Fuchs wheels, and comments that, 'these are better for the road, and they even work when it's wet. We fitted 15in wheels on the back and 7in wheels on the front, and we recently broadened the wheelarches so they covered the wheels.' The car has four-pot calipers front and rear with drilled discs. It's a great looking car, but its *pièce-de-resistance* is surely its sparkling exhaust system, the Cargraphic GT exhaust with dual RO2 catalytic converters and integrated flaps. There are three different grades of internal baffling for a Cargraphic 911, producing three different variations of sound, effectively, you could have what would be considered an OE sound, which is identified as an ET, and then the TÜV box which is a bit louder than standard and called an ETR, and then the non-export version which is an ETS.

The orange car's comprehensive pipework includes the ET system, but fitted with special normally closed flaps, with the advantage that the car always starts in 'quiet' mode; it's controlled by a vacuum that will open the flaps so the car can be run quietly at low revs, and, as Thomas Schnarr explains,

'When you feel like it, you can open the flaps with a vacuum, which routes the gases directly from the catalytic converters to the tail pipe.' Two further configurations can be specified for classic 911s. 'We have built this system with two versions for the earlier cars, with a modified heat exchanger when people want this system that's fitted on the orange car, or with our full GT system, which has the heat exchangers over the catalytic converter, so it works just as well.

'But you have more variations with the inlet pipe diameter so you can go bigger than the heat exchangers, so it's more powerful. In fact we actually sell more GT systems than heat exchangers. People like the look of the manifolds, and they do look a bit fancier. The other practical reason for having the heat exchangers over the catalysts rather than the headers is mainly that you can have bigger pipes for the headers because you're not constrained by the dimensions of the heat exchanger.'

They've done a convincing job on the interior, too. I ease into the classic hound's-tooth seats and get snug with the period four-spoke wheel. It's largely a black cabin with red pinstriping around the door cards, and a Cargraphic logo in the rev counter.

Above: Thomas Schnarr admits that the area showing most growth in interest is the classic Porsche scene, hence the decision to create a classic showcase for his company's latest products

Below, left and right: Hound's-tooth-trimmed retro-styled seats and early steering wheel help transform the 1980s interior



Heading out of Landau's handsome streets into the vineyards, I revel in the acoustics of the Cargraphic system. It's a swift passage, with typical 3.2 Carrera driving characteristics. And true to the typical 3.2 Carrera, it's a lovely torquey engine, the camshafts giving it a bit more performance at high revs. The Michelin TB15 racing tyres are 23/62R15 on the back and 185/60R15 on the front, and I can feel them gripping securely on entry and consistently all the way around the tight turns punctuating our route. It's a classic 3.2 drive, more of a classic feeling rather than a modern 911, obviously, so the period look is matched fairly authentically by the ride and handling, as well as the performance.

As I helm the orange RS lookalike to and fro along our photoshoot route I'm struck by the ambiguities of ride and handling, no doubt occasioned by the hybrid melange of superior 3.2 chassis, lowered suspension, Bilsteins, Michelin-Longstone rubber and the torquier engine response. Feedback is instantaneous and, like all 3.2s, it's involving, and nowhere more so than these hilly, twisty, vineyard back roads. When the surface is less than perfect the front wheels pucker over every undulation as they feel out the cambers, and I'm using deft steering movements and a circumspect right foot. The faster I go, the more the steering loads up and the more physical the action becomes.

The G50 'box has relatively long gearing, which tallies with the methodical nature of the gearshift as I shift systematically from one notch to another. It really delivers between 4000rpm and 6000rpm when the snarling Cargraphic exhaust comes into its own, rising to a harsh bellow at the top end and popping and banging on the deceleration overrun. On the other hand, it will pull

**"THE FASTER I GO, THE
MORE THE STEERING
LOADS UP..."**





**“THE BIGGER BRAKES
ARE CONFIDENCE
INSPIRING...”**

Below from the exhaust
is a sound to put a smile
on any classic Porsche
owner's face. TÜV-friendly
system can run in both
'quiet' and 'open' modes...

inexorably and insouciantly from 1500rpm in fifth. The bigger brakes are confidence-inspiring, and I indulge in trail-braking into some corners, carrying speed through them, power on and with more throttle at the apex, steering through the bends and playing with oversteer induced by on-off throttle to make the front end tuck in. It's a great car, rewarding to drive, especially with the window down – all the better to drown in the addictive roar of the exhaust.

I'm sure that exhaust notes sell cars: they certainly score as far as sensory appreciation goes. Cargraphic even make a system for V6 diesel Macans which incorporates a pair of speakers just before the tail pipes which is programmed to emit a petrol V8 rumble – and you can modulate it to high or low pitch V8 via a smartphone app(!). But that's the exception. As Thomas says, 'We try to make our systems fit with OE

parts, whereas other makes often don't, and in some cases you can't just replace the tail pipes or rear box because their systems won't match with the existing parts. Design-wise, with the Cargraphic products, we always try to maximise flow, maximise power while still keeping it within a respectable – and legal – sound level.

'Because of the constraints with TÜV in Germany we can't have a system that's absolutely unfettered, so there has to be a compromise between the level of sound and the performance that can be gained. But our systems do tend to be more driveable and more user friendly as a result. You don't have that horrible droning in the back of your head over long distances.'

How they gauge whether a particular configuration of silencer and header and tailpipes, plus catalytic converter and



ve: Tipler aims and pulls trigger, soaking up the and as the exhaust goes free-flow mode...

ve centre and right: sman Thomas Schnarr uses about the new nless systems, and its the original RS is his urite Porsche

at started life as a 3.2 rera now looks like a ty convincing homage to Carrera RS. However, car's primary role is as a onstrator for Cargraphic's aust systems



heat exchangers is going to enhance the car's performance is, according to Thomas, 'very much an experience-based thing. We have a decibel meter and we measure the car as standard and then we can do our own work and then measure the car.'

That's done static and drive-by, rather than rolling road. Increasing bhp is also down to past experience: 'It's what we've learned over the years; we can work out primary diameters, primary lengths, and cats we know always give an improvement with the modern 200-cell, tri-coated T38 platinum, rhodium, palladium Cargraphic exclusive cats, and there's an immediate gain to be had in fitting those when the factory parts are usually 600-cell, so immediately you've increased the flow by a factor of three. If you're going for maximum power you should consider those, as a lot of the factory headers are particularly restrictive. And there are good gains to be made in replacing the stock headers with our free-flowing versions.'

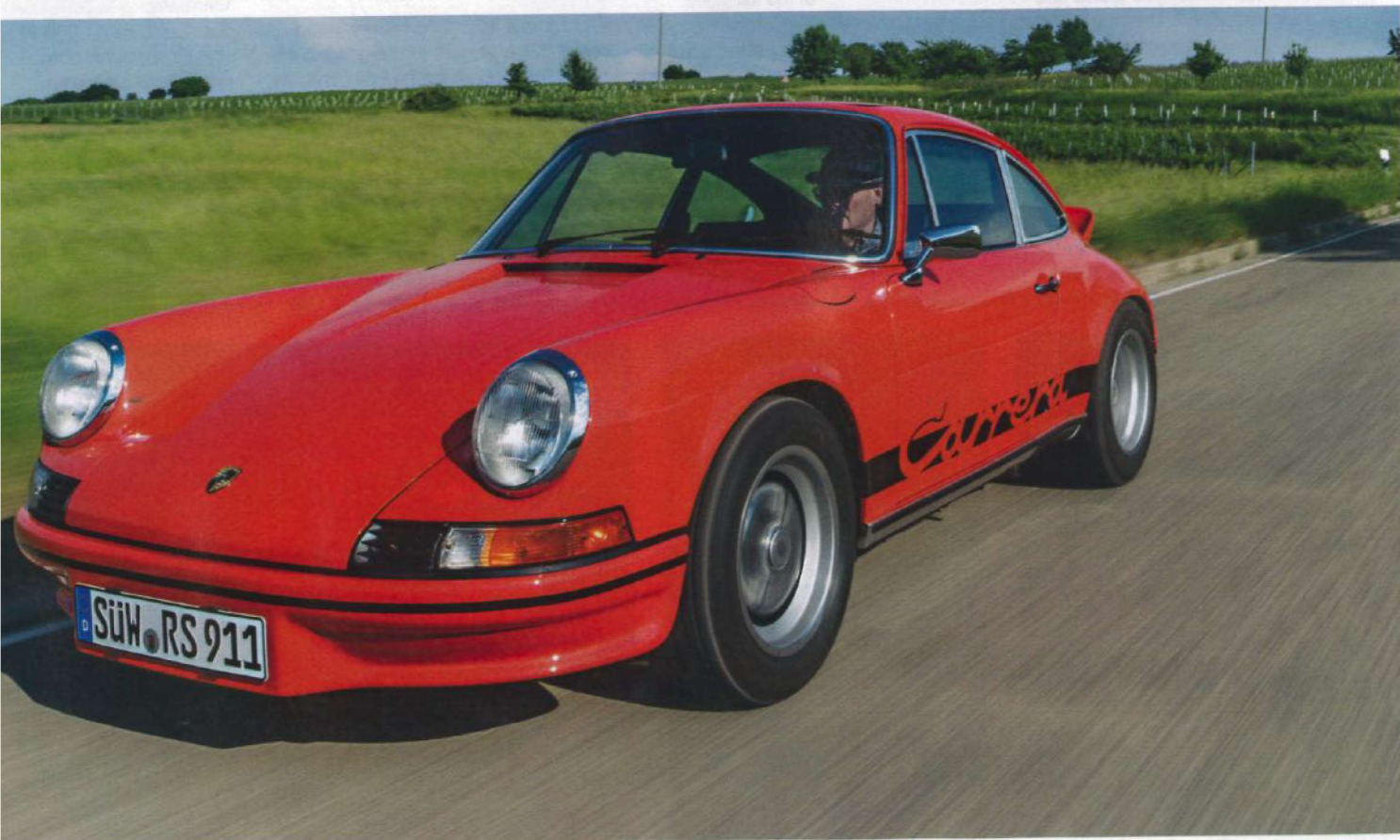
Cargraphic exhausts are fabricated from 304L lightweight stainless-steel, which is an austenite or gamma-iron, so it's non-magnetic, whereas cheaper grades of stainless-steel like 409, which is a steel with a high chromium content and not much nickel, but which is magnetic, and over a period of time it will rust. As Thomas says, 'It will probably last ten years, and that's the gamble; most stainless manufacturers offer a lifetime

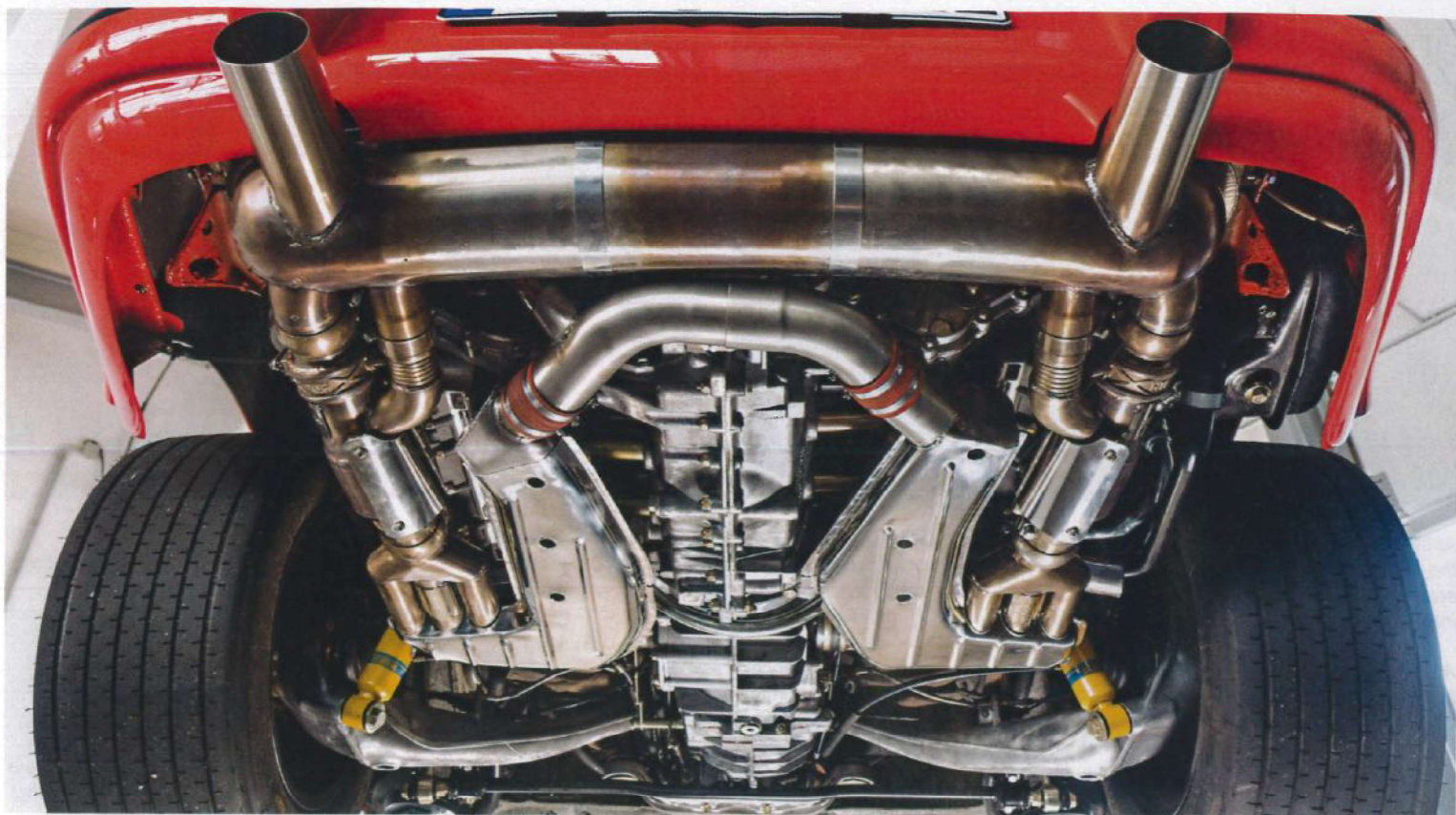
guarantee to the original purchaser, but the likelihood that somebody keeps their car more than ten years is not that great. It depends if it's somebody's everyday runner or whether it's just a high days and holidays car, in which case it will last equally as long as 304.'

Thought silencers were just steel cylinders with baffles inside? Thomas will put you right! 'All our silencers are assembled in the same way, wrapping two or three layers of stainless steel wire-wool around the baffle, we put a layer of needle mat which is a blanket glassfibre around the inside of the case to the insulator case, and then we fill the void with material which is called glass robing which is like glassfibre in a continuous filament, so it doesn't break down.

'This will then get pushed into the silencer under pressure by this machine, and these machines will squash the case to the right shape for the baffle and then the internals will retain the shape.' Variations on the theme include the vacuum flap silencer, which enables the driver to modulate the volume of sound the car is making at the press of a switch.

'When the vacuum flaps are open the gases can go straight to the tail pipe, and when the vacuum flaps are closed the gases are forced down into the long run on the silencer so they then go into the centre, return and then drop back in onto the tail pipe





outlet. Strengthened brackets, as well as the olive-and-slide system ensure an exact adjustment, which guarantees a stress-free installation.

'Where possible, all parts are mounted with Aeroquip fittings to provide perfect sealing combined with flexibility.' Some systems employ spring attachments: 'where there's a risk of fracture, the springs allow the system to expand and absorb vibrations, and when the springs are attached it gives the system a tremendous amount of flexibility and the ability for the system to expand when it gets very hot without the risk of fracture. They're important on our race and trackday systems.'

All parts are test-fitted, dyno-tested and TÜV approved in Germany once developed. The way it works is, Cargraphic receives an order in Landau, the parts are made in Devon then shipped back to Landau and dispatched to the customer from there, 'to anywhere in the world,' says Thomas.

The timescale for manufacturing a complete exhaust system is difficult to quantify because everything is produced to order in small batches. 'For instance, we are currently developing the cat sections for the 991 gen 2 Carrera 3.0 turbo, and it will probably take us about a week to produce a working set and a pattern set. The process is to jig the original parts and then to build our part in that jig, so our part will then fit with an OE rear silencer, but if we were producing manifolds, cat sections, centre section,

rear boxes and tail pipes, that could be three to four weeks' work, particularly if we're building it on the car, because by the time we've built our patterns and then jigged our patterns and then produced one out of the jigs to make sure it fits the car, that could be as much as a month's work. It may need refining, but hopefully it's perfect first time.'

Which system does Thomas regard as the most impressive exhaust system that Cargraphic produces? 'Probably our 911 flat-six system for the earlier cars, the 3.2 Carrera maybe, and I also like our 996 GT3 race system, or our 991 Turbo system that features on the Cargraphic video with flames coming out of the tail pipes.'

Cargraphic's next project car is a 964: 'it's a factory Turbo-look America Roadster, one of 326 built, with all our goodies on it, including air-lift and the new flap system for the 964.' This, as much as the orange 3.2 backdate, reflects where Thomas sees the trend going in 911 ownership: 'I see the direction as classic, especially as new cars become more and more tightly regulated. We have so many classic parts in store on the first and second floors of the main building so this is in addition to our range of exhausts and tuning equipment.'

And that is a healthy line-up of goodies, many of them fitted to our test car and, providing you're of the persuasion that believes Porsches are for playing with, all the better for it. **CP**

Above: Cargraphic exhaust systems are manufactured in the UK, but sold worldwide from the German HQ

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Below, left to right: Michelin TB15 tyres, backed up by Bilstein suspension, give the Carrera superb roadholding. 3.2-litre engine runs modified 964 cams and breathes easy with the Cargraphic exhaust

