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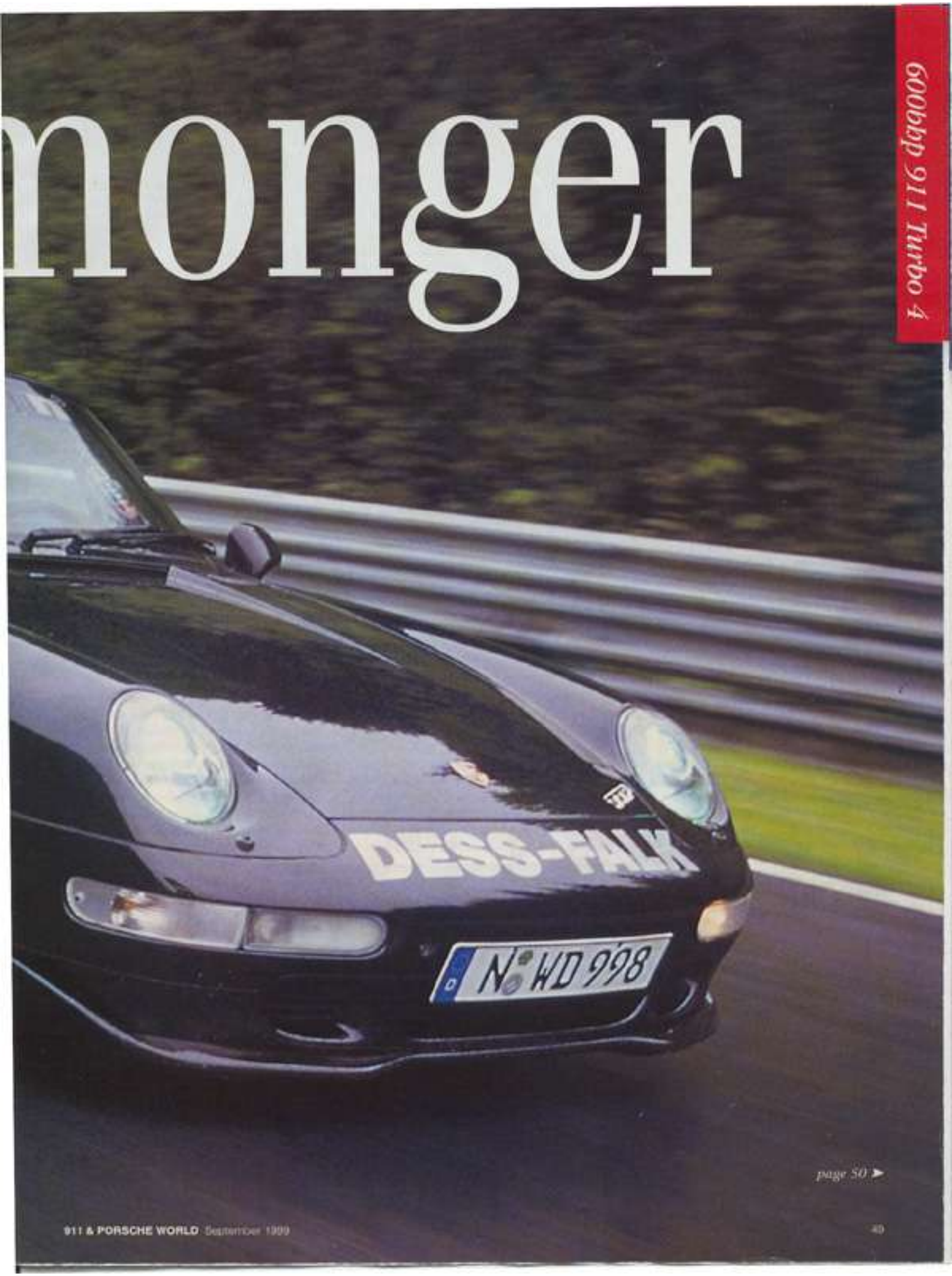
Goodbp 911 Turbo 4



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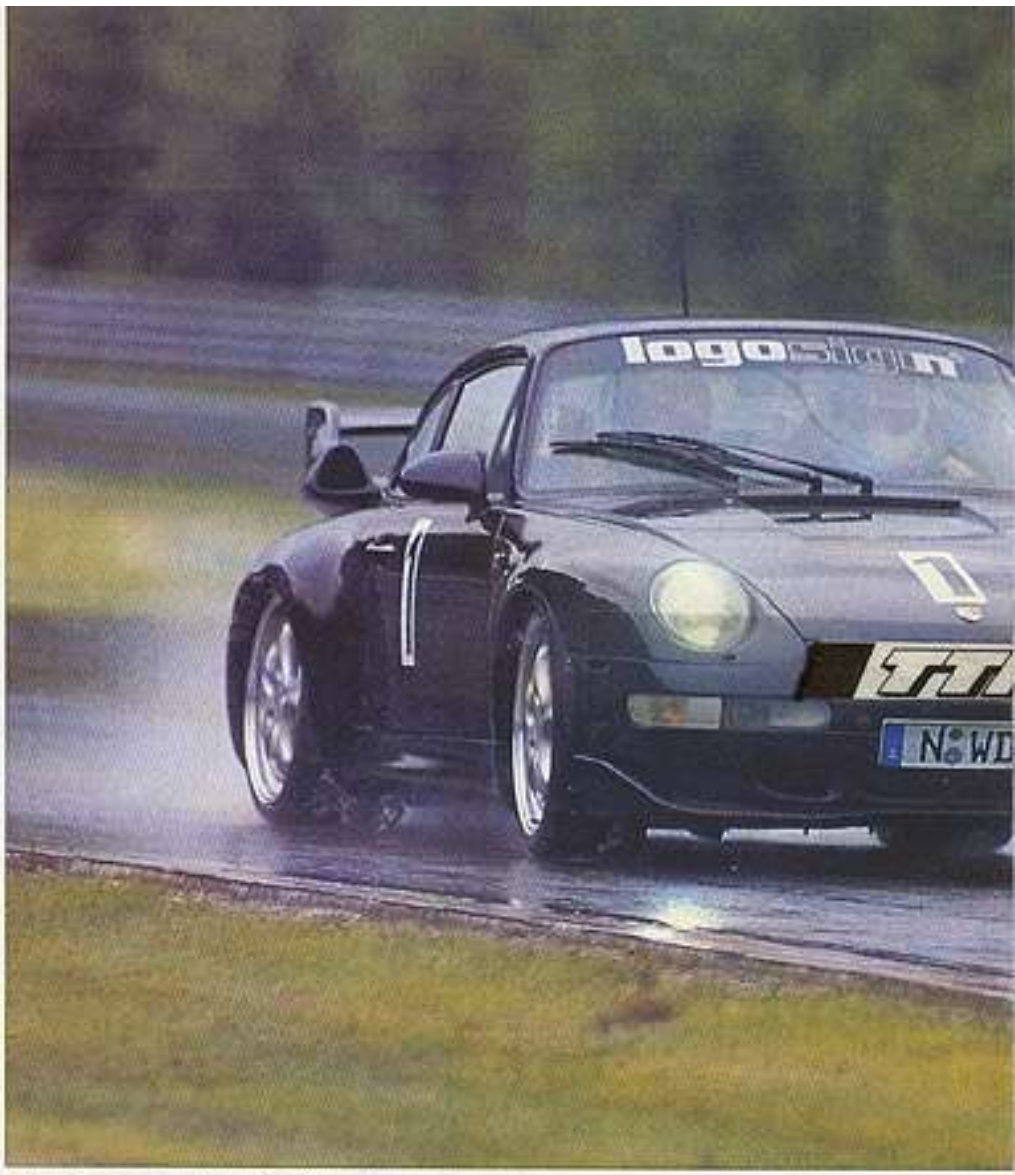


This is real violence. Think about it: 600 horsepower – every one of them TüV-verified – lurking beneath the blunt end of a 993-bodied 911 Turbo 4.

There is no word in the English language adequately to describe this Turbo 4's acceleration. Let's try 'crushing', as in what your vital organs experience; 'warping', which is what it does to your senses; or 'venomous', as in faster than a striking cobra. But no: you and I are still not yet fully sharing the experience.

Let's try a different approach: scale. A 204bhp Boxster is fast; a 300bhp 911 Carrera almost indecently so. There's about 100bhp between them. The last of the air-cooled 911s – the 993-bodied Turbo 4 'S' – had 450bhp, and thus offered a similar step up the performance ladder. Now here we have a 600bhp car which is another equal rung up the ladder. Anything more than this would surely offer the sort of acceleration needed to escape the earth's gravitational pull.

If you buy an early 993 Turbo 4 on the German market for around £45,000 and then drive it straight to the small town of Kolbermoor and hand over a further £33,000 or so to tuning specialist TTP (see page 62), you can experience this rarefied atmosphere for yourself. If, however, such indulgence is beyond you, come with us on a (very wet) lap of Austria's Salzburgring circuit for a brief taste of what the TTP 600 has to offer.

We have the track to ourselves, so we can fully indulge our petroleum-fuelled desires. The only damper – literally – on those dreams of excess takes the form of a torrential downpour. The weather will make us a little more circumspect, granted, but no way is it going to spoil the fun.

Wisps of steam rise from the 600's Pirelli P-Zero tyres as it rests in the pit garage. A trusted member of staff has taken it around the track and declared the conditions to be just about acceptable. The huge grin on his face, though, tells us all we need to know about the condition of the car. We edge tentatively out onto the streaming asphalt and start to warm up the car properly.

The circuit is shaped like an oval that has been cranked in the middle to form a soft 'L', with a couple of new chicanes added to remind you what the middle pedal is for. Not a single metre of it is truly straight. Instead it sweeps and curves its way around both sides of a tiny valley. Because of this – not to mention the appalling weather – the utmost concentration is required. Now imagine the mental effort required to be ready for any surprises from the TTP 600 itself, and you'll appreciate that intellectual overload is likely never to be too far away.

Were the 600's chassis a thinking entity, it would now be sharing that state of mind exactly. A squeeze of the throttle pedal and 530lb/ft of torque has just lit up all four wheels as if the tyres were greased. The car's 1558kg body slithers and snakes as it completely fails to press the Pirellis to the Tarmac. Then one of the front tyres makes a purchase, quickly followed by the other three, and we slingshot forward with a brutality scarcely believable in the appalling conditions.

In case you are wondering, it is certainly not a hooligan application of the loud pedal which brings about this effect, just the sooner-than-expected arrival of torque with which you could

Porsche bar the mid-engined GT1.

Where the TTP 600 really scores for the driver is in the latter part of a corner. The thrill of nudging towards, and over, adhesion all the way from the apex to the exit, then feeling the massive slingshot of acceleration (from what already appears to be quite fast enough, thank you), is unique. This is a 200mph projectile and, as such, is part of an elite crop of hypercars, but the simple fact of reading that maximum-speed figure will certainly not prepare you for the indecently short distance it takes to get there.

Within 300 metres of leaving the 180-degree Nochstein corner the speedometer is reading 172mph. At this point, a temporary chicane forces you to wring every ounce of effort from the standard Turbo 4 brakes. The hazard was put there in view of the conditions to stop drivers arriving at the blind right-hand sweep of Memphis at terminal velocity. Without it, I estimate that over 190mph would be achievable. And this is in torrential rain, don't forget!

If you need any more proof of the car's extraordinary potency, consider this: the TTP-tuned 520bhp 993 GT2 I hitch a ride in afterwards can reach 'only' 144mph before braking for the chicane. And it weighs 400kg less! Other manufacturers' products are just as likely to wilt in the face of the 600's challenge. In a recent German comparison a Lamborghini Diablo SV was trounced in all tests: acceleration, braking, cornering and agility. What more proof do you want?

It is scarcely believable that the addition of an extra 200bhp and 100lb/ft to the 993 Turbo 4 – and nothing much else – can make such a devastating sports car. That it retains the standard car's docility and tractability, not to mention reliability (all TTP conversions undergo a 2000km/1200-mile durability test for TÜV approval, usually at a racing circuit) is even more laudable.

If it all seems so easy (it isn't quite – see the panel on the previous page) you may well wonder why Porsche hasn't done this itself. It could possibly be out of a need for perceived social responsibility, but if the TTP 600 is anti-social, I for one could live with the disapproval it might provoke. Now, where are those keys... ■

Facts & figures: TTP 600 911 Turbo 4

ENGINE
All-alloy, air-cooled, horizontally opposed flat-six. Two valves per cylinder operated by chain-driven single overhead camshaft per cylinder bank. Dry-sump lubrication with separate oil tank. Twin turbochargers with integrated wastegates, intercoolers and twin airflow-metering units. Three-way catalytic converters with separate oxygen sensor for each bank. Bosch Motronic fuel injection and ignition control. On-Board Diagnostic system (OBDII). Twin-inlet control ECU
Capacity 3600cc
Maximum power 600bhp at 6200rpm
Maximum torque 530lb/ft at 5200rpm
Specific power output 167bhp/litre
Power-to-weight ratio 385bhp/tonne

TRANSMISSION
Six-speed manual; hydraulically operated single-plate clutch. Four-wheel drive; variable power distribution by viscous coupling. Rear differential has limited-slip function (25 per cent under load, 40 per cent under braking)

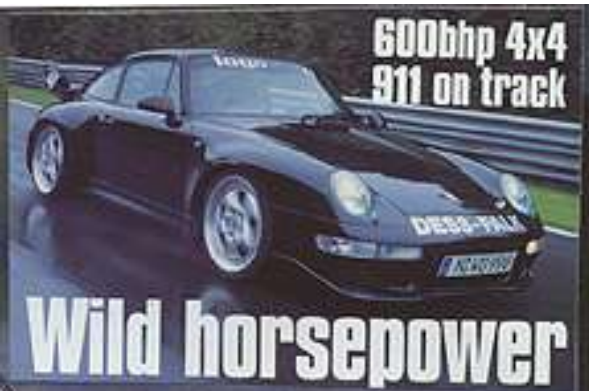
SUSPENSION
Front: McPherson struts and control arms, coil springs, twin-tube gas-pressure dampers, anti-roll bar
Rear: double-control-arm axle, coil springs, twin-tube gas-pressure dampers, anti-roll bar
Ride height reduced by 35mm front and rear by means of H&R springs

BRAKES
322mm ventilated, cross-drilled discs, four-piston alloy calipers, ABS

WHEELS & TYRES
Three-piece RS light-alloy wheels
Front: 9.0J x 18 inches with 235/35ZR18 Pirelli P-Zero tyres
Rear: 11.0J x 18 inches with 285/30ZR18 Pirelli P-Zero tyres

WEIGHT
1558kg (3428lb)

PERFORMANCE (source: TTP)
0–62mph 3.9sec
0–100mph 8.0sec
50–100mph in fourth gear 6.1sec
0–125mph 12.0sec
Maximum speed 200mph



Empowerment

There are no two ways about it: 167bhp per litre is huge amount of power for a road car's engine, and you would be correct in assuming that to achieve this there are significant modifications.

These are applied to both hardware and software. TTP certainly doesn't opt for the 'reprogram and keep your fingers crossed' approach, whereby turbo boost and power are increased at the expense of engine life.

The engines themselves receive larger inlet valves and reprofiled cylinder heads to reduce the compression ratio slightly (to 8.0:1, in fact). Modified rocker arms work the valves, and the valve springs are contained by stronger, forged collars.

Modified KKK K24 turbochargers (like those Porsche uses for the 993-bodied GT2) blow through a larger-than-standard intercooler (to TTP's own design), then through beautifully cast inlet pipes which keep the air from each turbo separate and feed it to two mass-airflow sensors.

Monitoring the sensors is TTP's bespoke Dual-Inlet management system. This additional ECU treats the engine as two entirely separate three-cylinder units, and is smart enough to ensure that power is equalised between the cylinder banks, further increasing longevity. The car's standard Bosch Motronic ECU controls everything else in the usual way, and is otherwise unaffected.

Waste gases exit the turbos through larger, racing catalytic converters (supplied by HJS Motorsport) into a 70mm stainless-steel exhaust which sounds remarkably civilised from within the car – and absolutely terrifying from outside!

Close scrutiny of the torque curve reveals the key to the TTP 600's driveability. At just 2500rpm the engine produces as much torque (251lb/ft) as a normally aspirated 993-bodied 911 Carrera at its peak. Torque rises in a near-straight line through 460lb/ft at 4000rpm to the 530lb/ft peak at 5200rpm. Even when the engine kisses the rev-limiter at 7200rpm there is still 435lb/ft pressing you onwards: still more than the most a standard factory Turbo 4 'S' can muster!

This engine redefines the concept of potency with tractability. It is to the designers' credit that they developed it thus, rather than being tempted to opt for even more outrageous power and torque, and risk ending up with a powerplant which was in all other respects inferior to the standard unit. I suspect that Porsche's own engineers would approve of TTP's philosophy; it is, after all, very familiar to their own. ■

move a freight train. It doesn't matter whether you're in second, third or fourth gear, you can be slithering like an old Volkswagen Beetle on bald crossplies just by using anything more than half throttle. As for first gear, it doesn't take a great leap of imagination to assume you would probably go nowhere, accompanied by the staccato sound of the engine bouncing off its rev-limiter.

For all its readiness to spin away the power, the car still shows a dramatic superiority in cornering grip and braking distances

So we've got the hang of forward motion, and the corners are coming fast enough to be interesting. Even with a ride height 35mm lower than standard, initial understeer is strong, too much so for genuine competition, but probably very reassuring on the open road. There are no prizes for guessing that the ultimate power-on attitude is oversteer, but the transition between the two is unexpectedly brief and requires instant correction with both steering and throttle.

Speeding through the chicane in the pit straight, your arms blur as the steering is sent from lock to lock three times: first to turn in, second to correct (which becomes the turn-in point for the left kink) and third to correct at the exit. Phew!

For a turbocharged engine, particularly one so potent, the torque delivery is commendably linear, peaking at a relatively high 5200rpm. But this doesn't make for a car with which to play lazy tail slides. Indeed, any exuberance needs gathering quickly, because as the rear wheels lose grip so the torque transfers to the front ones, which are then also likely to spin. Choose a 993-bodied RS or GT2 for heroic throttle-steering on a wet track.

Both the aforementioned icons are in attendance today, and we're surprised to find that they are completely outclassed by the TTP 600 on this wet circuit. For all its readiness to spin away the power, the car still shows a dramatic superiority in cornering grip and braking distances. On a dry day it would almost certainly show a clean pair of tailpipes to every road-going

A selection of other Porsches joined us at the Salzburgring in Austria in May – but none was as potent as the extraordinary TTP 600

er hide, and then get Dave Nunn to make another cover, so I took my time. And I made sure that I tackled only one seat at a time so that I always had the other, whether original or re-covered, as a reference point. It was the same when I was cutting out material myself for the flat panels I was retrimming. You just have to sit down for a few moments and work out how to do it.'

With the car's trim now nearing completion, Jones turned his attention to either refurbishing or replacing much of the car's additional equipment. Fortunately, the previous owner, who'd kept the car for about five years, had had the five-spoke Fuchs wheels restored, and new brake discs and

This certainly doesn't look like the best place to attempt a high-quality repaint (above), but Phil Jones's results speak for themselves

pads fitted all round – at a cost of around £1300 – and all Phil needed to buy in this department were two front tyres.

Likewise said previous owner had earlier commissioned Dave Nunn to both re-cover and reline the removable Targa roof, so all Phil had to do was replace the panel's rear seal; mind you, that alone cost £150. 'I have a very understanding wife,' he grins. He also fitted a pair of brand-new door seals (another £38) and, for the sake of reliability, a new original-equipment battery (£70).

'I had a new windscreen fitted, too,' he recalls. 'Within hours of collecting the car in Yorkshire I'd found a tiny crack near where the rear-view mirror is attached, so I had it changed for one with a graduated tint. I claimed on my insurance, but that includes a £100 excess. I mentioned this in

passing to the chap I'd bought the car from, and to my amazement he very generously sent me a cheque for half of it.'

Phil's wife's tolerance was further stretched by new lenses for the fog-lights, front and rear indicators (and the side repeaters, too), and not least the headlamps. 'That lot came to about £300,' he winces. On went a new bonnet badge (£25), and a set of decorative sill trims, interior door handles and door-locking knobs from Prestige Parts of Plymouth. 'I was very impressed by those,' says Phil, 'and they're a good company to deal with, too.'

Other seemingly minor but no less important touches included new stoneguards for the rear wheelarches – they're (very) self-adhesive, says Phil, and you have to be careful to get them in exactly the right spot first time round – and some new felt liners for the door bins. 'Dave Nunn supplied the material, and I cut them out and fitted them. That was quite easy, though, because the material is so stretchy.'

Phil also used his extensive retrim to

Rear parcel shelf (above) Jones fabricated and trimmed himself, fitting a pair of discreet Alpine speakers. White not ideal colour, he says, but toned down by black detail (below)

carry out some subtle improvements to the car's sound system. He started by cutting out a new rear parcel shelf from a piece of special fibreboard bought from a local upholstery supplier. This was then covered with leather and fitted with a pair of 170mm Alpine speakers, specially selected, he says, for their relatively bland appearance.

> *'I was well aware that if I got it seriously wrong I'd have to buy another hide'*

Next he fitted another pair of Alpine speakers at the front, behind the standard grilles in the doors and, finally, in went a Pioneer CD player with a removable front panel for added security. 'Not that I listen to it too often,' he smiles. 'I much prefer the sound of the engine!'

The results of all Phil Jones's hard work and determination speak for themselves. Indeed, it's impossible not to be impressed by the quality of his (and Dave Nunn's) work, or the attention to detail that has turned what was becoming just another ageing 911 into something truly special.

Neither has it cost as much as you might imagine. Phil undoubtedly did well to buy a car that had had £5000 or so spent on it in the preceding five years, but to carry out all of the work we've described here has cost him only another £4000, spread over a period of about a year. And that's not bad at all for a hobby that guarantees as much satisfaction as this one. ■

Useful contacts

Bridge of Weir (leather supplies): 01505 612132
Evans Halshaw (Official Porsche Centre): 01582 897470 (parts department)
Southbound Motor Trimmers: 01264 810060
Prestige Parts (sill trims, door buttons and other decorative items): 01752 766893