

ULTRA RS

WHY THE NEW GT3 RS
OUTPACES AND SIMPLY
OUTSHINES ITS PREDECESSORS.



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Thoughts of Mezgers and manuals fade when the GT3 RS's 4.0-liter flat six settles into a lumpy idle just under 800 rpm. Its uneven, malevolent cadence immediately establishes this 911 as something very different from those that wear Carrera or Turbo badges. It's a bit anti-social, this soundtrack.

Its bodywork isn't polite, either. Giant wings are nothing new on GT3 RSs, but this one looks like it really *was* pilfered from pit lane. Gaping intakes on the rear fenders are new, as are scythe-like extractor vents on the front fenders—said to increase downforce at the front axle by 30%. Porsche claims this RS can generate more than 750 pounds of downforce, three times what a GT3 can and just 20% down on the full-race GT3 Cup.

Walking around the car, two things are obvious: This is the most extreme road-going RS yet, and the gulf between GT3 and GT3 RS has never been greater. Porsche Motorsport appears to have been granted new latitude when it comes to small-volume RS parts, and is making the most of it. Take the roof, which is made from a magnesium sheet measuring just one millimeter thick.

"Only one company can make it as wide as we need, and it's in Korea," says GT3 development boss Andreas Preuninger. The sheet is shipped to Canada to be stamped into shape on special machines. "It goes to the U.S. next, for a coating you need only for this material, and then to Germany to get painted. Finally, it goes to Porsche and onto the car. So the logistics chain is a nightmare."

The roof is 2.2 pounds lighter than its equivalent in aluminum and 1.8 pounds lighter than it would be in carbon fiber. Is it expensive? "It's a little bit more expensive, but not multiple times—maybe 10-15% more than carbon fiber," answers Preuninger, who feels the effort was worthwhile because it saves weight at the top of the RS. The idea came from 2010's GT3R Hybrid race car. "It wasn't exactly the same thing. It was thicker and heavier, but lighter than a carbon-fiber one at that time. We said, 'Okay, now it's time to try to put it on a street car.'"

New ideas for weight savings continue with the rear bumper. It is rendered in lightweight PUR, a variation on the polyurethane used in regular Porsche bumpers. The areas between its surfaces are filled with hollow balls instead of the usual filler, saving two pounds at the extreme rear of the car. Unlike some RS parts, this one costs no more than one rendered in the material used for a standard 911 bumper. Is it more vulnerable to damage? No. Are there any downsides? None apparent.

"Right now, it's only the back bumper because the RS uses the same front bumper as the GT3," says Preuninger. He grimaces when asked if the material will make its way into normal Porsches. His grimace has less to do with a desire to hold onto something his team pioneered and far more to do with an intimate knowledge of just how hard it is to find fat in today's Porsches.

"That's why these projects are so important," he says, brightening. "We can experiment, because we don't have as much daily volume." Those experiments have become quite creative, going far beyond the expected aluminum, carbon-fiber, and lightweight plastic components, all of which are employed throughout this RS. These are, after all, the engineers who shaved the *back of the carpeting* in the 2012 GT3 RS 4.0. The new RS employs a lightweight wiring harness. It saves 3.3 pounds.

HEADING ONTO THE TRACK at Bilster Berg, a private circuit in west Germany created with input from Walter Röhrl, the GT3 RS feels more immediately approachable than its predecessors. That's no small feat for a 500-hp, rear-drive 911 on an unfamiliar track bristling with con-

Gray-faced tach with yellow marks and needles (left) is a GT tradition. The shallow recess in the GT3 RS's hood (below) ties in with its new double-bubble rooftop. It also recalls the cowl vent recess seen on all air-cooled 911 hoods, while one GT engineer views the "stripe" as a replacement for the stickers used on 996- and 997-based RSs.



sequences. The hilly, 2.6-mile course features 19 turns, blind crests, plunging bends, off-camber sweepers, and tricky rises in critical braking zones.

Left to make its own choices, the PDK-S gearbox is prescient, seamless, and brutally effective. It's a welcome partner here, eliminating the need to think about shifts while still allowing the driver to grab a gear and hold it. The shift paddles have shorter throws than a GT3's, which is meant to make them feel more sporting. It does.

Mechanical grip punts the RS into a new category for a 911. The RS wears 265/35R20 front tires and 325/30R21 rears to the GT3's 245/35R20s and 305/30R20s. You feel the difference up front first. The turn-in almost makes the

RS feel front-engined, in a good way. Steering response is quick and precise; the RS's wider nose goes where the smaller, 14.2-inch steering wheel tells it to—without requiring big-time trail-braking. The rear-wheel steering is limited to 1.5° and is transparent in use.

Traction through and out of turns is deeply impressive. Credit must go to the Michelin Pilot Sport Cup 2s, which are the same size as the tires on the 918 but carry an N1 designation since they're optimized for the rear-engined, 3,131-pound RS instead of the mid-engined, 3,692-pound 918, which twists all four tires with 944 lb-ft of torque.

This is the first production 911 with different wheel diameters front to rear, and the 20/21-inch setup leaves the new RS looking vaguely 935-ish. The larger rear tire circumference increases the contact patch, just as it did for the 935, and that bigger footprint is obvious when leaving a tight bend with the throttle pinned. As in the

standard GT3, a variable electronic differential and computerized torque vectoring play a significant role—they just have more tire and track width to work with.

Thankfully, the GT3 RS is not an example of grip over handling finesse. Unlike some cars on R-compound tires, it doesn't feel like it has a nasty surprise in store as you probe its limits. Its chassis feels intuitive and fully sorted. The electric-assist steering is communicative, the variable PASM dampers are well judged, and the two-stage safety system is unobtrusive. Delicate throttle or brake adjustments have a direct effect. This is still a 911, but new cornering capabilities take the pace to a new level. That's where the initial confidence fostered by this RS comes into play, sucking you in and pulling more out of you as a driver. Driven to eight- or nine-tenths, it requires skill but isn't scary—though even a momentary loss of concentration while chasing another RS around Bilster Berg translates into a big gap.

There's a temptation to overdrive the car to catch up, but patience and a light touch are a better plan for mere mortals—because things happen very quickly in this 911. Porsche says it can get to 60 mph in 3.1 seconds, 0.2 less than the GT3. The 4.0-liter flat six is rated at 338 lb-ft of torque—just 13 lb-ft more than the 3.8-liter GT3—but it's



more accessible more of the time. Do you miss the GT3's 9000-rpm redline? Maybe in theory and emotion, but not in practice. The 4.0 revs keenly and is happy to visit the limiter at 8800 rpm. Things get frantic once the tach registers 7000, but horsepower falls off past 8250 rpm—so shifts at 8000-8500 help to smooth things out. Skipping PDK's Sport mode does, too, with its gimmicky, unsettling "kick" on full-throttle upshifts. The \$9,210 ceramic-composite brakes, also borrowed from the 918, are as stunningly effective here as they are on the GT3 and GT4.

In performance terms, the RS is in a separate category from the GT3, and a different galaxy to the GT4. There's far more speed than a newcomer will access in one day,

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so a ride with RSR driver Jörg Bergmeister seems like a good idea. It's a wild lap (you can find the video on PCA's Facebook page). As Bergmeister extracts everything the RS has to give, the car's most impressive achievement is evident: It engages and excites drivers with limited ability, but can still offer serious thrills to a seasoned pro.

THE TIRES THAT MAKE the RS's performance possible didn't come easy. They required changes to Porsche's Zuffenhausen production line, since the sleds that deliver wheels to the workers couldn't accommodate the 21-inch tires. "To make such changes, you must stop the line," says Preuninger. "You lose cars, and you wouldn't believe what this sled cost. On the computer, it was a no-no. But we wanted that contact patch, we wanted to know how a

The RS got new wheel hubs, wheel bearings, and hub carriers. The front strut bearings and rear damper bearings are fitted with ball joints for increased precision. The front springs are unchanged, but the setup is stiffer at the rear and uses helper springs. Due to the taller rear tires, front ride height is a few millimeters higher.

The RS follows recent RSR practice by directing fresh air to the engine from its rear fenders. Turbo intakes are repurposed to feed one air box instead of two intercoolers. The runners are new. "We needed the biggest diameter we could get," says Preuninger. "There were penalties if we used Turbo parts, which must work with a Cabriolet roof. Only the first part, at the fender, is the same."

The flat six fed by those intakes is based on the 3.8-liter GT3 engine. Bore remains the same, but stroke is up by



911 feels with that much tire. We said, 'Okay, we need this amount of money.' It was a very high six-digit number."

Squeezing the rear tires into Turbo fenders was the next trick. "We built a completely new inner fender and attached it differently, but the mounting points had to be found and the technology to weld them had to be determined," says Preuninger. "We went to the board and said, 'Okay, please help us. We need production guys—we need everybody—to think of a solution.' And we found a way."

Clearance challenges weren't limited to the rear end. Even now, the front tires can touch the inner wheel wells. "Not at full lock, but maybe at half lock," says Preuninger. "That gives scraping noises, but we had to fit this huge tire in there. Otherwise, we would have had to use GT3 front tires, and that means no big rear tires—it would be totally out of balance. And then we would have been confined to the GT3's mechanical grip category."

four millimeters. New titanium connecting rods feature higher-grade bolts with revised threads. The crankshaft is new and rendered in ultra-pure 361 steel, which is also used in the crankshaft of the Le Mans-winning 919's V4. The steel is melted and remelted, over and over again.

"They check the purity and, once it is pure enough, stop remelting it," says Preuninger. "The end product has to be completely pure, as tiny imperfections are where cracks begin." Was it necessary? "You have a lot of stroke, so you have more leverage, more stress. We don't want it to fail at 80%, which might be a lot of miles. But if a crankshaft fails, well, that is not such a good idea. So we invested here, heavily. The price is five or six times that of the normal crankshaft, so it's a high four-digit number."

The PDK-S gearbox is similar to the standard GT3's, but has a revised final drive to offset the taller rear tires. Like the GT3, the RS uses active engine mounts that can



The RS is available in four colors. GT Silver and White are "free," while Lava Orange and Ultraviolet add \$3,140. RS-specific door panels with canvas release straps and carbon-fiber trim are standard, as are full bucket seats with electric height adjustment. The European GT3 RS's half roll cage and polycarbonate rear windows aren't available in North America. The audio system and air-conditioning can be deleted to save weight.



Pit Speed button is unique to the RS and can be set to limit the car to a predetermined speed. Steering wheel is 0.8-inch smaller than the GT3's. Full leather with Lava Orange stitching and black Alcantara trim adds \$3,480.

The GT3 RS's hood, front fenders, engine lid, and wing blade are rendered in carbon fiber. The side sills between its wheels are unique and 0.8-inch wider than those on a 991 Turbo. Ultraviolet, a \$3,140 special color, is simultaneously wild and subtle. Dark blue in some light, it goes purple in hard sun. This RS test car is optioned with silver wheels (\$325) and ceramic-composite brakes (\$9,210).



be stiffened to sharpen handling. And, like the last GT3 RS, it exhales through a titanium muffler.

ON THE RURAL ROADS near Bad Driburg, the GT3 RS's high-mounted rear wing is a big improvement over the last RS's—you can actually see vehicles behind you. Given the new car's visuals and capabilities, its road manners are a real shock. It may be an extreme car, but impressive duality is made possible by advances in damper tuning. Chassis compliance is no worse than the GT3's, and may be slightly better. While Germany's roads are notorious-

ly smooth, exceptions do exist. On them, the RS feels nearly as benign as a Carrera. Only once is it jostled in a way that would disturb the average 911 customer.

If that wing wasn't in the mirrors, you might even be fooled into thinking the RS *is* a Carrera. PDK "helps," shifting into higher gears at low speeds. While grabbing a low gear unmasks the 4.0, it's here, on lonely lanes, that the connection of a manual transmission is missed most. Attacking a twisty byway reveals a remarkably precise road car, but there is no hiding the width that aids the RS on track. It's an inch wider than a GT3 and nearly

three inches wider than a Carrera. Placeability is affected, and the latent performance can make for an exercise in frustration—to the point you're left wishing for a track.

That raises philosophical questions, and Porsche is aware of them. The RS turned a 7:20 on the Nürburgring Nordschleife, and calculations suggest it may be able to turn a 7:17 in the right conditions. For comparison, the 620-hp 997 GT2 RS turned a 7:18, the Carrera GT a 7:28. Does Preuninger see a 911 going under seven minutes?

"Technology goes on and on and on—so never say never," he chuckles. "It's a James Bond theme that goes

for us, as well." He does see a shift coming, though. "I mean, who is driving the 7:20s? For the average customer, it's *much* more important to have a consistent, stable car, a car they have confidence in, a car they can rely on, a car that's communicative, and a car that can be as fast as possible with their own limited capability. I think there is a market for emotional, analog, puristic, characterful cars. Five or seven years ago, we could address the purists and track rats with the same car. But not anymore. That's the problem. We've lost some customers who want a puristic car. For me, this was a good test for the GT4.



As with the 991 GT3, rear-wheel steering provides improvements in stability and agility. Rear wing is truly massive, while rear fender inlets pressurize the engine intake at speed. Porsche says that's worth up to ten horses.

It hit home. This was a message to Porsche: 'Please do more analog cars.' It doesn't matter if they are the fastest on track or not. The pure motoring car, the satisfying car you take out for a drive on a Saturday morning, just for a spin, just to make you grin. The GT3 edged away a little bit and made room for something else."

That would be the GT4, which begs a question: After driving the GT4, GT3, and GT3 RS, which one for pure fun? Ignoring price for a moment, the GT4 may be the most engaging choice and the most easily extended. But, with a Carrera S engine, it can't match either GT3 for ultimate emotion—and it certainly can't match their performance. While the GT4 is the only choice for those who must have a manual, some will pine for the next rung up whenever a GT3 or GT3 RS blows by them on a long straight at Road America or a Sebring sweeper.

Between GT3s, the RS's advantage is track dependent. "Mechanical grip is a lot higher at lower speeds," says Preuninger. "But the faster you go, the wider the gap becomes due to the RS's aero advantage. It begins at about 150 km/h (93 mph), and then the distance between these two curves is substantial."

This is where the state of Porsche Motorsport's offerings becomes fascinating. Technical developments and market interests are leading to model lines within model lines. Roughly \$45,000 separates GT4 from GT3, and GT3 from GT3 RS. We suspect more GTs will come from a department that has been moving from one success to the next. A simpler GT3 with a manual gearbox is one

possibility. A GT4 RS is another, as is a truly unhinged GT2 that recalls the 964 Carrera 4 Lightweight. Or not.

Do current GT offerings represent good value? Few would say the GT4 is anything but a screaming deal. The GT3 remains a strong value based on its performance and usability. Against the GT3, the new RS deletes 22 pounds and adds 25 hp, 13 lb-ft, and 20-millimeter wider tires all around. It doesn't sound like much, but Porsches rarely measure up well in that kind of analysis. Their benefits are subtler, seen in cumulative performance.

No previous GT3 did subtle brilliance better than the 997 GT3 RS 4.0, a \$185,950 car three years ago. If one can check nostalgia and personal preferences at the door, the 991 4.0 leaves the 997 4.0 for dead in terms of technology, equipment, pace, and execution—and the old car was an absolute masterpiece. Now consider the 2016 RS's price in light of the RS 4.0's price in 2012, or the skyrocketing values of used 997 RSs and RS 4.0s.

Is this the best RS to date? For those who take to the track, the answer is yes—by a continental mile. 🍷

2016 911 GT3 RS

Body Type	Rear-engined, rear-drive coupe
Engine Type	Flat 6, normally aspirated
Valvetrain	DOHC, 4 valves per cylinder
Induction	Direct fuel injection
Bore & Stroke	102.0x81.5 mm
Displacement	3996 cc
Compression ratio	12.9:1
Power	500 hp @ 8250 rpm
Torque	338 lb-ft @ 6250 rpm
Transmission	7-speed PDK
Suspension: front	MacPherson strut
rear	Multi-link
Brake calipers: front	6-piston monobloc
rear	4-piston monobloc
Brake rotors: front	15.0 inches, vented
rear	15.0 inches, vented
Wheels: front	20x9.5 inches
rear	21x12.5 inches
Tires: front	265/35ZR20
rear	325/30ZR21
Length	178.9 inches
Wheelbase	96.7 inches
Height	50.8 inches
Width (w/o mirrors)	74.0 inches
Track, front	62.5 inches
Track, rear	61.3 inches
Curb weight	3,131 pounds (base)
0-60	3.1 seconds (mfg)
Top Speed	193 mph (mfg)
Base price	\$176,895 w/destination

The front fender extractor vents dissipate heat and are claimed to increase downforce at the front axle by 30%. For more photos of the GT3 RS or the full press kit, visit www.pca.org/panorama-07.15-rs

