

THIS MODIFIED 991.2 GTS
FROM BGB MOTORSPORTS
SHOWS HOW ACCESSIBLE
MORE POWER AND
PERFORMANCE ARE.

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PHOTOS BY **NATE DEREMER**

Big Bird



A proper, low, sport exhaust rumble at idle builds to an authoritative roar when power is applied.

It is not overly aggressive, just a nice-sounding exhaust. In other words, there is no true warning of what is to come. But give it the beans, and the roar is quickly replaced by an induction sound that would please the God of Thunder himself. Imagine a vacuum cleaner inhaling a blender full of ball bearings, and you'll be in the right ballpark. All the while, the g forces build rapidly against your chest. The immediate sensory overload of power and noise results in a single, uncontrollable, physical manifestation: giggling like a child.

The cost of naturally aspirated Porsche horsepower has always held a premium. Air-cooled power gains have their price spectrum, and almost every level has five figures attached. The Porsche factory product does a fantastic job for the majority of owners, but what about those enthusiasts who want to play with the menu a bit?

Owners of air-cooled Porsches looking to channel their inner Oliver Twist have established methods at their disposal, such as the Steve Wong chip, SSI heat exchangers, and Dansk mufflers. Adventurous owners of modern Porsches looking for big power have excellent solutions ranging from VF Supercharging, TPC Racing's turbocharging systems, and finally, full engine builds. But options for those seeking moderate power gains

without major modifications were severely limited, until Porsche flipped the script in 2017.

When Porsche unveiled the 991.2 model 911 in 2016, it announced that from then on, all (non-GT) 911s would be turbocharged. The move allowed Porsche to use a smaller-displacement engine to produce more horsepower—and more importantly, more torque—than the preceding models. This move was a win for all involved. Porsche gained better emissions ratings, and owners got more power while still keeping a classic Porsche flat-six sound.

Porsche has long been a pioneer in turbocharging technology on the track and the street. But it was now using turbo engines in every model across a range, not just the traditional halo Turbo and Turbo S editions. The

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only naturally aspirated engines in the Porsche fleet at present are from the Motorsports division: the 911 GT3 and GT3 RS, the limited-edition Speedster, and the new 718 Cayman GT4 and 718 Spyder.

The advent of the all-turbo 911 era has left tuners salivating. It's no secret Porsche over-engineers its products; it's one of the reasons Porsches are so good, and we love them for it. Porsche engineers have been overheard admitting that the base 911 and the 911T can handle over 500 horsepower in stock trim. So why not play with that turbo formula to see if a "normal" 911 can match, say, a GT3?

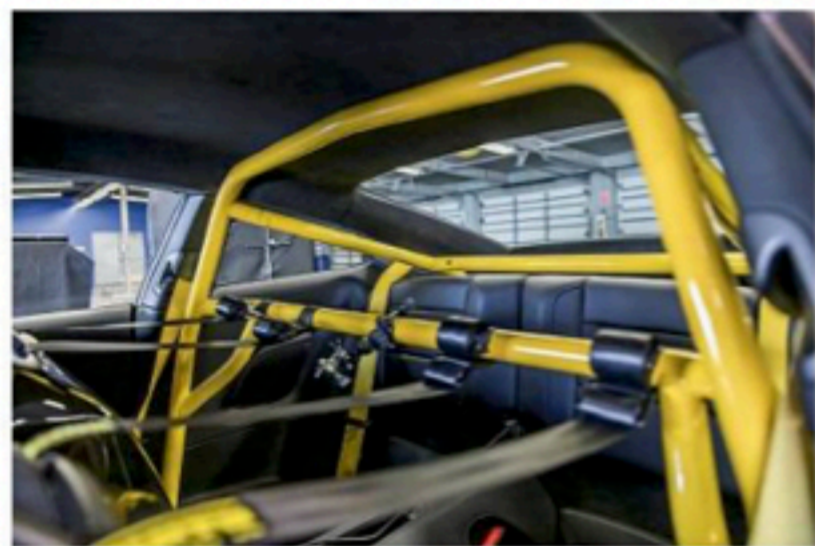
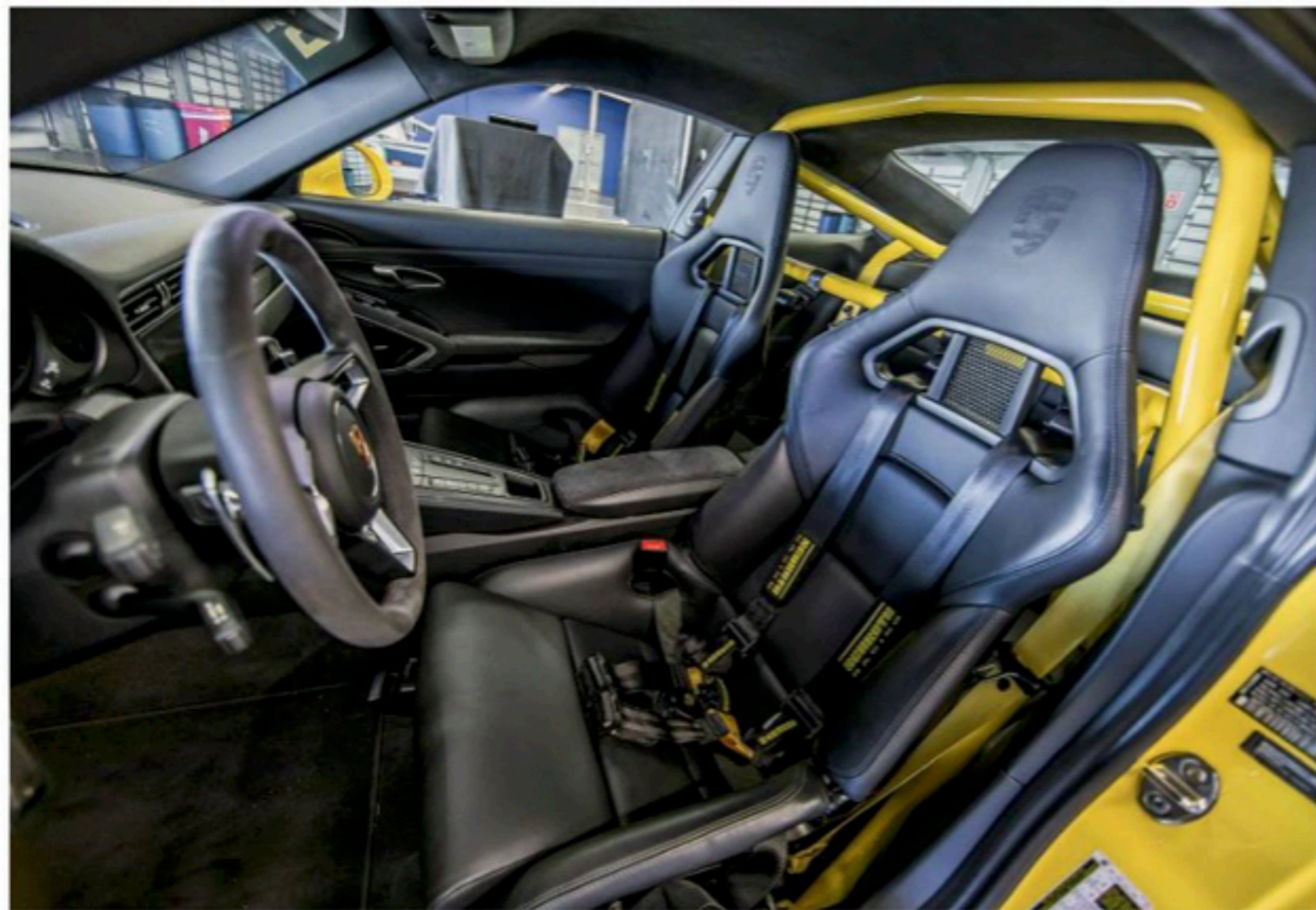
All 991.2 models (base, S, 4, 4S, GTS, and T) share the same 3.0-liter engine. Porsche uses different size turbochargers, intake/exhaust, and computer program-

ming to create power differentials across the range. This configuration sharing is great for Porsche's efficiency and bottom line, but it also means massive performance gains are available across the board for enthusiasts.

THE ART OF THE "SLEEPER" is one that has been chased by enthusiasts for years. In many circles, a 911 is difficult to classify as a "sleeper," but it can certainly be argued that a stock-looking 991.2 of any trim that can accelerate and handle like a GT3 fills the bill just fine.

Many shops and companies around the country are ready to take your money in exchange for claimed horsepower or performance gains. We at PCA prefer to do our homework and want you to do the same. Before you visit any shop to work on your car, check them out

horsepower in stock trim. So why not play with that turbo formula to see if a "normal" 911 can match, say, a GT3?



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and make sure they have the experience and pedigree required to take care of your Porsche.

One well-known shop within the PCA Club Racing community is BGB Motorsports Group in Ormond Beach, Florida, whose principal owner and founder is John Tecce. BGB has been preparing cars for PCA club racers for years, as well as preparing and competing in IMSA, the Pirelli World Challenge, and various other racing series. This knowledge and experience gained at the track has been harnessed by BGB to modify cars for the street.

BGB has been swapping 3.6-, 3.8-, and 4.0-liter engines into Caymans with great success. While Porsche has yet to build a GT4 RS, BGB has, along with interesting projects such as turning street GT4 Caymans into Clubsport versions, PDK swaps into street GT4s, and transforming

a flood-ravaged street car into a track weapon.

The underlying chassis of the 991.2 is nothing new to BGB, and the art of turbocharged power was an intoxicating allure. They could have started anywhere in the 991.2 lineup due to the shared engine architecture, but their experience led them to the GTS model as the best platform for this project. In Porsche speak, the GTS models are generally the most performance-oriented version of the platform, and the 991.2 is no exception.

"We frequently visit the location of the Porsche Track Experience school in Alabama," said Tecce. "During my research period, I looked up and saw a fleet of yellow and red 991.2 GTS school cars as far as the eye could see. It was a sign from above." Reports from several European publications showing the 991.2 GTS lapping the Nürburgring one second faster than the 991.1 GT3

117 horsepower and 77 lb-ft of torque at the wheels from an ECU file upgrade that was the size of an email attachment!"

left no doubt it was the platform of choice.

BGB sourced a perfect-spec used Speed Yellow GTS coupe with low miles and PDK, and without a sunroof, center-lock wheels, or rear-axle steering. In a cosmic twist of fate, Tecce discovered after purchasing the car that it was a former Porsche Track Experience school car. "Big Bird" was born.

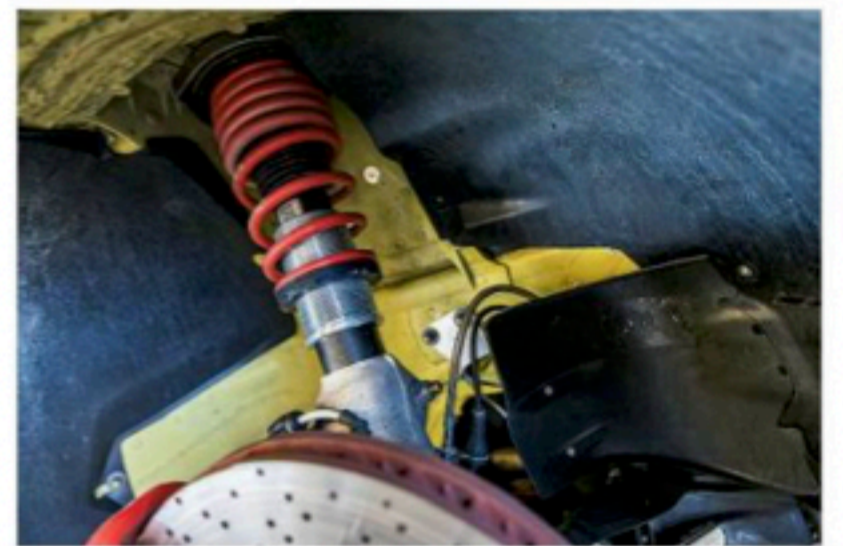
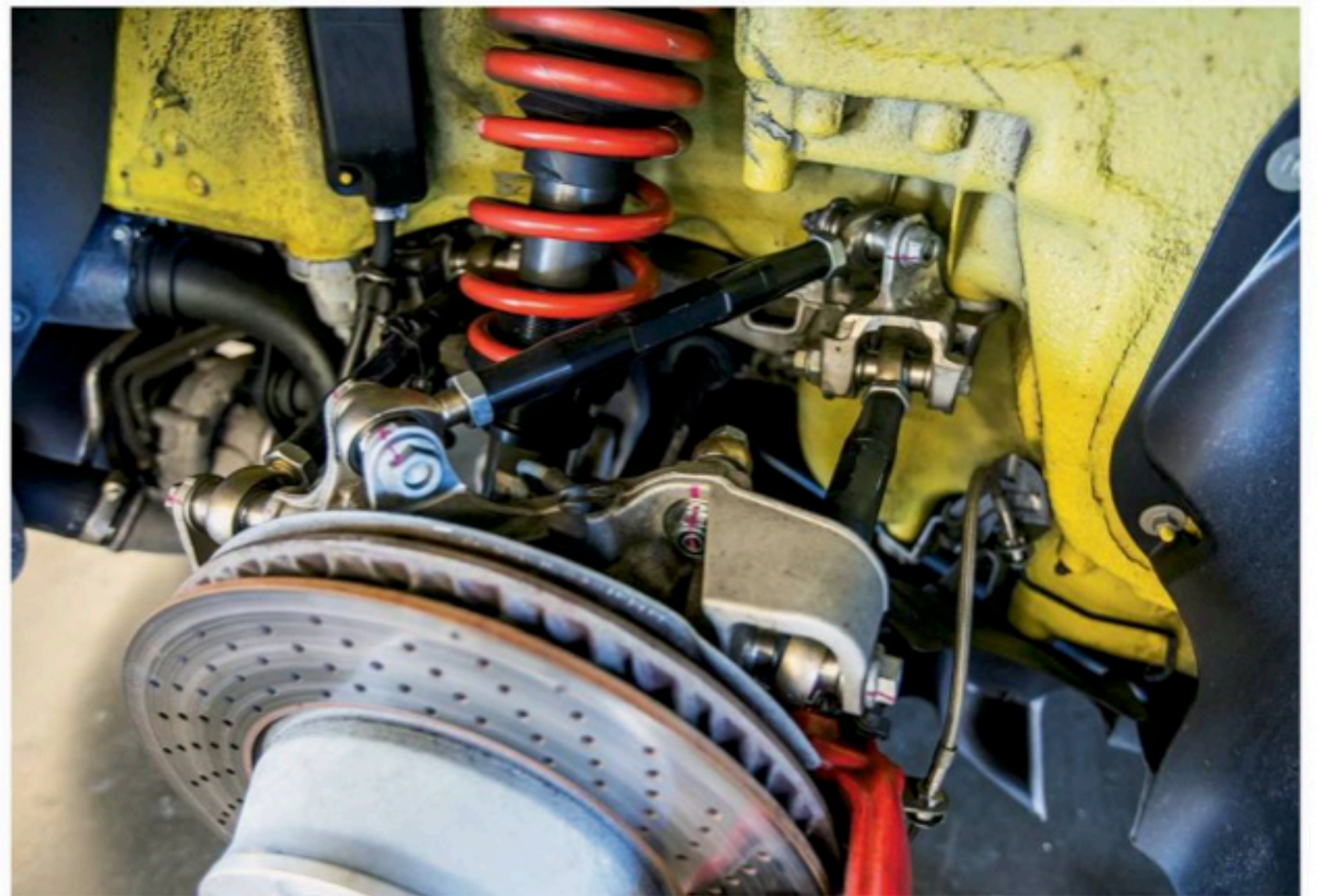
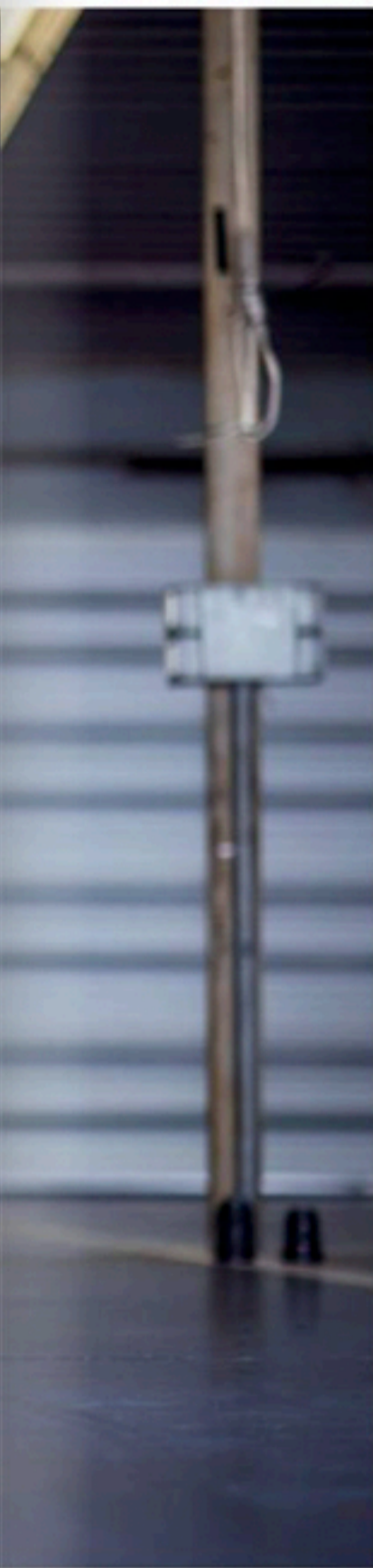
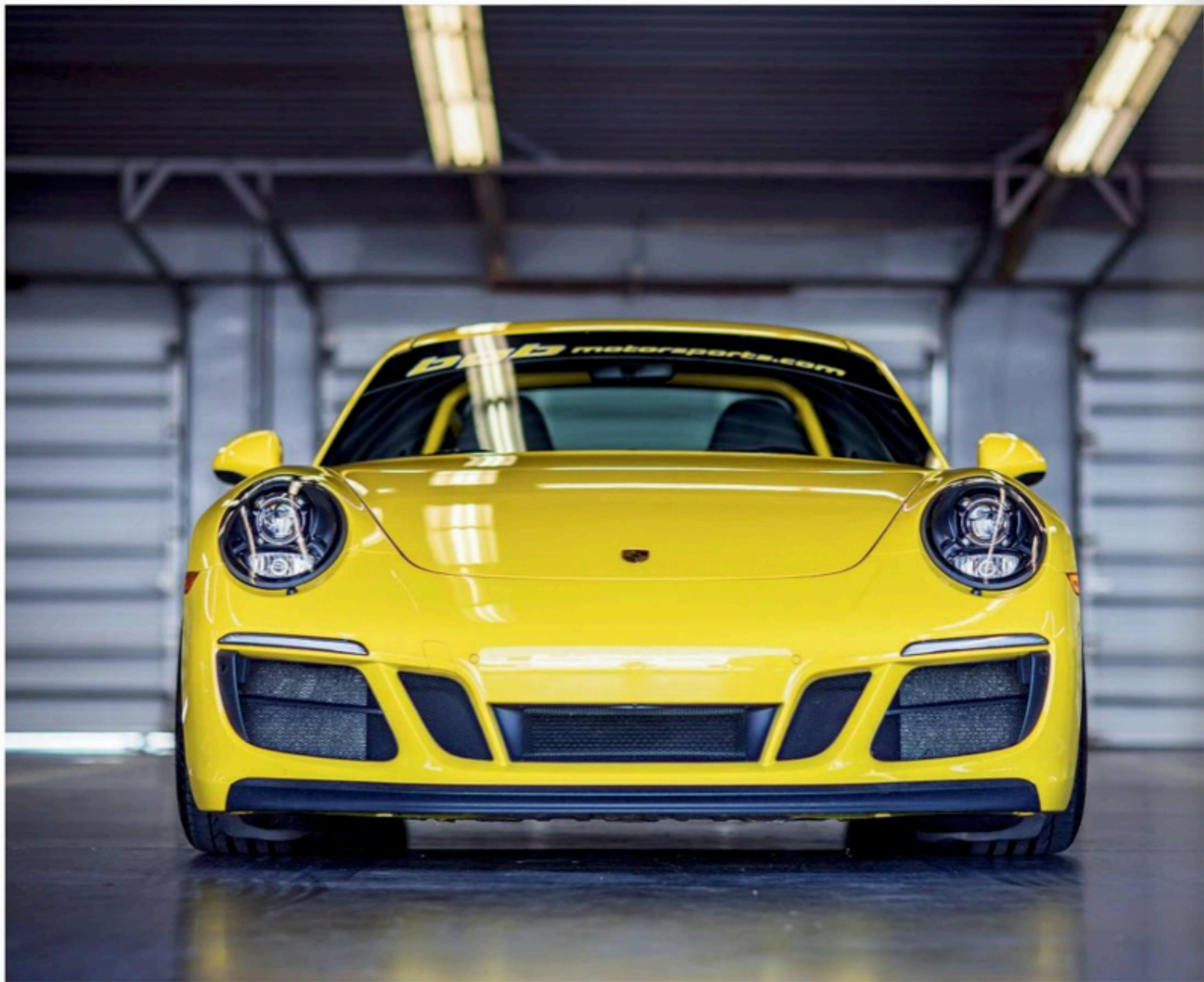
Before the transformation could begin, Tecce first had to know what he was dealing with, so Big Bird made a trip to the dyno. The stock GTS made impressive numbers that were in line with Porsche's reported performance, but there was much more to come.

WHEN MAPPING THE PROJECT, Tecce knew he needed to work with proven suppliers for any component BGB would change on Big Bird. "My good friends at Cobb

Tuning were repeatedly telling me I would be blown away by the performance increase from their latest Off the Shelf [OTS] mapping for the 991.2," said Tecce. "They were eager for us to sample the latest offering from their tuning platform and I love learning new processes, so remapping the ECU was the first revision."

It didn't take long for the results to come in, and they were astonishing. After flashing the ECU with the Cobb Accessport and OTS map, Big Bird was back on the dyno. "I almost fell out of the driver's seat when I saw the numbers," said Tecce. "We picked up an astonishing 117 horsepower and 77 lb-ft of torque at the wheels from an ECU file upgrade that was the size of an email attachment!" To put that in perspective, a gain of that magnitude from a naturally aspirated flat-six engine would've required spending well into the five-digit territory.

Unless you know full buckets weren't an option on the GTS, the Speed Yellow harness bar and Schroth belts are the only hint that Big Bird is more than stock. PDK is perfect for this project.



This setup allows the car to be corner-balanced much like an adjustable ride height coil-over suspension would.

With the Cobb ECU tuning now marking BGB's record for dollar-per-horsepower/torque gained, the shop was excited to continue. Following the stated goal of making Big Bird the ultimate street and track performer, BGB set about adding an IPD intake plenum, BMC high flow filters, and a Cargraphic cat bypass downpipe. With all parts assembled, it was time for more ECU fine-tuning and dyno runs.

The final results had Big Bird putting down 473 horsepower at the rear wheels and 487.94 lb-ft of torque. Diving deeper into the power curve reveals that at 4000 rpm, Big Bird makes 217 lb-ft of torque more than a 991.1 GT3. The 911 is already fantastic at digging out of corners due to the engine weight being over the driven wheels. Now Big Bird is touting big-block V8 levels of usable torque from 2500 rpm and is ready to rocket out of an apex.

WITH BIG BIRD making gobs of horsepower and torque, BGB focused on making the car turn and brake better than anything short of a racing car. BGB went with a tried and true track package for the brakes. They flushed the brakes with Castrol SRF racing brake fluid, upgraded the stock brake lines to steel braided ones, and installed the same brake duct cooling found on the GT3 and GT4 Clubsports. Then it was time to upgrade the brake pads to Brembo RE10 endurance racing pads, which have proven effective on many of BGB's street and track cars.

"A better performing brake pad means less time spent on the brake pedal, which equates to less heat in the braking components," said Tecce. Big Bird would wear comparable equipment to any GT3 it might encounter at a track day, and from experience we can say that the system works very well.

It also negates an \$8,000-plus expense in favor of one that costs about \$1,000, which is nice.

Once the car could go and whoa with the best, BGB needed to address grip and handling, since Big Bird is a bit porkier (about 88 pounds) than its GT3 sibling. Every stock suspension component that was not adjustable was swapped for an adjustable alternative to match what comes from the factory on a GT3. "At a minimum, whether it's a Cayman or a 911, the car needs more camber in the front for the racetrack, and it needs an adjustable rear tie rod end to fine-tune the rear toe settings on the alignment pad once the camber is changed," said Tecce.

The car's suspension was ready to go at this point for anyone considering a similar project, but due to a constant desire to test new things, BGB opted to continue with some additional mods. Tarett Engineering is well known to Porsche racers for its suspension components, and BGB was interested in testing its new spher-

ical bushing kit for the 911's five-link rear suspension. With the new components set up and adjusted to match factory GT3 settings, Tarett adjustable sway bars and drop links were installed to complete the package.

Big Bird came from the factory with Porsche Active Suspension Management (PASM) dampers, and instead of ripping them out for a full coil-over setup, BGB elected to upgrade the PASM dampers with slip fit adjustable collars and stiffer springs from H&R. This setup allows the car to be corner-balanced much like an adjustable ride height coil-over suspension would. It also negates an \$8,000-plus expense in favor of one that costs about \$1,000, which is nice.

To further PASM's adjustability, BGB turned to notable Porsche racer and tuner Mike Levitas and his son Harris at TPC Racing, and their DSC Sport Controller.

Opposite: Porsche's center radiator kit helps keep Big Bird cool. **Above:** Fully adjustable suspension components aid the personality shift between street and track, while steel brakes provide ample performance in either environment.



For those unfamiliar with this system, it is a plug-and-play controller that replaces the factory PASM controller to effectively transition the system from a passive to an active suspension.

With some over-the-phone counseling, Tecce had a custom tune figured out and ready to go into Big Bird. This modification would help dial out anticipated understeer conditions on the track while improving the ride quality for the street.

You might be wondering if these suspension mods compromise the street aspect of the GTS for track performance. I initially thought the same thing, but then I took Big Bird for a spin and was pleasantly surprised. Does the car float down the road like a 1972 Cadillac Eldorado? No. Does it ride like a spine-mangling race car? No again. The ride is firm but not punishing, and not as harsh as many other track-modified or pure track-day-only cars. If I were to pursue the same course of action for a daily driver vehicle, I would opt to skip the full spherical suspension and leave some rubber in for street ride compliance. But even with the full track setup, the ride will not punish you; it just might be a little noisy for daily driver duties.



Acceleration is strong, linear, and glorious. Put your foot into the right pedal for more than a few seconds

SINCE THE GOAL of this build was to create the ultimate Jekyll and Hyde 911 that could be driven comfortably on the street but perform with the best the Porsche Motorsport department has to offer, some safety modifications were a must. "We tell all our customers we have an obligation to keep them safe, so safety harnesses and a four-point bar is something we make them buy first, well before we suggest getting into power mods," said Tecce.

BGB's harness bar of choice for the 991 is one it developed that does not sacrifice the rear seat, while still providing a solid mount for the preferred Schroth six-point harness setup. Tecce decided to go all in on this build and sourced a pair of factory Porsche folding carbon-fiber bucket seats for Big Bird. With snug, supportive buckets and a stable harness platform installed, Big Bird was ready to fly.

Unless you see the half cage in the interior, this car looks like a perfectly stock 991.2 GTS from the outside. Once seated in the Porsche Sport bucket seats, everything (again minus the cage) looks perfectly normal. The Alcantara-swathed interior is like any car with the GTS interior package. The contrasting Speed Yellow stitching looks handsome, sporty, and exactly at home. There are no devices or screens attached to the dash, nothing that would signal this car is anything but as delivered from Stuttgart.

The rumble at startup signals that the car is equipped with Porsche Sport Exhaust at a minimum, maybe something with a touch more spice. I make sure PSE is on and the car is set to Sport mode, adjust the mirrors, and get myself familiarized with the cockpit. As I roll away from the parking spot, there is a mechanicalness to the

and you might need a good lawyer on retainer, because you will be well into arrestable speeds.

suspension that is the first giveaway that something is different; it makes noises on surface changes that a stock 911 would not. The noise is due to the spherical components and, again, is probably something I would change were Big Bird going to be my daily driver, but that's strictly personal taste.

A leisurely drive through the paddock at Sebring International Raceway failed to reveal any of the tricks Big Bird had up its sleeve. The car drove and reacted perfectly, exactly as one would expect from a low-miles 991.2. As traffic cleared, I pulled onto the main road (if you can call it that) outside the track and eased on the accelerator. The car didn't feel overblown, and there was no on/off throttle response or dartiness to the handling; it just drove like a slightly louder version of what you would expect. Then I opened it up. I have a long

history with tuned cars and loud exhausts, so I thought I had an idea of what to expect. I was wrong.

The overpowering memory of driving Big Bird is the induction noise—the other-worldly, swooshing cacophony of rushing air and spooling turbos would make a great ringtone. The aftermarket air filters and cat bypass downpipe certainly play a big role here, but credit has to go to Porsche for its inclusion of a sound duct in the 991. In an era where some manufacturers resort to faking their engine and induction noise through the stereo, Porsche has gone the simple route and installed a pathway allowing that glorious sensation directly into the cabin. At full throttle, it feels like the intake is in the headrest, and it is awesome.

Acceleration is strong, linear, and glorious. Put your foot into the right pedal for more than a few seconds

Big Bird feels right at home lapping the famous road course at Daytona and has plenty of luggage space for your track-day road trip.



Big Bird puts its prodigious torque to good use going through Turn 2 at Daytona. Porsche's stout turbocharged engines offer many options to 911 owners looking for more power.

and you might need a good lawyer on retainer, because you will be well into arrestable speeds. The car begs you to disobey any posted limits on the road, and there seems to be nothing it can't do. Accelerate hard and scare occupants? Check. Brake in a controlled, smooth, and gravity-warping manner? Check. Remain Kansas flat and composed in hard corners on the post-apocalyptic tarmac? Check, check, and check.

There is no reason you couldn't drive Big Bird every day, depending on the climate where you live. I have certainly sacrificed more and received less from other daily drivers in my life. Of course, if you choose to make similar modifications for your daily driver, you may need self-control and maturity to keep yourself from running afoul of Johnny Law.

UNFORTUNATELY FOR BGB, Big Bird's first track experience met with rainy conditions that did not let it spread its wings. Tecce brought the car to the Circuit of the Americas in Austin, Texas, where they were delivering a new customer car at an open track day. While it was a struggle to find dry track time that weekend, the last day did offer some hint at what Big Bird had to offer.

"Unlike the naturally aspirated cars that need to be kept high in the rpms, this car loved the low range. As you would exit every slow corner, the car would leap two to three car lengths the moment you rolled into the throttle," said Tecce. "The balance was completely neutral without any oversteer or understeer. You could rotate the car if you wanted to get overly aggressive, but it inspired confidence in every part of the corner."

The short time available to explore Big Bird's potential was enough to bring questions after the session from the GT3 and 911 Turbo drivers who were passed by the yellow rocket. The popular "what the heck is in

that thing?" question earned a wry smile and an answer that made everyone chuckle. "Just some bolt-ons and our favorite iTunes playlist," said Tecce.

Thankfully, an upcoming PCA Club Race at Daytona offered advanced DE sessions during the weekend, so Tecce was able to show Big Bird's potential. As expected, it was up to the challenge, reeling in cars by the corner in the tight infield sections of the famous Daytona road course, and then launching past bigger-displacement cars on the high banks of NASCAR turns two, three, and four. With Big Bird lapping Daytona in less than two minutes during a DE on street tires, BGB considered its quest a success. Judging by the number of other drivers and corner workers who came by their garage to see what "that yellow car" had in it, I would say they were right.

WITH TURBOCHARGED ENGINES dominating the modern landscape, the possibilities for an owner to unlock real, impactful horsepower for not a lot of money are growing. Never before has so much been able to be gained for so little; the choices are out there to meet any owner's proclivities. The real question comes down to individual comfort level, or in other words, how much you are willing to tinker with your Porsche.

It doesn't matter if you have a 911, 718 Boxster or Cayman, Macan, Cayenne, or Panamera; there are options to tune your car for more power and performance. For around \$2,500, a base model can have "S" power. The fact that BGB started with the top of the food chain in the GTS means it didn't have to change any major engine components because the larger turbos and intake were already there from the factory. But you could start with a base Carrera, add larger turbos and improved intercoolers, and reach the same levels seen with Big Bird. It all depends on your needs, desires, and budget. 🏆

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