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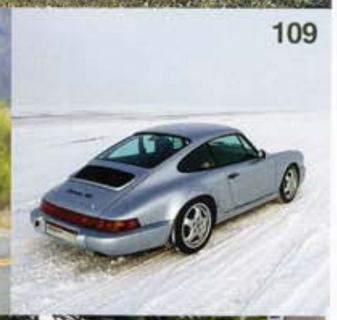

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NO. 221 SEPTEMBER 2014

COVER SHOT
A CAYMAN GTS DRIFTING DURING TESTING
CREDIT: DANIEL WOLLSTEIN

Polar Express

Heating up a '93 RS America

STORY AND PHOTOS BY SEAN CRIDLAND

Utah is a land of climatic and geographic extremes. Whether you're cruising the twisting roads along the riversides in canyon country, climbing to the ski resorts of the Wasatch Range, or taking in the long, seemingly endless stretches of highway alongside the Bonneville Salt Flats, there's always something that demands your attention.

The beauty and scale of Utah's landscape can become overwhelming. During the many times I've driven through these spaces in some nameless, featureless car, I wished I were in a vehicle that would make the drive equal to the amazing locale. I'd dream of a machine that has the agility to rapidly blaze through the canyon roads, the long legs to shorten the empty miles, and the road skills to handle all types of weather with aplomb. Ultimately, a car that registers high on the fun-to-drive scale.

Porsche enthusiast Don Moriarty has always loved cars, especially ones that display creativity, ingenuity, and design excellence. This has shown up in many of the cars he's owned, from his very first—a 1962 Jaguar E-Type Roadster fixer-upper he got for $650 when he was fifteen—to a 914/6 GT he drove on the street for years, a 964 Cup car, a 1994 Speedster and…well, the list goes on.

For his latest project car, Moriarty thought about a '73 RS clone, but he considered that concept to be overdone. He wasn't looking for another race car for the street, either. Moriarty wanted something relatively practical that also possessed the certain nameless quality that makes a person eager to get behind the wheel for the sheer pleasure of driving.

"If you have a bunch of cars in your garage, you'll always gravitate towards the one you enjoy most," said Moriarty. That's what this Polar Silver 1993 RSA converted to look and feel like a European Carrera RS is all about. It looks Porsche OEM stock, but is out of the ordinary and capable of evoking deeper emotion and satisfaction. "What I wanted to do was create a Porsche which has the feel and the soul of the older cars," he continued. "New Porsche cars are very fast, but they don't have the same soul as the older models."

Moriarty started with a 1993 RS America with sunroof delete, air-conditioning, a limited-slip differential, and the original Porsche CR-1 AM-FM radio with a cassette player. He bought the car from the original California owner with just over 144,000 miles on the odometer. It was very well cared for by its previous owner and came with all its maintenance records, a very clean interior, and a body that's solid and free of rust and dents.

Moriarty prefers the sunroof-delete model because of its slightly better body rigidity, and because its absence removes close to fifty pounds from the top of the car, where it makes the greatest difference in handling. He also liked that the '93 was the last version with rear storage compartments, rather than the rear seats installed on the '94 models.

Already recognized as one of the most collectible in the 964 line—and as a car that gathers a certain amount of respect among Porsche drivers—the RSA is known for its lighter weight and better handling, while also remaining streetable. Though the RSA of 1993 and 1994 had a better power-to-weight ratio by virtue of Porsche's "added lightness," the factory didn't change the power output over its plain vanilla C2 sibling. For Moriarty, it provided a good starting point for the kind of spirit he was looking for.

Once he took delivery of the car, Moriarty dedicated himself to finding the correct parts for his Euro RS conversion concept. It took some searching, but he eventually found a set of magnesium Cup wheels in San Diego. They're half an inch wider than the RSA versions, both front and rear.

Finding the Euro RS aluminum hood was more difficult. Moriarty enlisted the help of Caleb Cook at LA Dismantlers, who was able to find four aluminum RS hoods available in Germany. Moriarty considered the price and availability for a few days, but thankfully not any longer; by the time he'd made up his mind, there was just one left. It was then discovered that one of the principals at LA Dismantlers had a pair of the stiffer Euro-style seats in his personal car. Since finding the correct seats was imperative to the project, Moriarty snapped them up. Next came the proper rear bumper with the wider license plate indentation, and front brake duct inlets in place of the RSA's driving lights.

For the conversion, Moriarty turned to friend, personal mechanic, former USAF F-16 pilot, and self-described pirate Les Long of Air Power Racing in Tooele, Utah. It was important to both Moriarty and Long that the car retain its number-matching status. Long, who has built, raced, and still services several 964 street and race cars, looked for the most reasonable approach to increased performance, while maintaining streetability, long-term reliability, and ease of service. According to Long, one-offs are fun, but are usually a pain to deal with over the long haul, both for the owner and the mechanic. What it really came down to was creating an agile, lightweight, and reasonably powerful car that matched the European RS level of performance from a U.S.-legal street car.

The plan was straightforward. The car was already in good enough shape that it didn't require a complete restoration. Instead, they gave the interior and underbody a thorough cleaning and kept the sound-deadening and undercoating. The heat shields around the engine were either replaced or media-blasted as necessary. Meanwhile, the fenders and hoods came off in preparation for new paint from Air Power's in-house painter, Skip Cassell. He readied the surfaces and applied a flawless new coat of Polar Silver. All the body seals are new, as well. In keeping with the Euro RS tribute, all the pieces Moriarty had sourced replaced the original RSA pieces (which are stored away, in case a future owner wants to put them back). The goal was to create the Euro RS vision as if it were an original, or even better than an original.

On the inside, there wasn't much to do. The dash, carpet, and leather were already in excellent condition, with just a touch of patina revealing the car as a regular driver, so no work was needed. The OEM Porsche AM/FM digital display stereo cassette player with two speakers was in place and working well. The storage compartments of the RSA were retained because they're original, if not entirely practical. The stock instrumentation remains intact. Only the Euro-spec seats are different, but they fit perfectly in the RSA.

In the meantime, Air Power had disassembled the engine for a refresh. The ultimate goal was to up the displacement to 4.0-liters for more horsepower and—most important—a beefier torque band. They used the original engine case, retained the OEM induction system, ECU, and exhaust, including the catalytic converter, but eliminated the secondary muffler. In other words, from the outside the engine would look stock, but it would sound throatier and provide some extra go-power in every gear.

The process began by stripping the engine case, removing the cylinder studs, and sending it off to be enlarged for the new cylinder sleeves. RSR sealing rings and competition-grade bolts were used to mate the new L&N "Nickie" cylinders to the case.

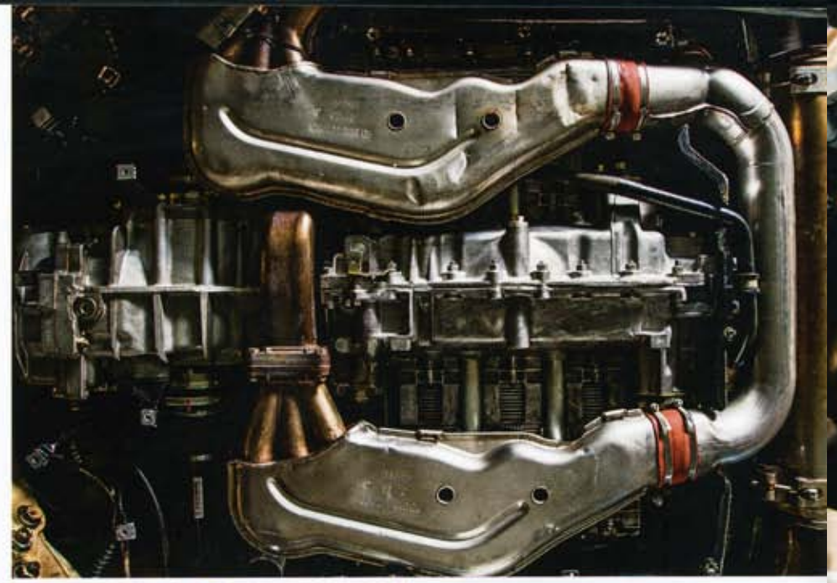
For the core of the engine, Long and Moriarty elected to stay with the 964 crankshaft for simplicity and serviceability. They didn't see the need to go with the more exotic GT3 crank that many people are buzzing about in the forums. That also helped to maintain the stock pulley arrangement. The crank is held in place with GT3 RSR main bearings, the connecting rods use Clevite NASCAR-style rod bearings, and all the bearings were coated with a Molysulfide compound.

The new Nickie cylinders were combined with lightweight, shortened J&E pistons and Carillo rods, fasteners, and bigger rod-bolts, increasing the displacement up to the desired 4.0-liters. The tops of the pistons were coated with a heat barrier and the sides of the pistons were coated in Molysulfide. This contributed to slightly—though not radically—higher revs and less friction.

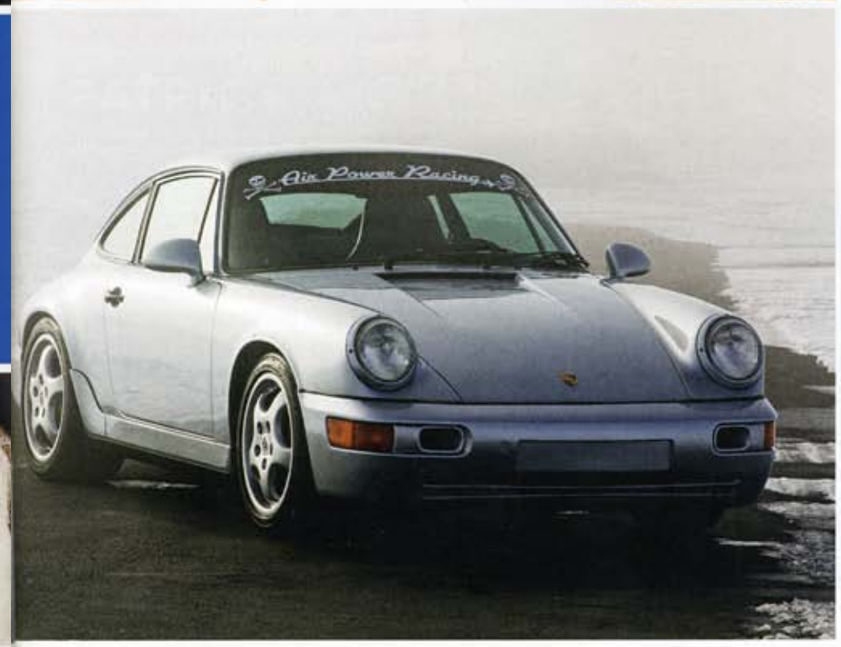
The cylinder heads are from a 993, with Indy-style sealing rings done by Aasco Motorsports. Aasco race springs with titanium retainers and 993 RS valves were used to complete the top end of the engine. To provide a strong seal between cylinder and head, 993-style stainless-steel sealing rings were cut to fit. The valves are stainless 8mm stem RS units: 51.5mm intake and 48.5mm exhaust. The pistons were custom cut for the valves, and the valve pocket is so large that there's no worry of bent valves or damaged pistons at the redline.

The final compression ratio is 12.0:1. Because the car lives in a high-altitude environment, the dynamic compression ratio is likely closer to 11.2:1. Long notes that because of the high altitude, more compression aids performance more than it would at sea level. So far they've run it on regular pump-grade premium with no need to resort to race gas. Staying with the OEM street theme, the fuel pump and fuel lines are stock.

The stock 3.6-liter RSA engine made a respectable 260hp at 6,100 rpm from the factory. The upgraded mill easily



Clockwise, from above: OEM heat exhangers and intake belie the magic and power of the 4.0-liters hidden within. Subtle exterior changes give a hint to the car's performance. Camber plates combined with new springs and struts provide a civil ride with increased agility. The interior is austere, yet comfortable. Big 993 uprights and brakes provide ample stopping power.



puts out an additional 70-90 ponies. According to Long, "I think it's a *real* 300 hp to the wheels, not 'internet' horsepower. The redline is 6,600 rpm, not 8,500. We don't see any reason to raise it. It's a street car. It's just fun to drive within the torque band. It doesn't have a fuel regulator and it doesn't have an electronic piggy-backed ignition controller. In the end, this project was not aiming to increase the high-end rpm available to the driver, but to present an acceleration curve that would be crisper, quicker, and more readily available."

For the transmission, Long and Moriarty took a similar approach: ease of maintenance while using OEM gearing and ratios. Built by GBox in Boulder, Colorado, it has steel synchros in gears 2, 3, and 4, which were upgraded for toughness, longevity, and responsiveness. The differential is from a 2002 GT3 RS, adjusted 60/40 (60-percent lock-up on deceleration and 40-percent lockup on acceleration) for both better cornering and acceleration. The clutch is a Sachs GT2 unit paired with a 993 RS lightweight flywheel that has been machined to shave off some weight.

For handling and stopping power, it was important that the project equaled or surpassed the European RS. However, this had to be achieved without race car-type harshness or noise. Cost had to remain reasonable as well. Wherever practical, Euro RS components were used. But, because of the exotic, rare and expensive nature of some of those parts, the rest of the front end was updated to 993 specs.

The 964 was fitted with Euro RS anti-roll bars, Bilstein PSS10 struts and springs, and new OEM rubber bushings connected to the chassis with monoball bearings. Stomski Racing camber plates were also added to provide greater adjustability; settings are about 2.5 degrees of negative camber in front and 2.0 degrees in back. Long thinks that's about the maximum you can run on the street without overwearing the inside of the tires. More than that and you're either buying a lot more tires or spending more time having them flipped on the wheels for even wear. The car retained its RSA non-power steering, mated to a set of new 928 tie rods.

Above: The 964 RS America is great in stock form. Giving it more power, bigger brakes, upgraded suspension and Euro RS flair make it that much more satisfying to own and drive.

Rather than go for the rarer and more expensive Euro RS uprights and brakes, the fronts were updated with 993 aluminum uprights and Big Black front calipers and discs for a considerable unsprung weight advantage and better stopping power. At the rear are 993 discs mated with the original front 964 calipers. A larger brake-fluid reservoir was also fitted.

Keeping the car connected to the road are Michelin Pilot Sport 2s: 205/50ZR17s up front and 255/40ZR17s at the rear, mounted on the aforementioned magnesium factory Cup 2 wheels, as found on the Euro RS. Bucking current trends, they didn't want to stuff the fenders with oversized tires because—thinking ultimately about driveability—they weren't concerned with "ultimate" grip. Besides, too much tire affects handling dynamics and puts different forces on the steering, brakes, and even the chassis, often requiring a slew of new suspension components to accommodate them. Fat tires also mean rolling the fenders, something Moriarty wanted to avoid so he could maintain the Euro RS look. Sometimes bigger is better, but in this case it's not. Long figures that with OE-size tires, the car can run almost an inch lower than if they had gone with something like the 275/45s many people run on these cars now.

The car was completed just before Thanksgiving 2013, just as the Utah winter started to set in. The final weight of the car is 2,730 lbs, which compares well with the Euro RS's 2,711 lbs. With the conservative estimate of a solid 300 hp coming from the newly expanded engine, the power-to-weight ratio puts this RSA in the same territory as its target Euro RS, and not that far from the 964 Cup and Turbo variations, while retaining all the RSA's basic creature comforts.

Compared to its former self, the car is more torquey and pulls hard from bottom to top in every gear—even fifth. Handling is crisp, clean, and precise, but without the harshness of a track maven. The mechanical steering provides a visceral connection to the road not found in its power-steering-equipped siblings.

The seats are comfortable, supportive and allow for positive feedback from the chassis without causing pain over the long haul. While this isn't a car built for week-long tours, it's comfortable over the kinds of distances you find yourself traveling when you get lost in the pleasure of driving, when the curves in the roads are just begging to be enjoyed and the scenery is spectacular.

"Some cars look great but are horrible to drive," said Moriarty. "But some cars look great and drive great. And that's what I wanted." This RSA is an excellent example of a subtly reworked later-model air-cooled 911 that looks good and can be used as a daily driver. It can also be enjoyed on weekend jaunts down long, scenic stretches of highway, on twisty canyon roads, and on challenging mountain passes that beckon you on. ■