962 SPEEDSTER

State of the art in 1991 — and still a twin-turbo mind-blower

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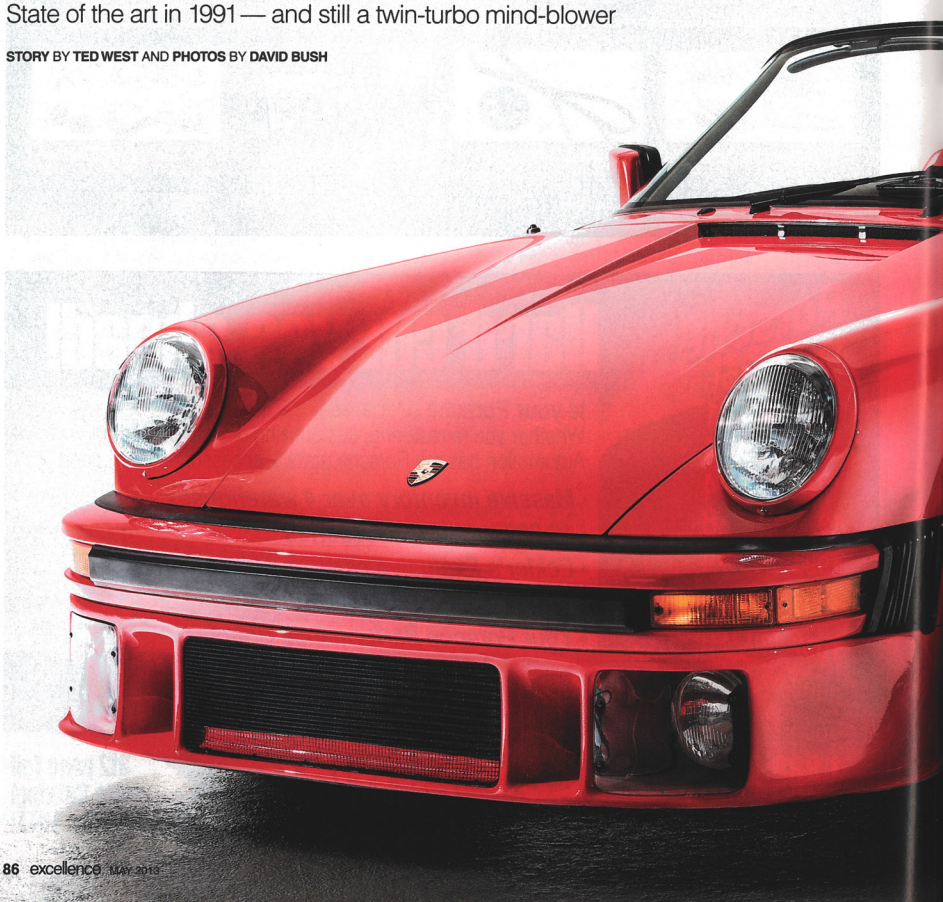
Some guys get it right first time out. But in 1989, to his surprise, Gary Primm was sorely disappointed that Porsche AG had got it wrong. If you've been keeping up with your Who's Who in Las Vegas casino owners, you know exactly who Gary Primm is, and accordingly you'll take his disappointment seriously. But if, like me, you're not absolutely sure why Las Vegas exists, you'll want to know more.

Mr. Primm takes cars extremely seriously. He has a huge collection of them



and was excited to hear in 1989 that Porsche was releasing a limited-edition (814 in all) Speedster version of the current 911. It sounded like just the thing. When his brand-new Speedster arrived, though, he was nonwhelmed by its looks, under-gasted by its performance, and just generally water-logged over the whole thing. It had turbo-look bodywork, which was cool enough, and upgraded suspension — never an insult. But it should've been so much more, well…Speeeedster!

If you are by any chance the current proud owner of a box-stock 1989 Speedster, and you simply won't tolerate this seditious talk about your favorite car, keep in mind, you're not a Las Vegas casino owner….

Mr. Primm, concluding that his new Speedster, Botoxed-hunchback and all, was a "falsie," a performance Porsche dressed up in false eyelashes and not much else, parked it with less than 100 miles on the clock and never looked back. Well, almost never. But it gnawed at him. He had envisioned a rip-and-tear, make-waves little performance sports car that would make the big-block lunks around it look like bars of soap.

We repeat, Mr. Primm takes his cars seriously. And not much later, in 1990, through the good offices of AMG, he was introduced to the ever more legendary Bruce Canepa of Scotts Valley, California. It was a marriage made in the nether regions.

California Schemin'

In Bruce Canepa, Gary Primm found what he'd thought he was getting with his Speedster in the first place — a guy who got it right first time out. For a decade or two, Canepa had been racing, selling and, above all, enthusing about Porsches with all the energy most of us devote to staying alive in the lion's den. By the 1980s, he was building and selling Porsche slantnose conversions that rivaled the quality of Porsche's own conversions. And he got it right; all of his brackets and mounting hardware were fashioned from stainless steel to ensure long life. He converted Porsche factory fenders, then re-zinc-coated them for rust prevention. The Canepa conversions became so strongly sought after that his name was part of the Porsche dialogue as far away as Australia.

But there was far more in the Canepa shop than slantnose conversions. Along the way, he'd bought a veteran Al Holbert-built Porsche 962 IMSA GTP racer. After totally rebuilding the car, he went racing with it, but he still had a spare twin-turbo 962 engine in the back of the shop. The engine had been raced hard and was thoroughly tired, but it was a winsome candidate for a Canepa reincarnation. He set it aside until the right opportunity arose.

Gary Primm was the right opportunity. Primm told Canepa how utterly underimpressed he was with his Speedster. They began talking about that disappointment in depth…and in less than a hiccup, the Canepa mind began racing ahead. Primm had found his kindred soul. Canepa said he'd always thought the Speedster should have been turbocharged, a legitimate latter-day reincarnation of the rorty little original Carrera four-cam Speedsters that had done so much to confirm Porsche's giant-killer performance image. But he had an idea. What if they slammed a fresh, full-bore, furious racing twin-turbo 962 engine — say, 650 hp's worth! — into the abdomen of the Primm Speedster? That should create some ripples.

You could do that?

Could and would.

Canepa and his in-house sorcerers would recreate the 962 engine as a ferocious — and simultaneously completely

tractable — street motor. It wouldn't be like some 600-hp Cobra that would turn around and bite your throat any second. It would be a thoroughly driveable street Porsche that with a squeeze of the throttle could Fed-Ex you three time zones ahead while everyone else was standing there flat-footed, wonderin'.

But Canepa wouldn't stop there. Adding a long list of Porsche racing components, he would make this Speedster chassis a matchless street warrior. It would have massive power plus unshakably poised handling. Best of all, he would make it ride well while still having tremendous grip. It would be the whole package.

Primm couldn't invent a way to say no.

The Devil's Work, Delectably Done

It would require some violence, of course. An '89 Speedster is only an '89 Speedster. And trans-locating a twin-turbo 962 from its relatively roomy mid-engine habitat in an IMSA GTP car to the tight-ass rear-engine locus of a street 911, while rotating the engine from rear-facing to front-facing…well, it would take some scamming. But if you're in the trade of building demon Porsches, that's your stock in trade.

As is to be expected in all such full-speed expeditions into the unknown, this one was evolutionary, a learning experience. Originally Canepa intended to make the 962 Speedster the ultimate Q-ship; it would look as dead stock as possible. Indeed, he would use just one non-stock body piece. To cover and contain the 962's gargantuan twin intercooler (and this Nevada desert car's crucial air-conditioning condenser), as well as to generate strong rear downforce for its hyper-sonic top speed, he ordered an enormous DP (for Design Plastic) rear wing and louvered engine cover.

And immediately there was a problem. When the DP wing, indispensable cover for the intercooler and condenser, was mounted, its outlandish size on the stock Speedster was like a false nose and a funny mustache. The car wasn't a Q-ship; it was a clown-mobile. Worse still, if the engine put out the dread promised moon-rocket thrust, the car was going to need tons more wheel width, tons more tire footprint than Porsche AG ever dreamt of for its underachieving little Speedster. And Canepa didn't want to get into the wooly business of home-made wheel flares. That smacked of shade-tree carrosserie, the kind that requires a claw hammer, Bond-O and warm Schlitz.

This car must be formal — as professional and "factory" as possible.

Yet maybe, just maybe, the need of bigger tires and a well-balanced look dictated by the big DP wing pointed in a positive new direction. Canepa had always liked the look of the racing Porsche 934, the extremely businesslike, ripped 911 shape that immediately preceded the surreal, all-but-hallucinatory racing 935. The 934 had a purposeful Germanic dignity that suited the project perfectly. Handsome bolt-on 934 fender flares and the square-jawed, high-speed 934 nose, besides being aerodynamically finessed, had a convincing "factory" look. They would improve the car's appearance, enhance its aerodynamics and increase its cooling.

A full set of 934 bodywork — nose, front and rear flares — was installed. In the blink of an eye, the big DP rear wing became a well-integrated part of the muscular whole. No false noses, no funny mustaches. The 934/962 marriage was consummated, and passionately.

Being Flexible, Staying Rigid, Standing Fast

The goal had a sort of inevitability right from the beginning. This was to be a car of at least 550 hp, maybe more if God is good — a car that would shoot past 200 mph as if it were standing still. And that being so, the unsuspecting Speedster was going to get some other-worldly support from the Canepa engineering department.

Thanks to its scandalous expected terminal speed, the 962 Speedster would get a sturdy low-profile roll bar that was far more than just hair-do protection. The roll bar would be welded to a stalwart side-bar system submerged in the structure of the car and welded to burly chassis rails running from the rear of the car to the front shock towers. The stock Speedster, like most production Porsche open cars, is more than a little flexible, meaning that these cars' suspensions don't generally

Huge DP wing was indispensable both as a cover for the huge twin intercooler and condenser and for aerodynamics.

function with the same stern discipline and attention to detail as their closed-car brethren. That is a fact of life. However, traveling at, say, 210 mph is an inopportune time to find out that your four wheels' contact with the pavement is only casual. A hardened racer like Bruce Canepa, accustomed to 800-hp Porsches on the track, can fully appreciate how critical a really serious chassis is at extreme speed.

Indeed, Canepa would go a step or two further. Besides adding side chassis rails, his builders boxed the rockers and raised and tied-in the rear floor behind the seats, causing them to serve as a monocoque stiffener unifying the entire structure. The 962 Speedster that resulted is as rigid as a Dallas Cowboy leg cramp. Canepa says the only other way to make the tub this rigid would be to weld on a roof, which was not what Gary Primm signed on for.

The car's suspension, too, was a learning experience. At roughly the same time the 962 Speedster was a-building, Canepa was putting together a Porsche Club car whose owner wanted to use on both the track and the street, and they were experimenting with coil-over shock/spring treatments. Several spring rates were tried until the shop settled on a spring rate that should be ideal for both uses. But there was a problem. Track surfaces are generally very smooth, but the street — even the Interstate — is a lot rougher than you think until you try driving on it with a track-tuned suspension. Driving to the track, the Porsche Club car rode miserably. And when the spring rates were changed to be more forgiving on the road, the car lost speed and precision on the track. Stiff was bad. Soft was bad. And the middle was bad, too. As Elizabeth Taylor learned, and learned again, there is no perfect husband.

But the Canepa people knew there is no such thing as a failed experiment. Even the worst result teaches you what doesn't work. In that spirit, they wasted no time on coil-over springs for the 962 Speedster. Profiting from the Porsche Club car data, they went straight to dual torsion-bar suspension for Gary Primm's project, and for the best of reasons. Considering this was primarily a street car, torsion bars provided a more progressive, more supple, less harsh transition from neutral loading to bound/rebound caused by rough surface. This more forgiving nature was entirely right for such a high-performance road car. Canepa chose Stevens Machining torsion bars, rifle-drilled for lightness — 23mm in front, 33mm in the rear. For added roll control, 22mm Charlie Bar swaybars from Wrightwood Racing were fitted, and custom-valved Bilstein shocks completed the package.

By good fortune, in 1990 BBS had just debuted a new wheel to withstand the ferocious sideloads generated by the all-out IMSA GTP cars. The wheel was clean and handsome, with thick spokes — perfect for the Primm Speedster. The car was fitted with 935 center-lock hubs to accommodate the new 17-in. BBS-GTP wheels. The wheels are 9.5-in.-wide in front, 12.75-in.-wide in the rear, mounting Goodyear GS-C tires, 275/40ZR17 in front and 315/35ZR17 behind.

Hauling the Hyper-Speedster to a halt, Canepa did the obvious and mounted 935 rotors to the 935 hubs. The calipers are the same enormous Brembos that were fitted to the AWD 959. And to provide the street usability of power brakes with the massive stopping power of a racing car, a unique power-brake vacuum storage tank was fabricated that used the 962 engine as its vacuum source. As in so many other details with this car, the Canepa big-thinkers showed more than a little of that precious item…finesse.

As a handling package, we have Canepa's word that the 962 Speedster handles better than any road Porsche he's ever

Virtually factory -spec cockpit sports a 959 speedometer, turbo dial on the console, an integrated rollbar and four-point belts.

driven. (We didn't expect him to say it was "mildly amusing.") But he goes a step further. With racing slicks, he believes it would handle as well as his RSR. Fightin' words. And as a Sunday morning driver, he says, it rides as smooth as a new Carrera on all the roads where he's tested it.

Okay. But wait till we show him the roads of northern New Jersey.

My Kingdom For Some Horsepower

Talk, talk, talk. What's a Hyper-Speedster without Hyper-power! Engine-builder Jerry Woods will be happy to answer: absolutely nothing.

Woods has reason. He was the man chosen by Canepa to climb into the spare ex-Holbert 962 racing engine and make of it something utterly unforgiveable. Canepa specified an engine with a lot of readily driveable bottom-end torque. Never a bad strategy. And one more thing — it should have as little turbo lag as conceivable so that His Lordship won't be constantly stepping in the bucket launching off from green lights. Yes, definitely.

Woods said, sure, he could do that — just watch him.

He began by molesting the engine's DNA, choosing 100mm pistons and a 70.4mm-stroke crank, arriving at an enhanced cubic capacity of 3.3 liters — all the more to play with. He added an HKS electronic wastegate control and designed his own proprietary programmable twin ignition system. After taking a break for brunch, he added a prototype Haltech fuel-injection management system, the latter designed to take full advantage of the 962's twin sets of staged fuel injectors. This system runs on one set of injectors when normally aspirated, then kicks in the second set of injectors the instant the engine comes onto full boost. The result is reassuringly tractable motoring around town, followed by an absolutely giddy inability to breathe while tromping down the throttle on the inter-stellar highway.

Oh, dear.

Twin K26 turbos taken from Canepa's own 959S were attached. An enormous, specially built intercooler from career Porsche Wizard Fred Garretson was bolted on. A stainless-steel exhaust system was designed and fabricated at Canepa and fitted to the car. It located the turbos immediately behind the rear tires and right next to the engine, with very short primary header pipes that deliver maximum power and minimum turbo lag. The custom-made stainless-steel muffler with twin large exhaust tips mimics the large exhaust pipes of the twin-turbo racing 935 engine. This muffler cooperates with the turbos themselves to suppress some of the engine's raw rage — but not enough to blot out all the fun of driving a genuine, blistering 962 at full growl.

When Woods was done, the resurrected twin-turbo engine was bolted onto the dyno and everyone stood far back.

Throttle was dialed up. Windows and doors flew open. Several cats left the building. And the gauge read 581 bhp at 6500 rpm — better than hoped for. Peak torque was 550 lb-ft at a very serviceable 4000 rpm. Sweller still, fed some top-shelf 110-octane fuel, at 1.3 Bar boost, the 3.3 delivered a nice round 650 bhp, dropping monocles all around.

The Woods engine is oiled exactly like similar Porsche racing engines, fed by a 28-qt oil tank mounted in the car's front trunk. Spent engine oil breathes into an accumulator in the rear fender. After the oil is separated from the fumes, it is returned to the forward tank for recirculation. Engine cooling is accomplished with a large flat racing fan, which looks great, sounds wonderful at idle, and has no trouble cooling a 600-hp street motor…even in mid-summer Las Vegas.

The gearbox is a G-50 five-speed taken from a 1989 911 Turbo. The unit had to be shortened an inch in order to fit into the Speedster. Super Boots, the company that manufactures Indy Car axles, supplied the axles and CV joints.

Driver Needed

Creature comforts for such a road-burning 3.3-liter Desert Rat had to be, well, appropriate. Everyone knows the desert gets hot, but it also gets cold — very cold. So the car needed both deep-freeze air conditioning and a good pot-belly heater. A special rear motor-mount plate was designed that would accommodate the air-conditioning compressor on its back side. This application required an air compressor that runs in reverse, but the installment was entirely successful and the system provides factory-quality cooling on even the most festering-hot of Vegas afternoons.

The heater presented an entirely different problem. The complex Canepa-designed exhaust headers created to fit the 962 mid-engine system into the cramped 911 rear-engine location left no room at all for conventional heater boxes. So a random search through the Porsche Weird Parts Catalogue turned up a gas heater from a Porsche rally car. The gas heater was fitted and works so well that Mr. Primm was able to drive with the top down even in dead of winter.

The original fond intention of creating a Speedster Q-ship pretty well went out the window the minute the oversized 934 fender wells and gigantic DP whale's tail were nailed on. But climbing into the finished car's interior, it remains only modestly non-standard. Except for the low-profile roll bar, a 959 speedometer and a turbo dial on the dashboard, the interior is essentially the same as a factory-spec Speedster. Respecting its potentially warp-speed top end, Canepa specified a set of TRW four-point competition seat belts to keep you reasonably attached to the chassis. And as you're flying through the dunes, a Sony CD system has been provided to keep your mind distracted.

Also unique to this car is the Canepa-devised emergency brake. The designers devised a system that uses an Accumulock unit to lock pressure on all four calipers. By simply pumping the brake pedal, then flipping the Accumulock lever on, the system sets and holds all four brakes. Nice.

The people at Canepa worked for about one and a half years, finishing the car in 1991. Officially, they call it a "Speedster 962 Twin Turbo," and in 1991 it was both officially and unofficially the state of the art in pure Porsche misbehavior. Built by intensely experienced racers, it packed as much peak-engineered performance into an innocent little '89 Speedster as would possibly fit.

How much performance is that? Canepa claims a 3.0-sec. zero-to-60 and a quarter mile in the high tens. "It's the most powerful street Porsche I've ever driven," he says.

Yebbut…how fast it will go?

Canepa just grins. "At 200 mph, it feels pretty comfortable. And Jerry Woods calculated it should top 210. It has the power and the gearing to do it."

And that's in outdated, 1991 miles per hour. Since then, Mr. Primm has had his decade or two of pleasure with the car and has sent it back to Scotts Valley to be resold. If it sounds like your next Porsche, apply at canepa.com. But Canepa, being Canepa, is not content to let bygones be bygones. The car is getting a complete refit, using all the very latest modern electronics. They're confident that what was once a doddering 650-hp Speedster will very soon have a nice, round 700 hp — and a fine Sony CD system. Science marches on.

Fender flares from a 934 shield the huge Goodyears, 9.5s front and 12.75s out back, wrapped around 17-in. BBS-GTP wheels.