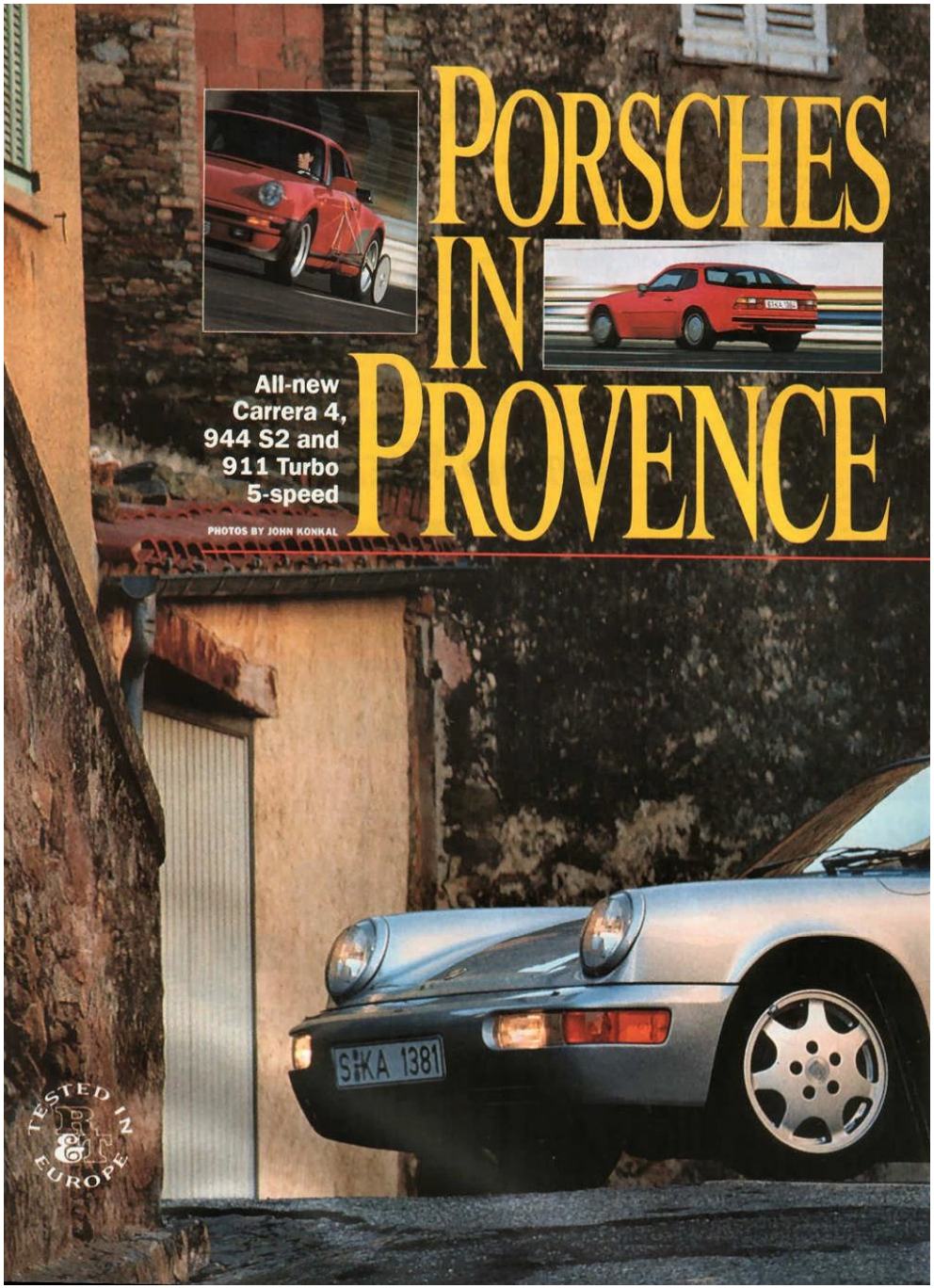


PORSCHES IN PROVENCE

All-new Carrera 4, 944 S2 and 911 Turbo 5-speed

PHOTOS BY JOHN KONKAL

TESTED IN EUROPE

IN BANDOL THE mistral blew with a vengeance, bowing the cypress and churning the azure waters of the tiny bay into foam. But by sunrise the winds had subsided, leaving behind skies swept clean of clouds and a warm day typical of the Côte d'Azur. Autumn in the south of France is a quiet time. The tourists are gone; the restaurants and hotels are largely empty. Roads, too, are devoid of the summer traffic that hinders travel through the French Riviera. In the fall, it's possible to hopscotch across a sizable segment of Provence with ease.

And so we did. Led by our guide and host, R&T European Editor Paul Frère, we three Americans and a trio of Teutonic tourers blazed a trail through Provence that took us from Nice to Bandol and back, by way of Toulon, Gonfaron, la Garde Freinet, Cogolin and Saint Tropez—with Circuit Paul Ricard (near Bandol) thrown in for

good measuring. The all-new Carrera 4 rode point, with the recently refreshed 944 S2 following and the improved 911 Turbo bringing up the rear (no pun intended).

Our decision to tour and test in the south of France was hastened by Porsche AG, which chose to introduce the Carrera 4 to the press in this sunny clime. No fools, those Germans: While the temperature in Stuttgart hovered in the 30s, the hills above Nice and Vence baked in a warm November sun. And so, after the formalities of the Carrera 4 introduction (a technical presentation plus a ride-and-drive sandwiched between gustatory jousts in some of *Guide Michelin's* better restaurants), our group headed for Paul Ricard where our road test editor could gather all-important performance data on these three diverse Porsches.

The spirited drive to Ricard (purists call it Circuit Le Castellet for the ancient town located nearby), our test session there and the day-long photo trek through coastal and mountain villages of Provence taught us a lot about the nature of these three key players. Although each is different, the common thread that binds them all together is their emblem. They are Porsches—serious road cars designed for performance and pleasure with a dash of prestige thrown in for good measure.

Carrera 4

AFTER A DRIVE of the Carrera 4, aka the 964, I confided to Hans Halbach, Porsche's marketing vice president, that this remarkable car had saved my hide more than once. Recounting my numerous hair-raising experiences, I boasted that "I never would have gotten away with that in a 911."

"But this is a 911," Halbach reminded me. So it is. The Carrera 4 looks like a 911, sounds like a 911 and has many of the original car's characteristics (okay, idiosyncrasies). But it's also like no other production 911 ever built—more aerodynamic, more taut, quieter and better riding. One more thing: It's the best-handling mass-produced Porsche road car (but not necessarily the best-handling track car) ever built. Chalk it up to the Carrera 4's full-time all-wheel-drive setup that keeps the car glued to the road. Well, almost always. Prior to our arrival, a European automotive journalist had managed to write one off. "The curve was marked for 90 km/h but was safe for 130. He took it at 150," explained our host from Porsche.

In addition to all-wheel drive, the Carrera 4 has ABS, and this combination makes the latest 911 nearly invincible. Blast down the road toward a corner, nail the brakes, turn in and lay into the throttle. The 964 makes it as easy to do as it is to say. Power-assisted rack-and-pinion steering helps a lot, and if you think this system is for wimps, try driving a normal 911 with the same abandon. Bring steroids.

How different is the Carrera 4? A lot—and a little. The classic 911 shape and fundamental rear-engine layout are the same, and easily apparent. But the newness involves much more: the floorpan, much of the bodywork, plus the suspension, steering, engine, driveline, brakes, ventilation system and instrumentation.

Consider the floorpan, a clean sheet of metal. It's beefier, stiffer too and undoubtedly owes much of its rigidity to a central tunnel

Although it still looks like a 911, Porsche's all-wheel-drive Carrera 4 definitely doesn't handle like one, as all-wheel-drive turns dreaded oversteer into benign understeer. And the rear spoiler's no longer a drag; it stays hidden when not needed.

crashworthiness. Built into the side rails of the new floorpan are enlarged ducts capable of carrying generous amounts of hot air to the car's heating system. Meanwhile, up front, channels that carry air to the interior have also been redesigned to ensure proper cooling/heating.

Integrated into the floorpan are spring towers that house the Carrera 4's new suspension. Conceptually, it's similar to the 911—MacPherson struts up front with semi-trailing arms at the rear. But instead of the normal Carrera's longitudinal front and transverse rear torsion bars, there are coil springs, which allow freedom of movement for the new driveline and deliver a much more supple ride than before. Attached to the halfshafts are 928 S4-derived vented disc brakes equipped with ABS—not the stuff traditional 911s have been made of.

At first glance, the Carrera 4 engine looks like the normal 911 powerplant. Air-cooled, the sohc flat-6 even sounds a lot like its predecessors although it is quieter, thanks to partial encapsulation. But listen carefully to that exhaust note. It's much throatier and with good reason. This is a big engine, bigger even than the 911 Turbo, which packs a mere 3.3 liters. With its 100.0-mm bore and 76.4-mm stroke, the Carrera 4 displaces 3.6 liters and pumps out a healthy 250 DIN bhp.

To achieve this increase in displacement, Porsche designed a whole new block. Actually, whole new everything because there's nothing of consequence that comes from the old engine. In addition to new internals (crankshaft, connecting rods, etc), there are new dished pistons and heads with two plugs per cylinder that allow the flat-6 to enjoy its 11.3:1 compression ratio and live to tell about it. Look closely and you'll see one of the first visible differences between the old and new Carrera powerplants—dual distributors. The primary one, driven by the crankshaft, juts out of the block in the conventional location, but the secondary distributor sits alongside and is driven off the primary by a miniature toothed rubber belt. By the way, the alternator is driven by a different belt than the cooling fan and turns faster to keep up with the increased demand of the electrical system.

Atop the block sits an all-new, 928 S4-style induction system with individual ram tubes fed by a central plenum that uses 2-stage resonant tuning to ensure both good low-end and top-end performance, as well as a torque curve as flat as the Great Plains. Engine management

wheels, the new tranny carries power to a transfer case (mounted on the nose of the transmission) that, in turn, delivers 31 percent of the power to the front and 69 percent to the rear wheels under normal conditions. Distribution of power is handled by electrohydraulically controlled multiplate disc clutches, whose engagement is governed by a computer taking its cues from the ABS sensors mounted at each wheel. Should a wheel begin to lose its grip, power is transferred to those wheels that are not slipping. Normally, the apportionment of power to front and rear wheels is controlled automatically, but under adverse conditions (startups in snow, for example) manual lockup is accomplished by turning a knob on the center console. However, once the car reaches 25 mph, the system reverts to automatic control.

New front-end geometry with negative rather than positive offset (see "Scrubbing Around," R&T, November 1988) gives the Carrera 4's steering a sure-footed, on-center feel. There's little of the classic 911 steering-wheel kickback on bumps, which may not appeal to the Porsche purist. But it certainly makes driving through the twisty bits easier, especially when you throw in power-assisted steering.

On a 911?!

Yes. Although the thought of using anything but elbow grease to steer a 911 seems like heresy, leave it to Porsche to develop a system that provides the right amount of boost with no compromise in feel. In fact, the Carrera 4's power-assisted steering is so good that after a few minutes you forget it's there. Only when you get behind the wheel of a normal 911 do you realize how much better the car is with power assist.

From behind the wheel, you get a good view of the Carrera 4's instrumentation, one of the few things that make the interior of the car different. Although the 5-gauge layout is familiar, the dials themselves have been redesigned, mostly to accommodate numerous indicator lights for the car's various systems. For example, the oil-temperature/oil-pressure gauge has no less than 10 green, red and yellow windows marked with symbols relating to such things as ABS, 4wd engagement, low oil pressure, etc. To the left of the steering column, next to the ignition switch, is the headlight knob, which no longer pulls out but rotates. Just below the instrument pod to the right are controls for the car's heating and cooling air and for air conditioning,

PORSCHE CARRERA 4

IMPORTER

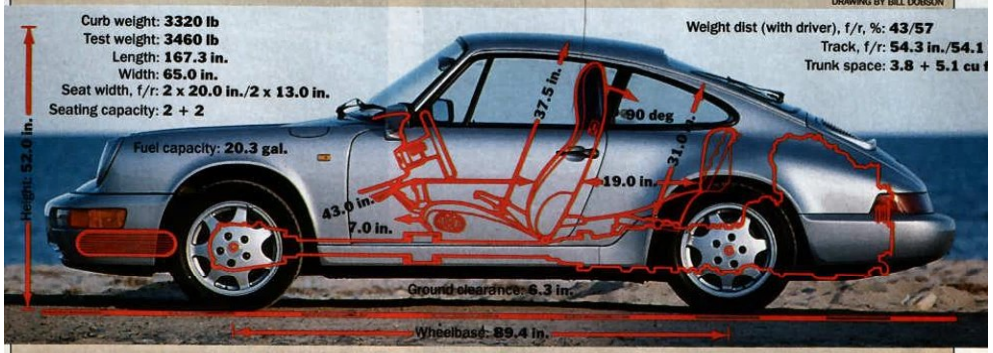
Porsche Cars North America, Inc,
200 S. Virginia St, Reno, Nev. 89520

PRICE

List price, all POE **$69,500**
Price as tested **$70,470**
Price as tested includes std equip. (4-wheel drive, ABS, air cond, AM/FM stereo/cassette, elect. window lifts, central door locking, elect. adj mirrors), elect. adj seats ($970).

0–60 mph ..... 4.9 sec
0–¼ mi ..... 13.5 sec
Top speed ..... est 161 mph
Skidpad 0.83g
Slalom ..... 63.3 mph
Brake rating ..... excellent

DRAWING BY BILL DOBSON



ENGINE

Type ..... alloy block & head, **flat-6**
Valvetrain ..... sohc, 2-valve/cyl
Displacement ....220 cu in./3600 cc
Bore x stroke ..... 3.94 x 3.01 in./100.0 x 76.4 mm
Compression ratio 11.3:1
Horsepower (DIN) ..... **250 bhp @ 6100 rpm**
Bhp/liter 72.9
Torque ..... **229 lb-ft @ 4800 rpm**
Maximum engine speed ...6800 rpm
Fuel delivery ..... electronic port inj
Fuel requirement ..... premium unleaded, 91 pump oct

CHASSIS & BODY

Layout ..... **rear engine/4wd**
Body/frame ..... unit steel
Brakes
Front ..... **11.7-in. vented discs**
Rear ..... **11.8-in. vented discs**
Assist type ..... vacuum, ABS
Total swept area ..... 490 sq in.
Swept area/ton ..... 283 sq in.
Wheels ..... cast alloy; 16 x 6J f, 16 x 8J r
Tires ..... **Bridgestone RE71; 205/55ZR-16 f, 225/50ZR-16 r**
Steering ..**rack & pinion, pwr assist**
Overall ratio 18.5:1
Turns, lock to lock 2.8
Turning circle ..... 38.6 ft
Suspension
Front ..... **MacPherson struts,** lower A-arms, coil springs, tube shocks, anti-roll bar
Rear ..... **semi-trailing arms,** coil springs, tube shocks, anti-roll bar

DRIVETRAIN

Transmission ..... **5-sp manual**

Gear	Ratio	Overall ratio	(Rpm) Mph
1st	3.50:1	12.05:1	40
2nd	2.12:1	7.29:1	66
3rd	1.44:1	4.97:1	97
4th	1.09:1	3.74:1	128
5th	0.87:1	2.99:1	est (6800) 161

Final drive ratio 3.44:1
Engine rpm @ 60 mph in 5th 2535

INTERIOR NOISE

Idle in neutral ..... 63 dBA
Maximum in 1st gear ..... 81 dBA
Constant 50 mph ..... 72 dBA
70 mph ..... 75 dBA

FUEL ECONOMY

Normal driving ..... est 17.0 mpg
EPA city/highway ..... est 13 /25 mpg
Cruise range ..... est 330 miles
Fuel capacity ..... 20.3 gal.

INSTRUMENTATION

300-km/h speedometer, 7600-rpm tach, oil press., oil temp, oil level, fuel level

MAINTENANCE

Oil/filter change .. 15,000/15,000 mi
Tuneup ..... 30,000 mi
Basic warranty .. 24 mo/unlimited mi

ACCELERATION

Time to speed	Seconds
0–30 mph	1.8
0–40 mph	2.9
0–50 mph	3.8
0–60 mph	4.9
0–70 mph	6.8
0–80 mph	8.5
0–90 mph	10.4
0–100 mph	13.0
Time to distance	
0–100 ft	2.7
0–500 ft	7.3
0–1320 ft (¼ mi)	13.5 @ 102.0 mph

BRAKING

Minimum stopping distance
From 60 mph ..... 125 ft
From 80 mph ..... 218 ft
Control ..... excellent
Pedal effort for 0.5g stop ..... 30 lb
Fade, effort after six 0.5g stops from 60 mph ..... 30 lb
Brake feel ..... excellent
Overall brake rating ..... excellent

HANDLING

Lateral accel (200-ft skidpad) .. 0.83g
Balance ..... moderate understeer
Speed thru 700-ft slalom ... 63.3 mph
Balance ..... moderate oversteer
Lateral seat support ..... excellent

Subjective ratings consist of excellent, very good, good, average, poor.

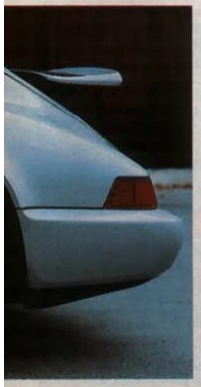
Test Notes . . .

The Carrera 4's remarkable acceleration comes from its simply bolting off the line. Bring the revs to 6000 in 1st, drop the clutch and the car snakes away in the fine mist of four spinning tires.

Power-assisted steering in a 911? Raise no eyebrows. Its lighter effort allows quicker reactions through the slalom. And it transforms what used to be just meaningless kickback of the steering wheel into communicative feedback.

The Carrera 4's benign handling can't be explained by weight distribution; it's only slightly less tail-heavy. Look instead to its 4-wheel distribution of power—and 4-wheel engine braking when the throttle is closed.

■ Is the reactor core nearing meltdown? No, it's simply a test of the Carrera 4's myriad warning and indicator lights sprinkled about the instrument panel.



located between the seats is gone, leaving room for a coin tray that's an extension of the center console. Mounted in the console, forward of the shifter, are knobs that lock up the center differential and raise and lower the rear spoiler.

Otherwise, there's little to distinguish the Carrera 4's interior from the normal 911's. The seats are the same part-manual, part-power-assisted buckets used by the plain Carrera, a silly combination that smacks of the heavy hand of marketing (really, now, power to raise and lower the seat base?). Window switches and door cubbies are as before, although the door-mounted loudspeakers are brand-new. Because of wheel-well intrusion, the old 911 never had a dead pedal, but with the Carrera 4's new suspension, there's ample room for this little footrest, which is located at the same level as the clutch pedal.

Long before you have time to discover the nuances that set the Carrera 4 apart from its predecessor, you'll notice that the 964 looks just a bit different from the standard 911. The molded 928-style aero nosepiece with integrated driving lights, turn signals, air intake and spoiler and the similar soft rear-end cap with license-plate recess are certainly unusual. More than just styling gimmicks, these components, plus numerous underpanels that enclose the engine and driveline, reduce the drag coefficient from 0.395 to 0.32 and result in zero lift. Whether you like their rather massive appearance depends on how much of a purist you are (some Porschephiles have yet to accept the styling of the 1974 model). We like the new bumpers, which also serve to tie the new, flared rocker panel moldings into the body. Ditto for the wraparound taillights, angled slightly to follow the slope of the rear decklid. Flat disc wheels reminiscent of the 928 alloys further alter the appearance of the 964. If that's not enough, then the now-you-see-it, now-you-don't rear spoiler that rises at 50 mph and retracts at just beyond 6 mph provides that extra touch sure to make the Carrera 4 one of the most distinctive cars on the road.

Unfortunately, it'll cost you $69,500 to experience all of this for yourself. At that, you'd better hurry because the 1250 cars earmarked for North America are sure to sell *wie warme Semmeln.* For the less fortunate, here's what the Carrera 4 is like to drive:

Rock solid. It doesn't feel like a 911 (though it does feel "German") and doesn't ride and handle like one either. Power-assisted steering makes a big difference, as does the coil-spring suspension, which has a suppleness not found in the 911's torsion-bar setup. However, the biggest distinction between the old 911 and the new one is all-wheel drive. This makes the car not only supremely tractable but also extremely well balanced—neutral with increasing amounts of understeer when pressed. Incredibly, there's no discernible oversteer, even under drop-throttle conditions that send the rear-wheel-drive-only Carrera spinning tail-first off the road.

At Paul Ricard, we tried to get the 964 into extreme angles for the camera, but all we got was understeer. It wasn't until the slalom test, notorious for bringing out a car's looseness, that we provoked any twitchiness at the rear, and then only moderate. The Carrera 4 posted a 63.3-mph slalom, compared with 65.5 mph for the 1988 911 Carrera. A less grippy skidpad held the 964 to 0.83g, far less than the 0.89g we recorded with a 944 Turbo S on our home pad.

Making up for the Carrera 4's disappointing slalom speeds were the acceleration times, which were nothing short of sensational for a normally aspirated (and heavy) 911. On Paul Ricard's back straight, the Carrera 4 simply grabbed onto the pavement and catapulted itself down the track—to 60 mph in 4.9 seconds, to the quarter mile in 13.5 sec. Consider the source: a massive 3.6-liter flat-6 that delivers gobs of torque and pulls without protest from 1000 rpm up to the 6800-rpm redline. The new gearbox and linkage work flawlessly, and between that fat torque curve and the gearing, the 964 can blast through the quarter mile, or from corner to corner, at warp speed. And when it's time to stop, those massive, ABS-equipped 4-wheel discs enable you to mash the brake pedal with abandon. No wonder the 964 took only 125 and 218 ft to stop from 60 and 80 mph, respectively.

Let the Carrera 4 unwind and you soon reach 160-plus mph. Other Porsches do that, but no other model cruises flat-out with so little drama. Certainly not the 911, whose dartiness and front-end lift are unsettling, to say the least.

During our 3-day sojourn in the sun, five drivers of varying ability sampled the Carrera 4. All were impressed. One of them, smitten long ago by the marque, was moved to say, "Porsche has taken a wonderful car and made it that much more wonderful."

944 S2: practical Porsche

ALTHOUGH IT'S NO match for the Carrera 4 (few cars are), the 944 S2, resuscitated for 1989 with a displacement increase, is a feisty little sportster that may just be the best Porsche for America, especially if money is an object and practicality does count. At a shade more than $45,000, the S2 is less expensive than the 944 Turbo (formerly the Turbo S). Yet it has the same bodywork and interior. And though the suspension is a bit softer, it's still sporting. Actually, it's the same suspension the Turbo had before it got the Porsche Cup-derived combination of stiffer springs and anti-roll bars, plus heavy-duty shocks. Granted, the 944 S2 goes only 150 mph (the Turbo does 162-plus). But the Turbo has one shortcoming that makes it less than ideal in stop-and-go driving: turbo lag. Let the revs drop