THE CAR ENTHUSIASTS' MAGAZINE

ROAD & TRACK

FEBRUARY 1989

UK £2.40 $2.95

Tested in Europe: 1989 PORSCHES

- 911 Carrera 4
- 911 Turbo 5-Speed
- 944 S2 16-Valve

02
0 274161 5

PREVIEW: Jaguar XJ-220 V-12 Supercar

TESTS: Toyota Supra Turbo, Maserati 430

PORSCHES IN PROVENCE

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

PHOTOS BY JOHN KONKAL

TESTED IN R&T 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.

that encloses the torque tube used to tie the rear-engine/transaxle/transfer-case module to the front differential. Porsche says it opted for the torque tube setup to improve the Carrera 4's 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 (fuel metering, mixture, spark and ignition timing, knock sensing) is handled by the latest version of the Bosch Motronic.

Although the Carrera 4's 5-speed transaxle is outwardly similar to the normal 911's and has individual gear and final drive ratios that are about the same, it's really a different unit. Instead of sending its output directly to the 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, which make the system operate as climate control. If they look familiar, it's because these are the same knobs, buttons and sliders used on the 944. The supplemental heater control knob

PORSCHE CARRERA 4

IMPORTER

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

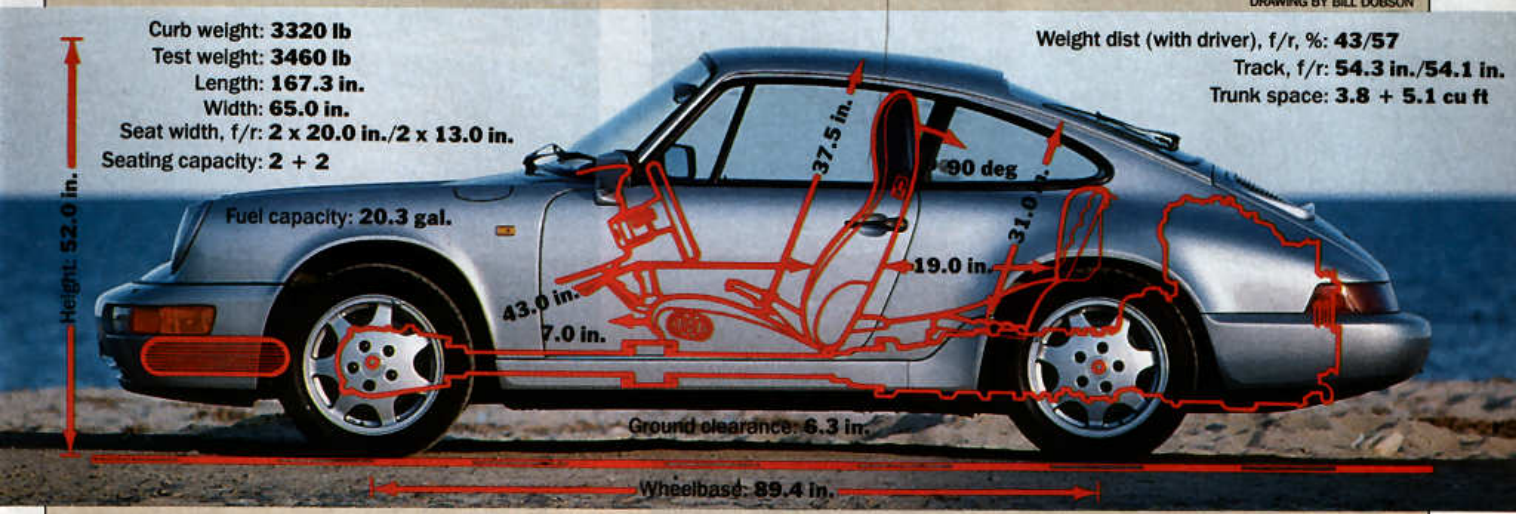
PRICE

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

Take it to the limit, one more time: Paul Frère finds the 944 S2 (3.0-liter, normally aspirated 16-valve engine mated to last year's 944 Turbo chassis) very much to his liking.

and it's one Mississippi, two Mississippi before anything happens. From a standstill, it seems to take another Mississippi and a Missouri or two before you can blow off that Honda.

With the 944 S2, there's no need to worry about turbo lag. There's no turbocharger, only fuel injection, 16 valves and 3.0 (versus 2.5 previously) liters of displacement. This 2990-cc Porsche 4-cylinder is all-new and features a redesigned block with shallower cylinder bores, higher compression ratio (now 10.9:1), reengineered intake manifold, recalibrated Bosch Motronic engine-management system with anti-knock control and plastic oil pan (for reduced weight). This big 4-banger (which doesn't bang) churns out a respectable 211 DIN bhp, making the S2 a touch quicker than the old 944 Turbo from 0 to 60 (6.4 versus 6.6 sec), and in the quarter mile (14.8 vs 15.1 sec).

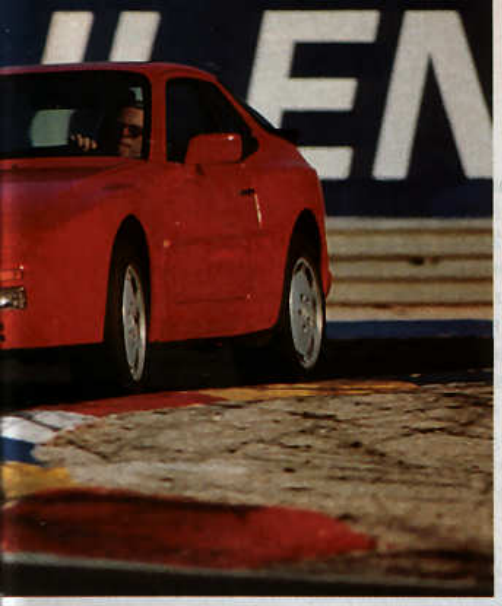
Forget drag-strip numbers, though. Think on-road performance; perhaps a spirited romp through Provence not unlike our little 3-car exercise. During our excursion through the hill country of the Côte d'Azur, the 944 S2 had little difficulty keeping up with the Carrera 4 and 911 Turbo on all but the fastest roads. The big 3.0-liter, 16-valver revved freely and enabled the 3000-lb S2 to hang on to its Porsche prey like a terrier. The well-balanced chassis stuck to the road, yet didn't pound your brains into pâté on rough surfaces. A comfortable interior with good ergonomics made the journey all the more pleasurable.

An alternative to the 964? No. Realistic replacement for the 944 Turbo? Yes! With its similar styling, handling and levels of luxury, the 944 S2 has almost everything the Turbo does—without turbocharger lag and a higher price tag.

911 Turbo 5-speed: power play

THERE'S NO LOGICAL reason to own a 911 Turbo. It's not the fastest Porsche, and since the introduction of the Carrera 4, it's not the quickest. Although it handles reasonably well, it can be a handful (make that two) to drive fast. It rides harshly, not only because of its crude suspension, but also because of its huge, low-profile tires that have little resilience (is that a pea I just ran over?). Those big tires also make the steering feel heavy at low speeds. As a 911, it is saddled with the other shortcomings of the design—for example, a less-than-ideal ventilation system. And at $71,000, it's flat expensive.

But the name is magic, instantly recognizable by young and old. To drive one is a memorable experience, usually pleasurable, but not always. The Turbo does not forgive us our tres-



PORSCHE 944 S2

0–60 mph .....6.4 sec
0–¼ mi ..... 14.8 sec
Top speed ....est 149 mph
Brake rating .....excellent

PRICE

List price, all POE .....**$45,285** Price as tested **$45,598**

Price as tested includes std equip. (AM/FM stereo/cassette, auto. temp control, elect. window lifts, elect. sunroof, elect. adj mirrors, central locking, elect. height adj driver's seat, anti-theft system), rear wiper ($313).

ENGINE

Type .....4-valve/cyl, dohc **inline-4**
Displacement .....182 cu in./2990 cc
Bore x stroke..... 4.09 x 3.46 in./ 104.0 x 88.0 mm
Compression ratio 10.9:1
Horsepower (DIN): **211 bhp @ 5800 rpm**
Torque ..... **206 lb-ft @ 4100 rpm**
Maximum engine speed .....7000 rpm
Fuel delivery ..... electronic port inj
Fuel .....prem unleaded, 91 pump oct

GENERAL DATA

Curb weight ..... 2985 lb
Test weight..... 3140 lb
Weight dist, f/r, % 49/51
Wheelbase ..... 94.5 in.
Track, f/r .....58.2 in./57.1 in.
Length .....168.9 in.
Width ..... 68.3 in.
Height..... 50.2 in.
Trunk space .....10.4 + 7.9 cu ft

DRIVETRAIN

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

Gear	Ratio	Overall ratio	(Rpm) Mph
1st	3.50:1	13.58:1	37
2nd	2.06:1	7.99:1	63
3rd	1.40:1	5.43:1	92
4th	1.03:1	4.00:1	125
5th	0.78:1	3.03:1	est (6320) 149

Final drive ratio 3.88:1
Engine rpm @ 60 mph in 5th..... 2545

CHASSIS & BODY

Layout ..... **front engine/rear drive**
Body/frame ..... unit steel
Brakes, f/r .....**11.7-in. vented discs/ 11.8-in. vented discs**; vacuum assist
Wheels.....**cast alloy; 16 x 7 f, 16 x 8 r**
Tires .....**Bridgestone RE71; 205/55ZR-16 f, 225/50ZR-16 r**
Steering..... **rack & pinion**, pwr assist
Turns, lock to lock 3.1
Suspension, f/r: **MacPherson struts,** lower A-arms, coil springs, tube shocks, anti-roll bar/**semi-trailing arms,** torsion bars, tube shocks, anti-roll bar

ACCELERATION

Time to speed	Seconds
0–30 mph	2.2
0–60 mph	6.4
0–100 mph	17.0
Time to distance	
0–100 ft	3.1
0–500 ft	8.2
0–1320 ft (¼ mi)	14.8 @ 94.0 mph

FUEL ECONOMY

Normal driving..... 19.0 mpg
EPA city/highway.....na
Fuel capacity .....21.1 gal.

BRAKING

Minimum stopping distance
From 60 mph .....130 ft
From 80 mph .....225 ft
Control .....excellent
Brake feel .....excellent
Overall brake rating .....excellent

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

Test Notes . . .

Combining the 944's can-do-no-wrong handling with the torque and response of a naturally aspirated 3.0-liter engine produces in the S2 perhaps the quickest Porsche for driving sinuous roads.

Perhaps we should be conditioned by now to Porsche's attempting unlikely propositions—such as a 3.0-liter 4-cylinder engine. However, one is still unprepared for how well it actually works.

passes. However, the Turbo does hurl itself uphill and down dale like a stallion at speed. And those who can hang on are in for one helluva ride, just like our drivers were as they rode Zuffenhausen's wild pony through the south of France.

We brought along the Turbo because, after stubbornly retaining the original 4-speed gearbox for more than a decade, Porsche has finally outfitted the car with a 5-speed. A spirited romp through Provence plus a workout at Paul Ricard would tell us if this was what the car needed.

Yes. Although the 3.3-liter flat-6 has plenty of torque (317 lb-ft ain't oats), it gets caught out when the revs drop and the turbo comes off boost. With only four gears, that happens often, especially in traffic or on winding roads. Sure, you can downshift, but then you're buzzing the engine. Better to add an extra gear. It makes a big difference—on the road.

Blasting along the country lanes of Provence, the Turbo was always under power, good news for a rear-engine car that's extremely susceptible to trailing-throttle oversteer. Having the right gearing was especially welcome when passing that ubiquitous Deux Chevaux on the only (short) straight for miles. Of course, one thing the new gearbox does not help you do is stop. And the Turbo's massive disc brakes are marvelous. But they don't have ABS, and when the surface is rough or the grip less than ideal, it takes judicious application of the brakes to stop quickly. That's another reason the Turbo is a serious driver's car.

For straightforward acceleration runs such as those at Paul Ricard, the 5-speed makes little difference. The 5.1-sec 0-to-60-mph and 13.6-sec quarter-mile times we recorded in France were within about one-tenth of a second of our American times.

In addition to a 5-speed, the 1989 Turbo has a slightly revised rear suspension. The rear torsion bars are softer, but the anti-roll bar is stiffer, so it's a wash, as we discovered on Ricard's road circuit. In a nutshell, the 911 Turbo's handling limits admittedly are high (big tires help a lot), and as long as the power is applied properly, the turbocharged 911 is relatively neutral. But if you abuse the car by hammering the throttle while turning sharply or by taking your foot off the gas in a corner, the Turbo will under- and oversteer respectively with a vengeance.

That's old news to a 911 driver and less than distressing information to all other automotive enthusiasts who are not about to let logic stand in the way of their love for the 911 Turbo.

With the weight distribution of a dart thrown feathers-first, the 911 Turbo's tail wants to come around whenever the limit of adhesion is exceeded. But with wide tires in back, skinnier ones in front, cognizance of the trait and skillful driving, it's nearly unbeatable.

Final thoughts

LIVING WITH A Porsche under a variety of conditions tells a lot, and if you wonder why these cars are the way they are, spend some time in one—preferably in Europe where it's still possible to drive spiritedly. Head cross-country along a 2-lane that was once a goat path and discover why a car needs proper suspension, great brakes and sufficient power. Spend hours behind the wheel on Europe's *autoroutes/Autobahnen/autostrade* and learn why a driving seat should not resemble a Morris chair. A Porsche will help you understand it all, even if the marque teaches the same lesson in different ways a la the Carrera 4, 944 S2 and 911 Turbo.

PORSCHE 911 TURBO

0–60 mph .....5.1 sec
0–¼ mi ..... 13.6 sec
Top speed .... est 159 mph
Brake rating .....excellent

PRICE

List price, all POE .....**$70,975** Price as tested **$71,206**

Price as tested includes std equip. (AM/FM stereo/cassette, air cond, leather seats, elect. window lifts, elect. adj mirrors, central locking, anti-theft system, elect. adj seats), heated seats ($231).

ENGINE

Type ..... turbo, sohc **flat-6**
Displacement .....201 cu in./3299 cc
Bore x stroke ..... 3.82 x 2.93 in./ 97.0 x 74.4 mm
Compression ratio 7.0:1
Horsepower (DIN): **300 bhp @ 5500 rpm**
Torque ..... **317 lb-ft @ 4000 rpm**
Maximum engine speed .....6800 rpm
Fuel delivery .....electronic port-inj
Fuel ..... prem leaded, 91 pump oct

GENERAL DATA

Curb weight .....3055 lb
Test weight.....3215 lb
Weight dist, f/r, % 39/61
Wheelbase .....89.5 in.
Track, f/r .....56.4 in./59.1 in.
Length .....168.9 in.
Width .....69.9 in.
Height.....51.6 in.
Trunk space ..... 4.5 cu ft

DRIVETRAIN

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

Gear	Ratio	Overall ratio	(Rpm) Mph
1st	3.15:1	10.84:1	44
2nd	1.79:1	6.16:1	77
3rd	1.27:1	4.37:1	109
4th	0.97:1	3.34:1	143
5th	0.76:1	2.61:1	est (5910) 159

Final drive ratio 3.44:1
Engine rpm @ 60 mph in 5th 2230

CHASSIS & BODY

Layout ..... **rear engine/rear drive**
Body/frame ..... unit steel
Brakes, f/r .....**12.0-in. vented discs/ 12.2-in. vented discs**; vacuum assist
Wheels .....**cast alloy; 16 x 7 f, 16 x 9 r**
Tires ..... **Dunlop SP Sport Super D4; 205/55ZR-16 f, 245/45ZR-16 r**
Steering..... **rack & pinion**
Turns, lock to lock 3.1
Suspension, f/r: **MacPherson struts,** lower A-arms, torsion bars, tube shocks, anti-roll bar/**semi-trailing arms,** torsion bars, tube shocks, anti-roll bar

ACCELERATION

Time to speed	Seconds
0–30 mph	2.0
0–60 mph	5.1
0–100 mph	12.7
Time to distance	
0–100 ft	3.0
0–500 ft	7.6
0–1320 ft (¼ mi)	13.6 @ 104.0 mph

BRAKING

Minimum stopping distance
From 60 mph .....137 ft
From 80 mph .....239 ft
Control .....excellent
Brake feel .....excellent
Overall brake rating .....excellent

FUEL ECONOMY

Normal driving.....16.5 mpg
EPA city/highway ..... 14/21 mpg
Fuel capacity .....22.5 gal.

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

Test Notes . . .

■ Like some other elder statesmen of exotic cars, the 911 Turbo doesn't yet employ ABS technology. However, its straight-line braking remains superb, owing as much to the 911's rear-biased weight distribution as to its large tires and brakes.

■ The venerable 911 Turbo's new 5-speed transmission doesn't appreciably quicken its full-throttle acceleration times, but does allow for more relaxed cruising and extra flexibility.