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SPORTS CAR

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JULY 19

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TOYOTA SUPRA TURBO



Toyota's all-new Supra can go head to head with the best cars in the high-performance field. Peter Albrecht tested a pre-production car. Photography by the Young Gun, Scott Dahlquist.





Opening pages: Basket-handle spoiler is an option, thankfully. At least it doesn't block rearward vision. Greenhouse is reminiscent of current Celica. Taillights are round, like on older Ferraris. This page, above: The interior is roomy, comfortable. Throws on six-speed shifter are direct and precise. Gauges are clear.

PERFORMANCE COMPARISON



	Supra Turbo	Mazda RX-7	Nissan 300ZX TT	Stealth/3000 GT*
0-60 mph:	5.30	5.24	5.36	5.61*
0-100 mph:	12.09	13.00	12.59	14.99
1/4 mile:	13.58 @ 106.9	13.83 @ 103.0	13.90 @ 105.3	14.20 @ 96.8
Top speed:	150-155	153	157	153
Skidpad	0.92	N/A	0.90	0.89
Brake, 60-0	114	116	119	120
Brake, 80-0	203	198	243	214

*road test data for Dodge Stealth R/T

WE'VE SAID IT BEFORE,

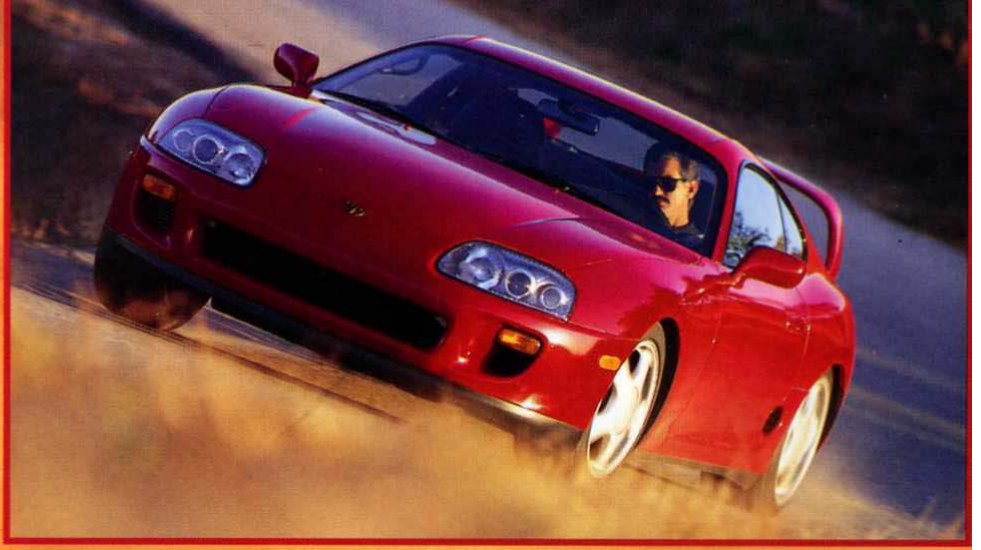
and we hope we can continue to say it: this is truly a golden age of sports cars. As soon as one manufacturer comes out with its latest hot model, the competition is not far behind. Think back to those dismal days of the 1970s and early 1980s, and the sort of low-powered cars we had to deal with. Today, the showroom-floor performance race has reached the point where 250 bhp is the minimum price of admission, and anything less than 300 bhp is almost frowned upon.

Today, we can choose cars like the Corvette, in its LT1 or ZR1 form; Porsche's 911 Turbo, Carrera 2 and 4 and 928 GTS, the Acura NSX, Nissan 300ZX Twin Turbo, Mazda RX-7 Turbo and the Dodge Viper and Dodge Stealth/Mitsubishi 3000 GT. Although it has a great package in the MR2 Turbo, Toyota has been noticeably absent from this high-power league. The old Supra Turbo was heavy and down on power and couldn't compete with the new generation of high-powered sports cars.

Engine, Gearbox

That oversight has been corrected. The 1993 Supra starts with a clean sheet of paper. The new car has a smaller wheelbase, is shorter, lower, a bit wider and lighter. As before, it's a tight package, technically a 2+2 coupe, though the rear seats are little more than a parcel shelf. And it has lots more power. The normally aspirated version of the Toyota straight six (as found in the Lexus SC300 and GS300) gives up only 12 bhp to last year's Supra Turbo (220 against the old Turbo's 232). And the new Turbo gains almost 90 bhp, going to 320 bhp. The Supra nameplate has come a long way since it was first introduced as an upscale 110-bhp Celica back in 1979.

Toyota tells us that a big priority for the new design was reduced weight. Our



Above: Cornering is exceptional, the car pulling 0.92g on the skidpad. With traction control on, the car simply motors around corners. Turn it off and cornering attitude is controlled with the throttle, with great precision. Probably the easiest production car to pitch around a skidpad.

specs tell us that the old car weighed 3,535 lbs., the new car 3,415, so it's not quite the 310-lb. reduction quoted in the press kit. But this weight reduction comes despite the addition of dual airbags, and bigger wheels, brakes, and tires. Compared to the old model, a lot of hardware has been dropped, including the electrically adjustable shocks, which we consider useless on most cars. The telescoping steering column was also eliminated, and the engine hood is now made of aluminum to save weight.

The Supra Turbo is fitted with a six-speed manual transmission, in which only sixth is an overdrive. The transmission has triple-cone synchros for first and second, double-cone synchros for third and fourth, and normal single cones for fifth and sixth.

As an option, a four-speed automatic is available. When shifted manually, the automatic transmission supposedly exhibits quicker shifts. The non-turbo Supra gets a different automatic transmission, but also with a manual mode.

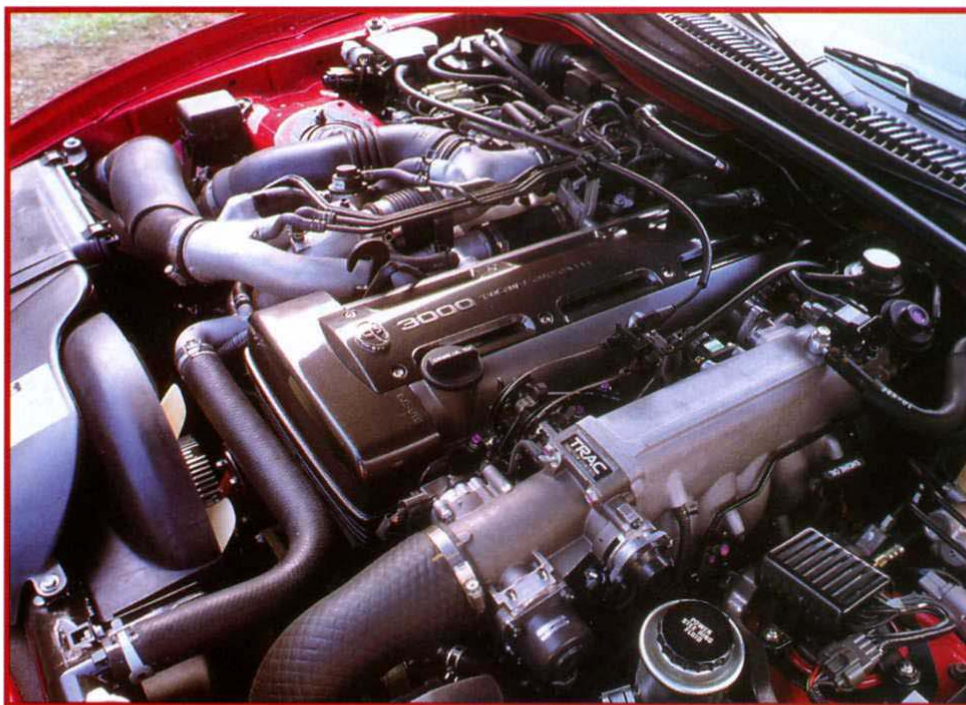
Styling, Interior

Elements of the new Supra's styling are reminiscent of other cars. The greenhouse and bulging flanks are like the standard Celica's, and there are hints of the RX-7. Overall, it's a muscular design. I think it looks better with the standard trunklid treatment, without the hey-look-at-me basket-handle spoiler. Thankfully it's an option on the Turbo, and we hope dealers don't spec all their Supra Turbos with this contraption and instead leave the choice where it belongs, with the cus-

tomers. Although the rear spoiler may strike some as an affectation, at least it's mounted high (like the spoiler on the Ferrari F40 and the 300ZX-based Millen GTZ) so you can peek under it. Rearward visibility remains unhindered.

The taillight treatment is interesting: the round projector light units, mounted under a clear cover, resemble the large, multi-color rear warning lights inside a police cruiser. Or you could interpret them as California hot-rod/race-car chic.

Inside, the dashboard is straightforward, with three identically sized gauges: tach dead ahead, combination instrument with fuel and water temp on the left, and speedometer on the right. The radio and climate controls occupy the center console. There is no forest of switches; everything is concise, to the point, clear-



Above: The heart of the matter, the Lexus/Toyota inline six, which is used in the GS300 and SC300. Here, it has twin sequential turbos, one small for low-end response, the other big for top-end power. The engine's power is demonstrated by its terminal speed of 106.9 mph in the quarter. That's steamin'.

SPECIFICATIONS COMPARISON



	Supra Turbo	Mazda RX-7	Nissan 300ZX TT	Stealth/3000 GT*
List price	\$35-40,000 (est.)	\$32,500	\$37,090	\$37,250
Engine	3.0L I6	1.3L rotary	3.0L V6	3.0L V6
Power	320 @ 5,600	255 @ 6,500	300 @ 6,400	300 @ 6,000
Torque	315 @ 4,000	217 @ 5,000	283 @ 3,600	307 @ 2,500
Redline	6,800	7,500	7,000	7,000
Curb weight	3,415	2,789	3,474	3,803

* specs for Mitsubishi 3000 GT VR4

ly labelled, and easy to find. There is plenty of room for the driver, but the seat could use a little more support in the lower cushion.

At the Strip

On the drag strip, we found that the Supra shares one characteristic with the MR2 Turbo: it's good for one fast run before the intake tract heats up and power falls off. It would take a good half-hour cooldown to prepare for another set of quick numbers. As it was, our first run was our best, with a 0-60 time of 5.30 seconds, and the quarter mile in 13.58 seconds at 106.9 mph. Those quarter mile numbers indicate that the Supra quickly makes up for time lost to wheel spin; it takes massive power to do that.

Two other factors may have prevented us from breaking into the four-second 0-60 bracket: a hot day and a low-mileage motor. If the 600 miles on the odometer were correct, the engine could hardly be considered broken in. We didn't have an opportunity to measure top speed, but guessing conservatively, it should come in at 150 to 155 mph.

These numbers are also a vast improvement over the old Supra Turbo which returned 0-60 mph in a leisurely 6.73 seconds, the quarter mile in 15.21 seconds at 93.9 mph, and a top speed of 146 mph.

For the quickest acceleration, it came as no surprise that letting the traction control do the thinking was not the fastest way down the track. So we had to walk a narrow line between high revs which break the tires loose, and low revs which result in a power-robbing bog that allows the boost to drop. We found that when launched above 3,000 rpm, the tires break loose; the best launch was a little above 2,500 rpm. We also found that there is enough torque to overpower the clutch on speed shifts. We found that sometimes the clutch would spin right after the one-two shift, while the tires remained hooked up.

Skidpad, Brakes

On the skidpad, we recorded a two-way average of 0.92g with the traction control engaged. Sacrilege, you say? We tried it both ways. With the traction control off, we had tremendous fun driving around the entire circle sideways, perfectly in control, much the same as we

were able to do with a Ferrari Testarossa several years ago. Of the production cars we've tested over the years, the Supra is perhaps the easiest to control and recover from extreme sideways attitudes. Steering feel is precise, you know exactly what the front wheels are doing, and your right foot determines what the rears will do. But going sideways slows progress; the traction control did a good job. Unlike some ultra-conservative systems, such as Mercedes', Toyota's traction control still permits a modicum of throttle steer. It's a sports car driver's kind of traction control, and we like it. For comparison, the old Supra managed only 0.85g.

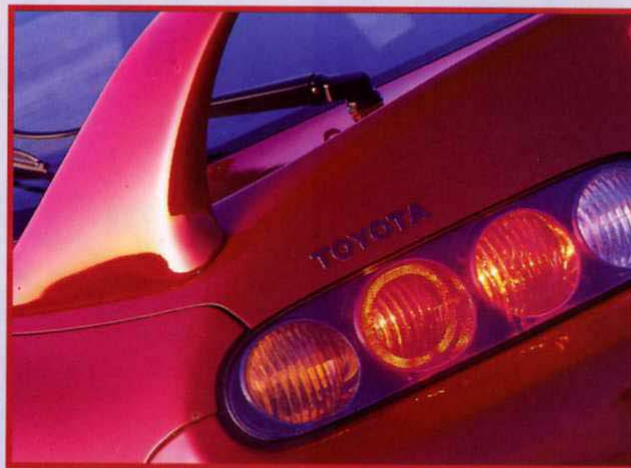
In braking, the Supra turned in outstanding distances, stopping from 60 mph in 114 feet and from 80 in 203 feet, thanks in part to the sticky Bridgestones. Those distances are near the top of the supercar range, close to the records set by the Porsche 911 Turbo (112 and 194 feet respectively). The old Supra wasn't even close: 60-0 in 126 feet, 80-0 in 227. Like Mercedes, Toyota uses an ABS system that senses lateral acceleration and modulates the brakes accordingly.

Smooth, Flexible

Our flexibility tests again underscored the Supra's wide and flat torque curve, belying the turbos spinning under its hood. Boost seems to come on strongly at revs as low as 2,500 rpm, and acceleration remains strong well past 6,000 rpm. The sequential twin turbos—in which a small turbo comes onstream at low revs and a larger one kicks in for high-flow, high-rev use—help the Supra achieve strong flexibility numbers in third and fourth gears: 30-50 mph and 50-70 mph times in both are nearly identical. Only in the direct fifth and overdrive sixth gears is there a significant increase in acceleration as revs and boost climb. The straight six is smooth at all revs, even at full throttle in sixth at 1,000 rpm.

The Supra Turbo is a worthy contender in the \$30-\$40,000 high-powered sports car class, along with the 300ZX Twin Turbo, Dodge Stealth/Mitsubishi 3000, and Mazda RX-7. Our test car was a hand-built pre-production vehicle. We're looking forward to getting a regular production car in the near future, and doing an over-the-road comparison with its market competitors. ■

TECHNICAL SPECIFICATIONS



Data

Vehicle: Toyota Supra Turbo
Vehicle type: front engine, rear-wheel drive, 2+2 sports coupe
Body/chassis: steel unit body

Prices

List price (est.): \$35-40,000
Options: AM/FM/cassette/CD player; removable aluminum roof panel; rear spoiler; four-speed automatic transmission

Engine

Configuration: inline six cylinder, twin sequential turbochargers, intercooled, iron block, aluminum heads
Bore x stroke: 86.0 x 86.0 mm
Displacement: 2,997cc
Compression: 8.5
Horsepower: 320 bhp @ 5,600 rpm
Torque: 315 lbs. ft. @ 4,000 rpm
Redline: 6,800 rpm
Fuel delivery: electronic sequential fuel injection
Fuel requirement: premium unleaded
Valve train: belt-driven double overhead cams, four valves per cylinder

Transmission

Type: six-speed manual
Ratios: 1st: 3.82; 2nd: 2.360; 3rd: 1.686; 4th: 1.312; 5th: 1.000; 6th: 0.794
Final drive: 3.133, traction control and Torsen limited slip differential

Dimensions and Capacities

Curb weight: 3,415 lbs.
Wheelbase: 100.4 in.
Track, f/r: 59.9/60.1 in.

Length: 177.7 in.
Width: 71.3 in.
Height: 50.2 in.
Head/leg room, f/r: 37.5/44.0 in.; 32.9/23.8 in.
Luggage capacity: 10.1 cu. ft.
Fuel capacity: 18.5 gal.
EPA fuel economy, city/hwy: 17/23 mpg (automatic 18/23 mpg)

Steering, Suspension, Brakes

Steering type: rack and pinion, vehicle-speed-sensitive power assist
Turns lock-to-lock: 3.0
Turning circle: 35.4 ft.
Suspension, f/r: upper and lower A-arms, shock absorbers, coil springs, anti-roll bars
Wheels, f/r: cast alloy, 8 & 9.5 x 17 in.
Tires, f/r: Bridgestone Potenza RE020, 235/45ZR-17; 255/40ZR-17
Brakes, f/r: 12.7 in. vented discs, four piston calipers; 12.7 in. vented discs, two-piston calipers, ABS standard

Performance

0-60 mph: 5.30 sec.
0-100 mph: 12.09 sec.
1/4 mile: 13.58 sec. @ 106.9 mph
Top speed (est.): 150-155 mph
Skidpad: 0.92g
Braking from 60: 114 ft.
Braking from 80: 203 ft.

Engine elasticity (time, seconds)

Gear	30-50	50-70
3rd:	3.0	2.9
4th:	4.2	3.9
5th:	6.5	5.3