

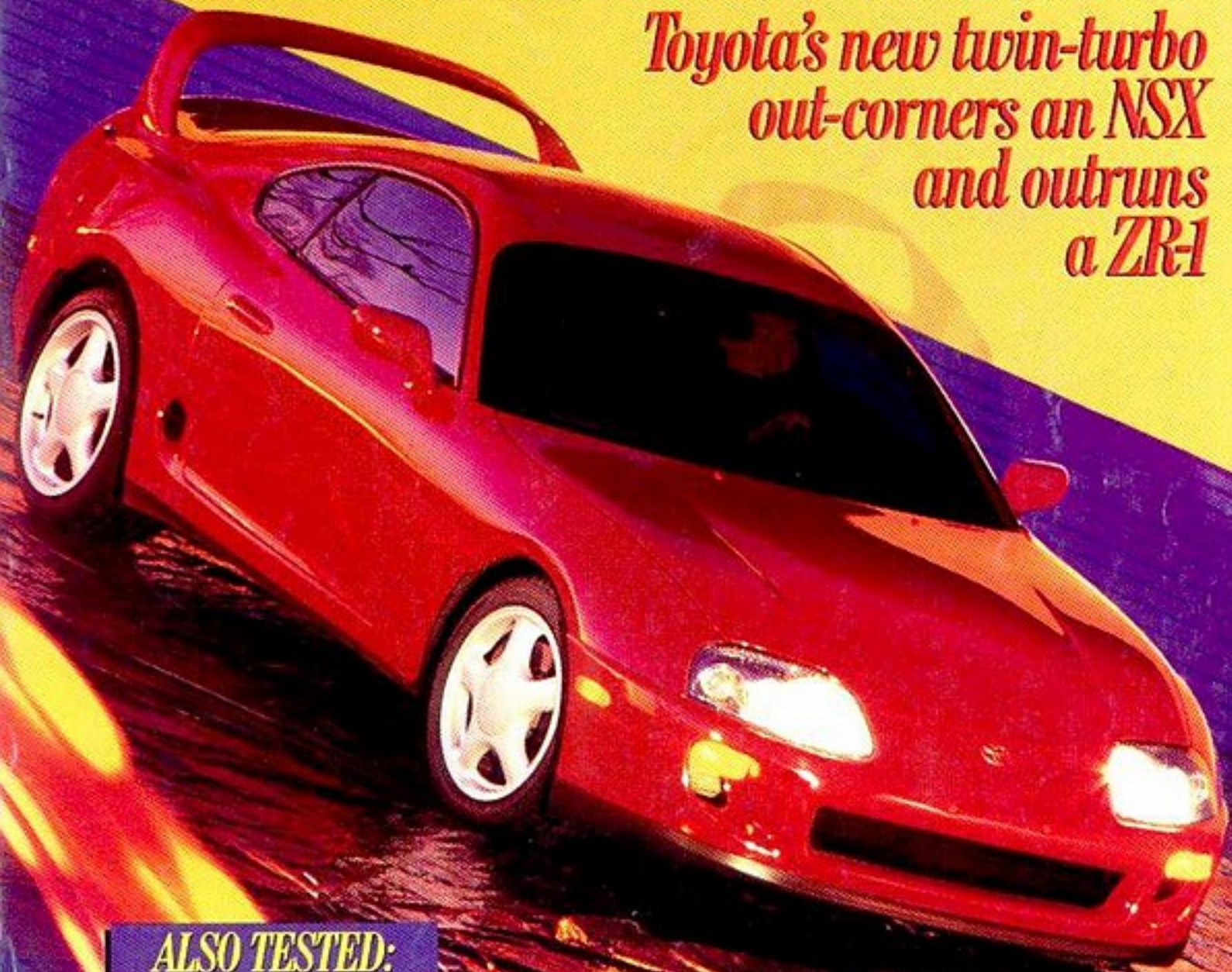
# ROAD & TRACK

MARCH 1993 \$2.95

CANADA \$3.95 UK £1.95

## SUPER-FAST SUPRA

*Toyota's new twin-turbo  
out-corners an NSX  
and outruns  
a ZR-1*



**ALSO TESTED:**

**Vital: V-8 BMW 740i**

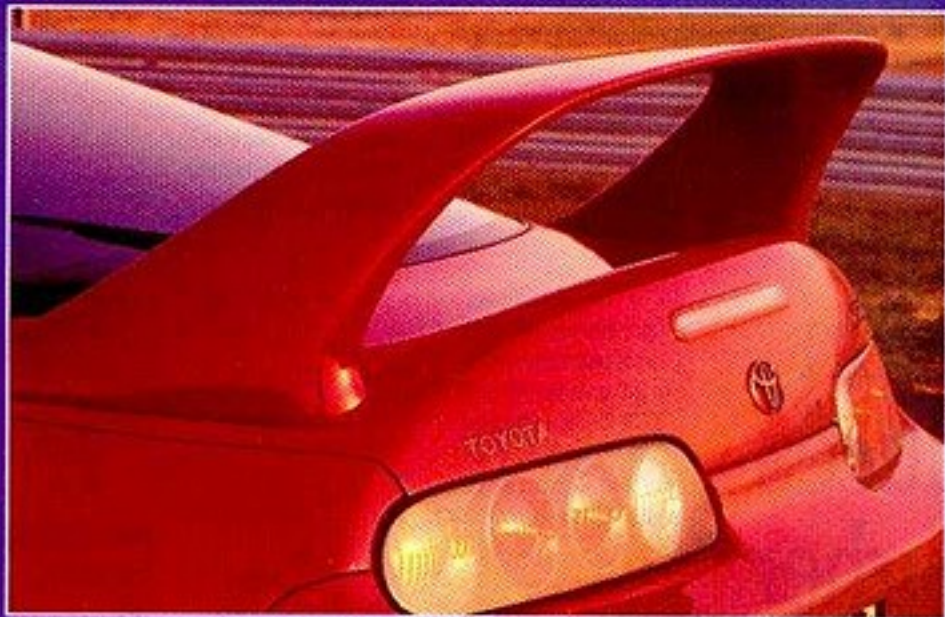
**Vicious: V-12 JaguarSport XJR-S**



# ROAD & TRACK

MARCH 1993

VOLUME 44, NUMBER 7



## Cover Story .....54

A new sports car from a respected manufacturer is always good cause for enthusiastic inquiry. How fast is it? How quick? How lithe? How much? Our test of Toyota's new Supra has resulted in some surprising answers to these questions that force other performance-car makers to sit up, take notice and swallow hard.

COVER PHOTO BY ROY PERRY

The concurring here. ▼



82



▲ The wings of Mercury Marine.



106

◀ The lone Ranger and his dusty sidekick.



120

Blues traveler. ▼



92



44

King of the Roadsters. ▲



69

▲ TWR of power.

Line ▲ dancing.



Details, details.

76

48



One quick Brit. ▲

**R**OUGHLY 40 TIMES a year a brand-new car lands in our laps to be driven, tested, photographed, its details dissected and then finally judged as a success, failure or also-ran. And just between you and me, I'd guess that in about half of these cases, we quietly wish the car's designers had asked us for a few opinions before they'd finished polishing the tooling.

Mind, that's not to say we're a bunch of frustrated automotive engineers. We have trouble enough with our word processors, if you catch my drift. But after a few years, each of us has driven so many cars that, even if we don't notice wearing mismatched socks three days a week, we're hypersensitive to the most minuscule automotive missteps—as well as the quiet touches of good design. Ah, if only they had come to us when the CAD screen was empty.

But for the Supra before you, Toyota not only asked, they listened. Two years ago, Toyota's product-planning staff assembled batches of

magazine folks, me included, buckled us into every significant sports car then available, from the Porsche 944 to the Acura NSX, and then picked our brains with a scalpel.

What is a sports car? What makes it fun or romantic, good-looking, sensitive to the palms of your hands and balls of your feet? How should it make you feel?

Then they disappeared and the rumor mill fired up. The new Supra was a disaster, we heard. At one point it was even believed to have been abandoned.

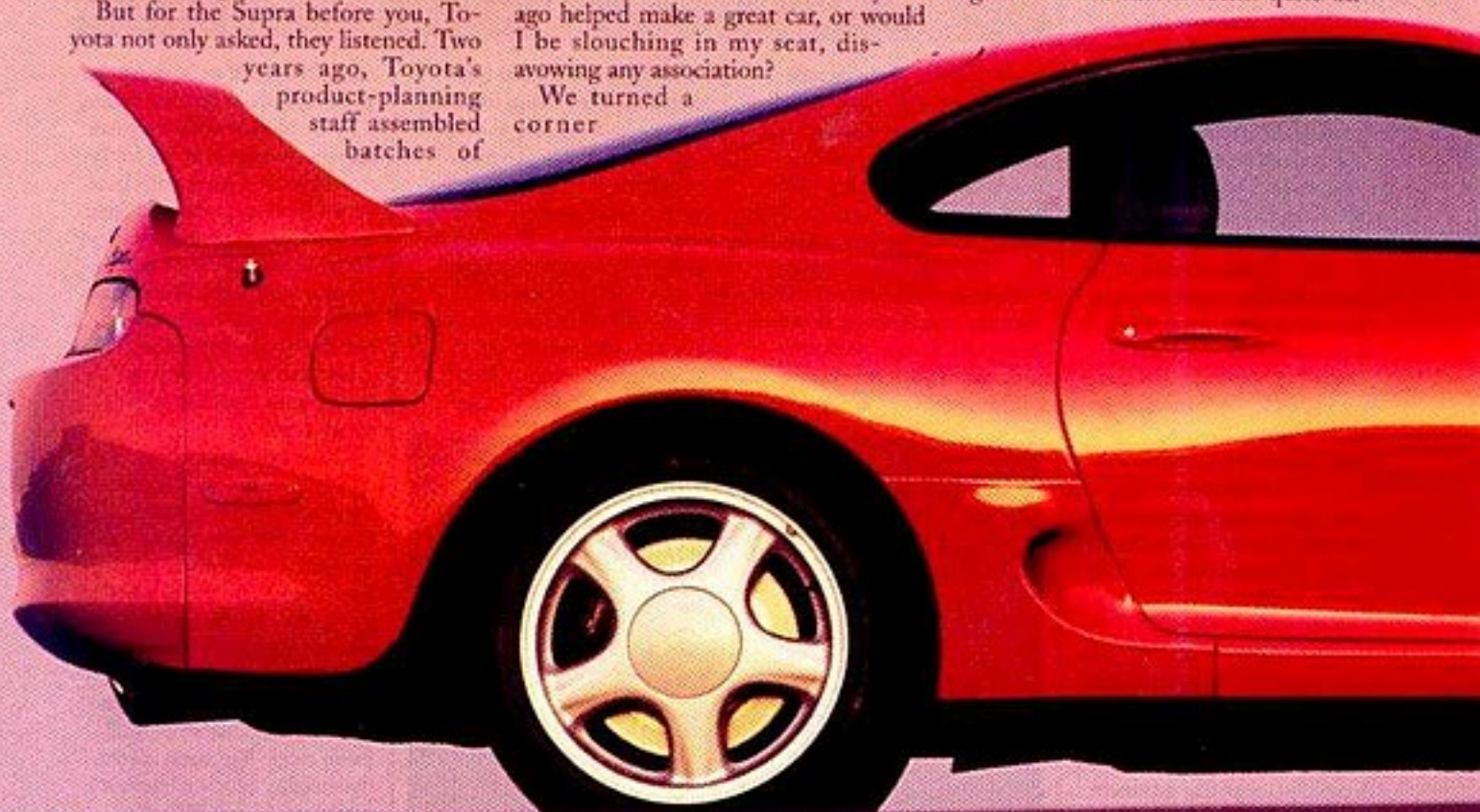
Pulling through the gates of Atlanta Motor Speedway, nerve center for the Supra's introduction, I was wedged into a bus loaded with car-magazine writers, a couple of whom had also been part of Toyota's research panels. Naturally, I was curious and a little edgy. Had we said the right things? In a few minutes would I be sitting tall because my two cents worth two years ago helped make a great car, or would I be slouching in my seat, disavowing any association?

We turned a corner

and there it was, a husky-shouldered, squatting, angry-looking car with a big hungry face and, in the case of our test Turbo model, topped off with a towering Ferrari F40-ish rear wing that, by golly, looks as if it might be more than cosmetic (Toyota claims 66 lb. of downforce at 90 mph—a useful quantity).

At least visually, this is not the car I had instructed them to build. Draw up a hairy-chested modern roadster along the lines of an updated big Healey or even an E-Type, I'd said. Evidently they didn't write that suggestion down, but the Supra they've come up with instead certainly is a raucous contender that will have no trouble elbowing itself up to the table alongside Nissan's 300ZX, Mazda's RX-7 and Mitsubishi's 3000GT (see accompanying story).

When you finally spot the car on the streets (start looking in June), walk around it quickly and see if you don't agree with me that it seems quite dif-



ROAD & TRACK  
R & T  
ROAD TEST

Toyota **SUPRA**

ferent from its photographs. A picture, naturally, captures just one perspective at a time. What's odd about the Supra is that its appearance seems to vary sharply with different perspectives. Some I like, some I don't.

A few of my strongest opinions: The nose is a grand slam. Topped by two big glaring exposed headlamp lenses shrouding triplets of nasty laser-like lamps (high and low beam, plus fog penetrators), it provides a forceful, wide-eyed visage guaranteed to provoke double takes in many a rearview mirror. And these lamps are effective too, Toyota assures us, capable of illuminating more asphalt than any other car on the market.

Below them is a big rectangular air intake flanked by curling side nostrils with bullet turn indicators nestled in their corners. Sinister. Intentionally, all three openings are without grilles—you can plainly see the radiator and ad hoc hoses plumbed here and there. It's not exactly pretty, but it's good, strong stuff; just what a sports-car's face should be.

Likewise, the big rounded rear-wheel arches telegraph rear-

drive horsepower in no uncertain terms. And from there, they pinch back neatly into a narrow tail studded with packed quartets of tiny taillights. It's a unique, tense look that draws a long stare and a longer second look. A sports-car's styling should do that too.

What's between the car's ends is less convincing. The shapes are curvaceous in Toyota's typical way that relies on big radii arcs that frequently compound from convex to concave and back again. Here and there are reminders of the MR2 and Celica, for example. And maybe there's also some Honda Prelude sprinkled into the shape of the car's side window glass.

But some aspects of the body shape simply fall flat: The side scoops carved into the rocker panels look obviously tacked on, and dump air only into the rear wheel wells, lacking the ducting needed to cool the brakes. And from nearly any vantage, the proportion of roof, pillars and glass above the fenders and door tops looks undersized. As though the upper half of the car was drawn in three-quarter scale. They don't match, to my eye; and other staffers concur.

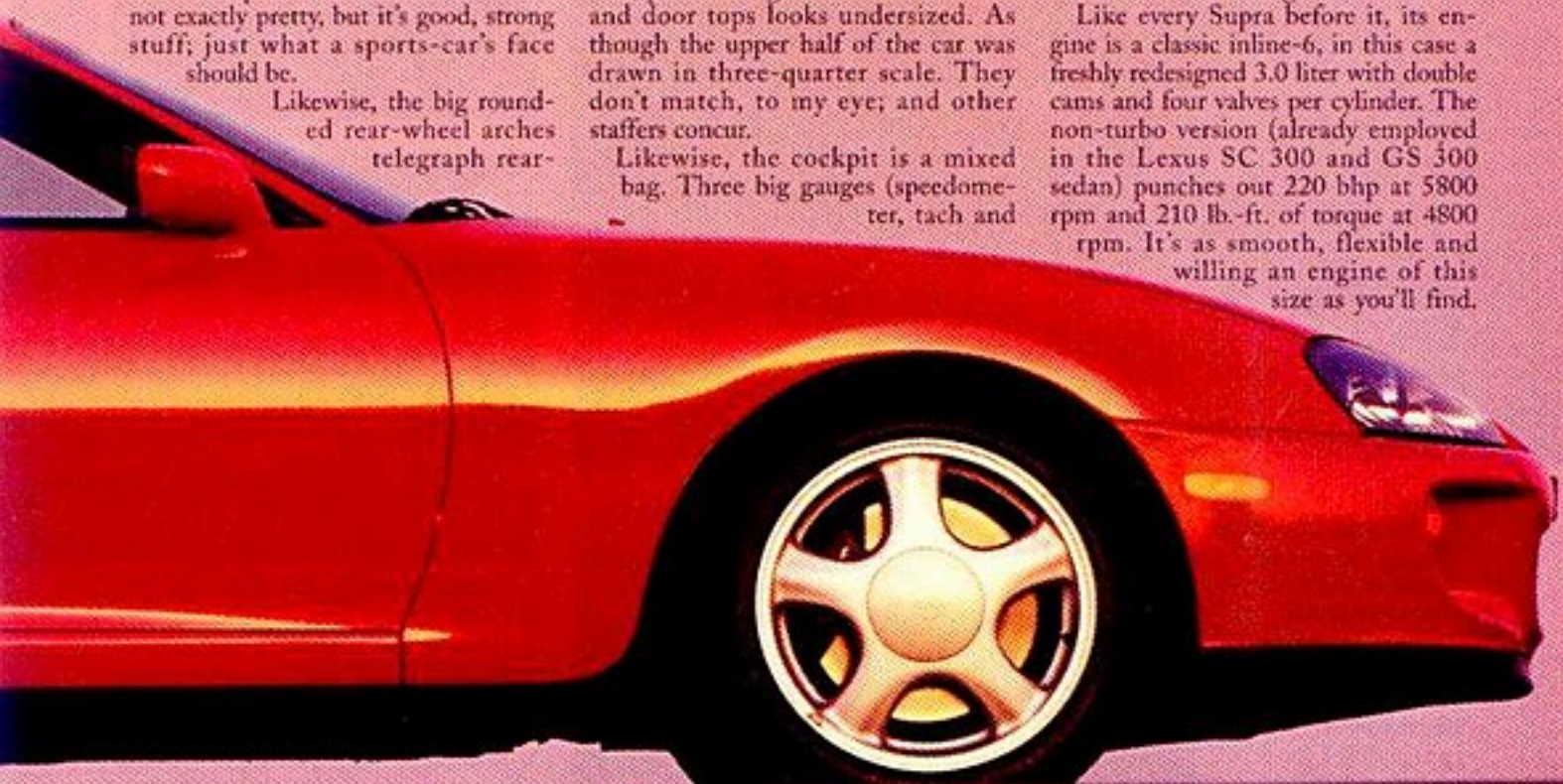
Likewise, the cockpit is a mixed bag. Three big gauges (speedometer, tach and

a combination of temperature and fuel needles) are bright and canted directly at you, but oil pressure and temperature data are no-shows. The instrument pod seems excessively hooded, and the center console is angled toward the driver so much that snagging reverse in our test car (to the right and back) can pinch your fingers. The oddest aspect of the design, in my opinion, is the rather featureless, wraparound panel that holds the gauges, radio and ventilation controls (and these not too well organized). It seems almost unfinished, as though the interior styling guys just ran out of time.

Styling controversy is skin deep, however. A few millimeters beneath the Supra's controversial exterior are the mechanical specifications of a romping, stomping, nonnegotiable sports-car success. Twist the ignition key.

A quick whir of the Turbo version's starter and 320-horsepower throb to life. Now we're talking.

Like every Supra before it, its engine is a classic inline-6, in this case a freshly redesigned 3.0-liter with double cams and four valves per cylinder. The non-turbo version (already employed in the Lexus SC 300 and GS 300 sedan) punches out 220 bhp at 5800 rpm and 210 lb.-ft. of torque at 4800 rpm. It's as smooth, flexible and willing an engine of this size as you'll find.

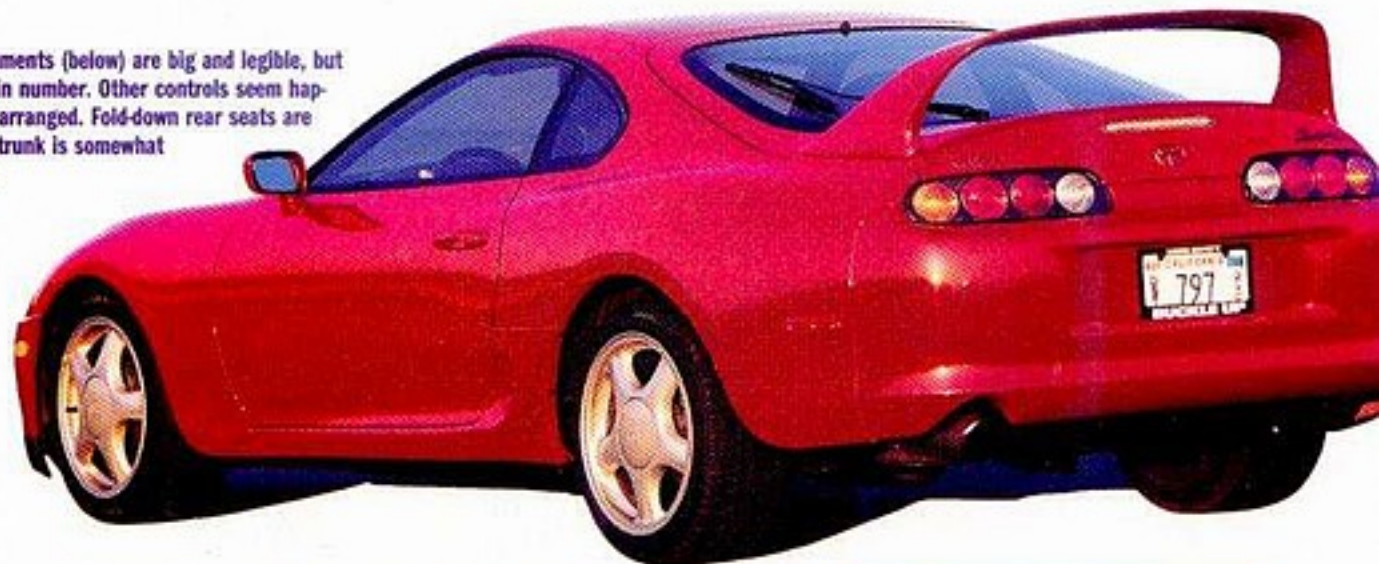


# TURBO

A road rocket enters a new performance dimension

BY KIM REYNOLDS  
PHOTOS BY RON PERRY

■ Instruments (below) are big and legible, but minimal in number. Other controls seem haphazardly arranged. Fold-down rear seats are tiny and trunk is somewhat shallow.



Coupled to it is either a velvety-shifting Toyota-designed 5-speed manual or 4-speed automatic.

The intercooled turbo version generates an added 100 horsepower at 5600 rpm and 315 lb.-ft. of torque at 4000 rpm.

Listen up. This is quite an engine. Like the Mazda RX-7, it's blown by twin but sequential turbos, meaning only one is employed up to 3000 rpm for quick response. As the revs climb past this, the second turbo begins idling and then ladles in its share of boost as 3500 rpm sweeps around the dial. I found the transition to be utterly seamless, with the turbo's presence first felt at 2500 rpm and an extra punch of power ar-



riving at about 4800. From there, the engine whistles up to its 6800-rpm redline freely enough to keep the rev limiter liberally exercised. Stab the throttle at cruising speed and the small turbos certainly spin up responsively, but I would guess that it takes three-quarters of a second for their full pressure to arrive.

Unlike the normally aspirated Supra, the Turbo offers two intriguing transmissions: a 6-speed manual designed by Getrag and Toyota, and a 4-speed automatic allowing manual shifting that, for a change, feels akin to manual shifting. Just press a button adjacent to the shifter, and shift times are reduced 30 percent. However, I'd strongly recommend the 6-speed manual. Not only are this transmission's throws short (I measured about 4 in.), but its action is Miata-light as well. It's the kind of box you find yourself shifting up and down along a straight road, just for fun. My only criticism is that I did notice some rubber-banding as I got on and off the throttle tooling along in the middle gears.

But then why get on and off the throttle when you can keep it pressed

# 1993 Toyota SUPRA TURBO

## IMPORTER

Toyota Motor Co.  
19001 S. Western Ave.  
Torrance, Calif. 90509

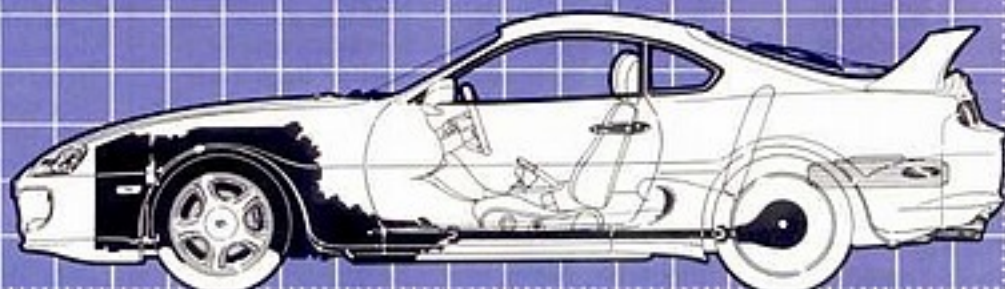
## PRICE

List price, all P.O.E. est \$38,000  
Price as tested est \$39,500  
Price as tested includes std equip. (driver & passenger airbags, air cond., leather seats, cruise control; pwr driver's seat, windows, mirrors & locking); upgrade AM/FM stereo/cassette & CD (est \$750), rear wing (est \$750).

0-60 mph	5.0 sec
0-1/4 mi	13.5 sec
Top speed	est 155 mph
Skidpad	0.98g
Slalom	66.0 mph
Brake rating	excellent

## TEST CONDITIONS

Temperature	60°F
Wind	calm
Humidity	45%
Elevation	990 ft



SCALE: 1/2 in. (12.5 mm) DIVISIONS  
DRAWING BY BILL COBSON

## ENGINE

Type: intercooled twin turbo with alum head & iron block, inline-6  
Valvetrain: dohc 4-valve/cyl  
Displacement: 183 cu in./2997 cc  
Bore x stroke: 3.39 x 3.39 in./86.1 x 86.1 mm  
Compression ratio: 8.5:1  
Horsepower (SAE): 320 bhp @ 5800 rpm  
Bhp/liter: 106.8  
Torque: 315 lb-ft @ 4000 rpm  
Maximum engine speed: 6800 rpm  
Fuel injection: elect. sequential port  
Fuel: prem unleaded, 91 pump oct

## CHASSIS & BODY

Layout: front engine/rear drive  
Body/frame: unit steel  
Brakes: Front: 12.7-in. vented discs  
Rear: 12.8-in. vented discs  
Assist type: vacuum, ABS  
Total swept area: 573 sq in.  
Swept area/ton: 332 sq in.  
Wheels: cast alloy, 17 x 8 1/2, 17 x 9 1/2  
Tires: Bridgestone Potenza RE 020, P235/45ZR-17 I, P255/50ZR-17 r  
Steering: rack & pinion, power assist  
Overall ratio: 17.5:1  
Turns, lock to lock: 3.0  
Turning circle: 35.4 ft  
Suspension: Front: upper & lower A-arms, coil springs, tube shocks, anti-roll bar  
Rear: upper A-arms, dual lower lateral links, semi-trailing links, coil springs, tube shocks, anti-roll bar

## DRIVETRAIN

Transmission			6-sp manual
Gear	Ratio	Overall ratio	(Rpm) Mph
1st	3.83:1	12.50:1	(6800) 40
2nd	2.36:1	7.71:1	(6800) 65
3rd	1.69:1	5.51:1	(6800) 90
4th	1.31:1	4.28:1	(6800) 116
5th	1.00:1	3.27:1	(6800) 152
6th	0.79:1	2.59:1	est (5500) 155
Final drive ratio			3.27:1
Engine rpm @ 60 mph in 6th			2110

## GENERAL DATA

Curb weight: est 3450 lb  
Test weight: est 3600 lb  
Weight dist (with driver), f/r, %: est 52/48  
Wheelbase: 100.4 in.  
Track, f/r: 59.9 in./60.1 in.  
Length: 177.7 in.  
Width: 71.3 in.  
Height: 50.2 in.  
Ground clearance: na  
Trunk space: 8.0 + 3.0 cu ft

## MAINTENANCE

Oil/filter change: 7500 mi/7500 mi  
Tuneup: 30,000 mi  
Basic warranty: 36 mo/36,000 mi

## ACCOMMODATIONS

Seating capacity: 2+2  
Head room, f/r: 38.0 in./33.0 in.  
Seat width, f/r: 2 x 19.0 in./2 x 18.0 in.  
Front-seat leg room: 43.5 in.  
Rear-seat knee room: 24.5 in.  
Seatback adjustment: 70 deg  
Seat travel: 9.5 in.

## INTERIOR NOISE

Idle in neutral: 48 dBA  
Maximum in 1st gear: 73 dBA  
Constant 50 mph: 63 dBA  
70 mph: 68 dBA

## INSTRUMENTATION

180 mph speedometer, 8000 rpm tach, coolant temp, fuel level

## ACCELERATION

Time to speed	Seconds
0-30 mph	2.2
0-40 mph	2.9
0-50 mph	4.0
0-60 mph	5.0
0-70 mph	6.5
0-80 mph	8.0
0-90 mph	9.9
0-100 mph	11.8
Time to distance	
0-100 ft	3.0
0-500 ft	7.5
0-1320 ft (1/4 mi): 13.5 @ 107.0 mph	

## FUEL ECONOMY

Normal driving: est 19.0 mpg  
EPA city/highway: est 18/23 mpg  
Cruise range: est 330 miles  
Fuel capacity: 18.5 gal.

## BRAKING

Minimum stopping distance  
From 60 mph: 120 ft  
From 80 mph: 225 ft  
Control: very good  
Pedal effort for 0.5g stop: 16 lb  
Fade, effort after six 0.5g stops from 60 mph: 21 lb  
Brake feel: excellent  
Overall brake rating: excellent

## HANDLING

Lateral accel (200-ft skidpad): 0.98g  
Balance: mild understeer  
Speed thru 700-ft slalom: 66.0 mph  
Balance: mild understeer  
Lateral seat support: excellent

## Test Notes...

■ Acceleration runs with the traction control switched off require more than a little extra concentration. The Supra is prone to not only rear wheel hop, but also a willingness to step out of line well into 2nd gear.

■ The Supra's grip is tremendous. Its balance through the slalom and resistance to roll mark it as one of the world's best-handling cars. In fact, if its steering feel had a touch better filtering, it might well be the best.

■ The Turbo's enormous power requires considerable respect while cornering. It's quite easy to have the tail flick out exiting a slow corner, requiring the driver to dial in a lot of steering lock.

Subjective ratings consist of excellent, very good, good, average, poor; na means information is not available.

down and thunder to 60 mph in 5.0 seconds? Nice round number, five seconds. And bettered in our Road Test Summary by only the Dodge Viper, Ferrari's 512TR and F40, the Lamborghini Diablo, Shelby's 427 Cobra and the Vector W8 Twin Turbo. Aver-

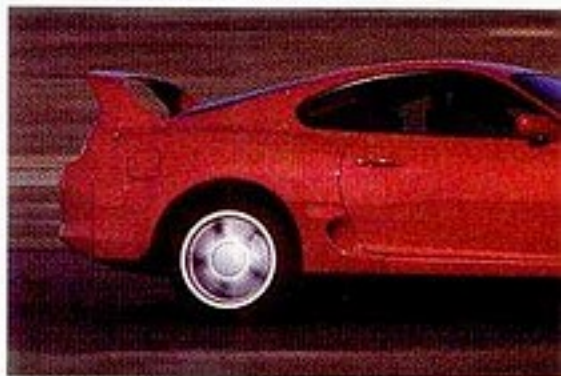
age price: \$306,917. At approximately \$38,000 for the Turbo (and about \$32,000 for the naturally aspirated version), it doesn't take a mathematician to figure out that the Supra Turbo is one of car-dom's biggest bangs for the buck. To underline the point, al-

though the Supra is speed-limited to 155 mph, Toyota assured us that it can threaten 180.

Of course, sprint speed has as much to do with reducing weight as adding power, and so Toyota has gone to work on the Supra's problem waistline. At the introduction, for example, they showed us how bolt heads have been dished, the optional rear wing has been molded with tiny air-filled glass spheres, and the carpeting's fibers have been formed in hollow strands. Indeed, there's even a single exhaust system to trim pounds (resulting in a tailpipe big enough to swallow a Coke can, which a few staff comedians demonstrated). And it helps, with the Supra Turbo weighing in at 3450 lb. Not bad considering its size and content, but this is still a hefty chunk of car.

Suspension is by double A-arms up front (mounted to a lovely ribbed aluminum crossbeam), and at the back, an upper A-arm, twin lower lateral links plus an angled trailing link per side. Brakes are huge, 12.7 and 12.8 in. (front and rear, with the former exhaling heat through spiral internal fins). And finally, the tires are likewise substantial, sized 235/45ZR-17 front and 255/50ZR-17 rear (the non-turbo's are a smidgen smaller: 225/50ZR-16 front and 245/50ZR-16 rear).

On paper, the right parts and the



right size, but what happens at the skidpad, 66.0 mph through the slalom and stopping distances from 60 mph on the order of 120 ft. Like the Supra Turbo's acceleration, its handling and braking prowess are close to the best we've ever seen, regardless of cost.

Exciting stuff, but...let's calm down for a second and note a few counterpoints. One, the tires are sticky (we noticed pebbles spraying up into the wheel wells at slow speeds) and so may not last more than a few oil changes. Second, the ride quality, while delightful on a test track, is stiff over real roads—say, a little smoother than the

## A Japanese Heyday

In our line of work passports are probably stamped most with one particular name—Narita Airport, port of entry into Japan. And what with the pricey yen reducing most of us to timid window-shoppers, it seems that the best of what I carry back to the U.S. these days are perspectives about the relative differences among Japanese cars—as exemplified by this quartet of GT flagships pictured below.

Mazda's RX-7 (below left) is the latest sports car from a gutsy company long determined to be contrary. While every one of its competitors employs a turbocharged 6-cylinder engine in its premium sports coupe, Mazda continues to develop Felix Wankel's brainchild, and with remarkable success: 255 bhp, good for 0-60-mph times of 5.5 seconds. Felix would be proud. And while other Japanese cars have been noticeably gaining weight, the RX-7 is a study in minimalism, including grippy handling that's almost go-kartlike through transitions. When Mazda designers penned the RX-7, they had a great sports car in mind

and didn't compromise. On the other hand, if your thinking includes generous luggage space, head room and supple ride quality, the RX-7 may be a little extreme.

Mitsubishi's 3000GT VR-4 (below middle) is a bullet from a fast-rising company set on making its mark. The 3000GT VR-4 has carved its place by being big, flashy, fast and complex. It seems Mitsubishi's engineers pulled out every stop imbuing this flashy sports coupe with 300 bhp, all-wheel drive, 4-wheel steering, adjustable air dam and rear wing, and even a muffler that can alter its exhaust note to suit. On the road the 3000GT VR-4 feels substantial, and though tremendous in foul weather, its weight (3875 lb., giving a 0-60-mph minimum of 6.3 sec.) is sometimes at odds with its mission as a nimble GT.

With the 300ZX (below right, the oldest car in this category), Nissan indulged its habit of injecting its cars with European feel and design qualities. Let's say it's our pick for combining fast driving with a stop for espresso. We loved the 300ZX's styling four years ago, and personally, I think it's destined to become a classic. And as a performer, the 300ZX has yet to show any serious wrinkles, though its acceleration has been eclipsed by

the Mazda, Mitsubishi and Toyota (the 300ZX Turbo requires 6.5 sec. to reach 60 mph). However, we don't care: The 300ZX Turbo has a magic in its immediacy—particularly ageless are the agility of its steering and quick bang of acceleration from its twin-turbo V-6.

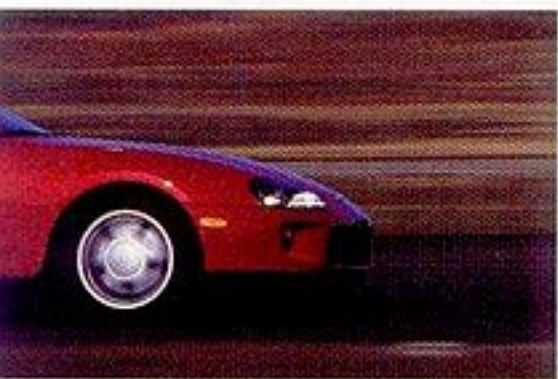
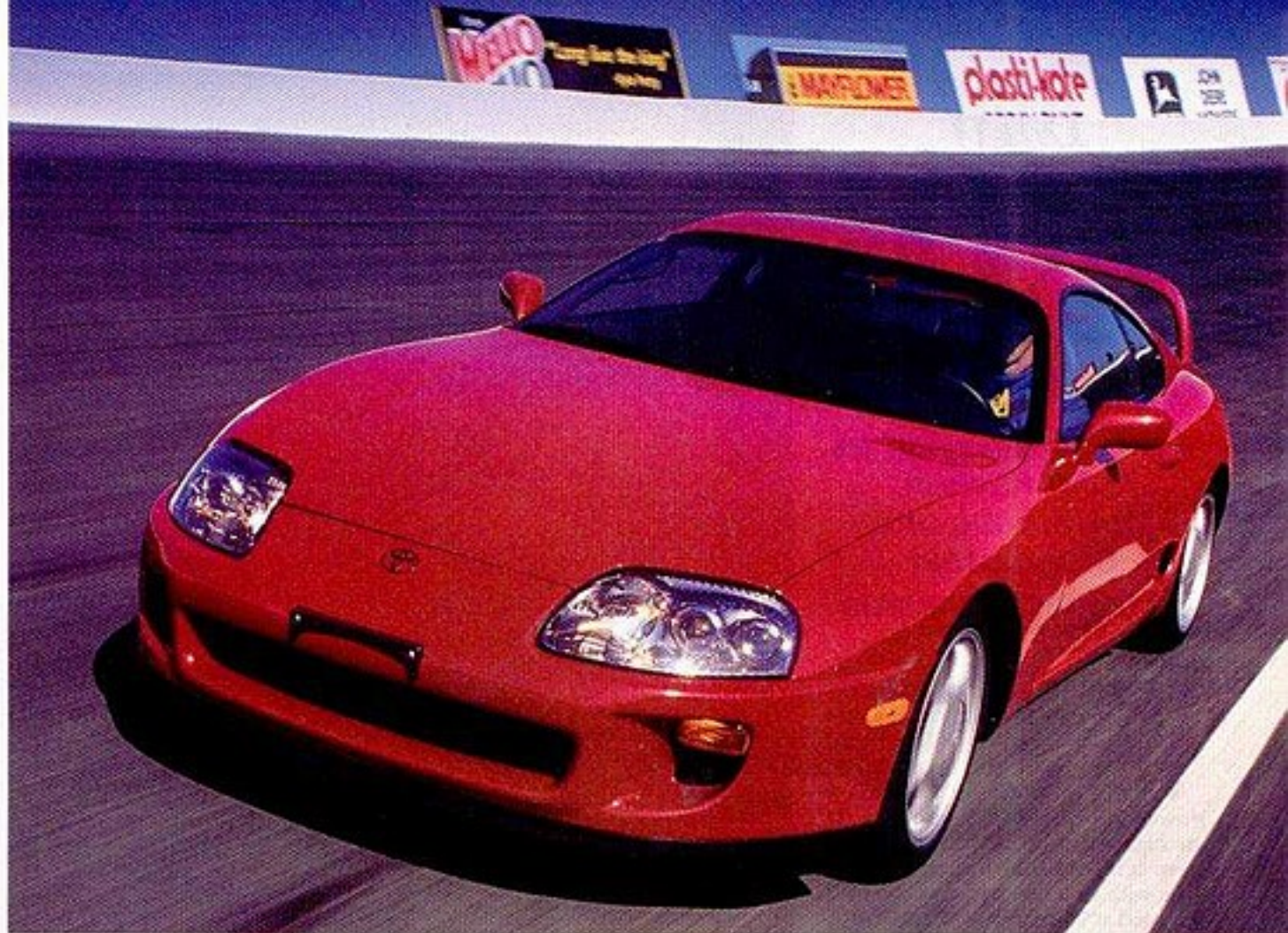
So if the Mazda is determinedly contrary and maybe a little severe; the Mitsubishi, a technical dazzle but a tad heavy; and the Nissan, a quietly aging Japanese-European, how do we paint Toyota's Supra?

As the Desert Storm of GT design, perhaps. It's a frontal attack with sophisticated technology blazing and no time for apologies. The Supra's a big car, nearly as long as the 3000GT with easily the longest wheelbase of them all. But most important, it's a crushing performer in this group, simply faster and with more tenacious handling than its peers, period.

Oddly enough, as the number of great GTs continues to grow, the market itself has shrunk to the point where building these cars isn't always profitable. Will they have a future? Let's hope so because the Japanese high-performance GT is certainly in its heyday, and we're loving it.

—Kim Reynolds





Right-hand air inlet feeds the single air-to-air intercooler. Below, Supra's big inline-6 has been totally redesigned with twin sequential turbos mounted high on the engine's right side (in fact, they're easy to spot). Brake rotors (right) employ spiral internal vents to pump maximum air.



RX-7's and similar to the 300ZX's. The handling, while breathtaking at times with micrometer-precise steering, doesn't have quite the feedback I relish in cars like Porsche's 968. And around Atlanta Motor Speedway's infield road course, the Turbo's power exiting corners could easily scoot the tail out twice as far as I had guessed it was likely to drift.

So, is the Supra what I told Toyota to build two years ago? Maybe it's fortunate they resisted my lobbying for another big Healey. Plenty already exist. But a Supra with this magnitude of road-rocket performance could be history in the making. 