



# STEALTH FIGHTER

With incredibly smooth and linear power delivery from its twin-turbo V6 and ultra-sophisticated running gear that makes the driver feel he or she can do no wrong, the Nissan GT-R is one deceptively fast machine.

by JEFF GLENN    photography courtesy NISSAN





The GT-R is steeped in tradition as Nissan's fastest and most technically sophisticated vehicle. Nissan had us drive the all-new version at the Sendai Hi-Land raceway north of Tokyo because this was the track chosen to prepare the GT-R for its eventual assault on Germany's Nürburgring. The development team spent some seven weeks at the Sendai track dialing in the car. As a result of their efforts, the GT-R lapped the Nürburgring Nordschleife in 7:38—a lap time that puts it a full two seconds ahead of its performance benchmark, the Porsche 911 Turbo. Then there's the GT-R's other performance figures: 0-60 mph in 3.5 seconds, the quarter-mile in 11.7 seconds and a 193-mph top speed. By numbers alone, the GT-R is one serious car.

When we arrived at the track, we had already toured Nissan's engine plant in Yokohama and walked the GT-R assembly line at Tochigi, but hadn't spent any time with the car itself. That didn't change immediately, as we were hustled past a lineup of GT-Rs for a presentation by project leader Kazutoshi Mizuno and key members of his team. Their speeches relied heavily on elaborate charts depicting everything from which side of the brain the GT-R tickles—according to the graph, it's not the side associated with the clothes found in a general merchandise store—to cornering lines that demonstrate the GT-R's ability to deliver more fun earlier in the cornering process than other cars. Looking around the room, it was almost a "Lost In Translation" moment.

Then we walked outside, and finally got to feast our eyes on the car itself. Photos don't quite do the GT-R justice, especially in regard to its front fenders; the wraparound bulges are more gentle than most shadowy photos depict. Its proportions are pure muscle car with a little stealth fighter angularity mixed in; no one will accuse the GT-R of being subtle. Overall, the Nissan has a very Japanese look—think origami supercar.

Designer Hiroshi Hasegawa had the GT-R's rich heritage in mind when he incorporated elements from previous generations of the car into his vision. For example, the new version's large round taillights echo those of the 1973 GT-R (which looked like it borrowed its overall shape from a 1967 Dodge Charger fastback), while the single-slit grille comes from the 1999 R34 GT-R. However, for the first time since 1969, the GT-R bodyshell isn't shared with the Skyline sedan.

While I was standing next to the car, Hasegawa asked me if I liked anything in particular about the design. I pointed to the odd angles on the C-pillars: "Details like these keep it from looking like anything else," I offered. Hasegawa smiled and said, "Function makes form." And then he



explained how the kink in the pillar bleeds off air pressure, keeping the laminar flow close to the rear window and guiding it toward the rear wing. Same with the front fender vents, which help evacuate air from the wheel wells and keep the airflow close to the sides of the car.

Big, upright and angular aren't aesthetic values typically associated with low drag, but Nissan's flagship punches a pretty smooth hole in the air with a Cd of just 0.27. Airflow over, under and through the car was carefully considered. For example, an elaborate system of underbody panels splits the airflow in two, cleaning up the air speeding underneath the car and aiming it towards a large rear diffuser for downforce and directing the air from the engine compartment through the central driveshaft tunnel toward the transmission and final drive at the rear for cooling. Keeping the car planted and comfortable at speed was one of the main design criteria for the project, and every piece of the puzzle reflects a purpose tied to this goal.

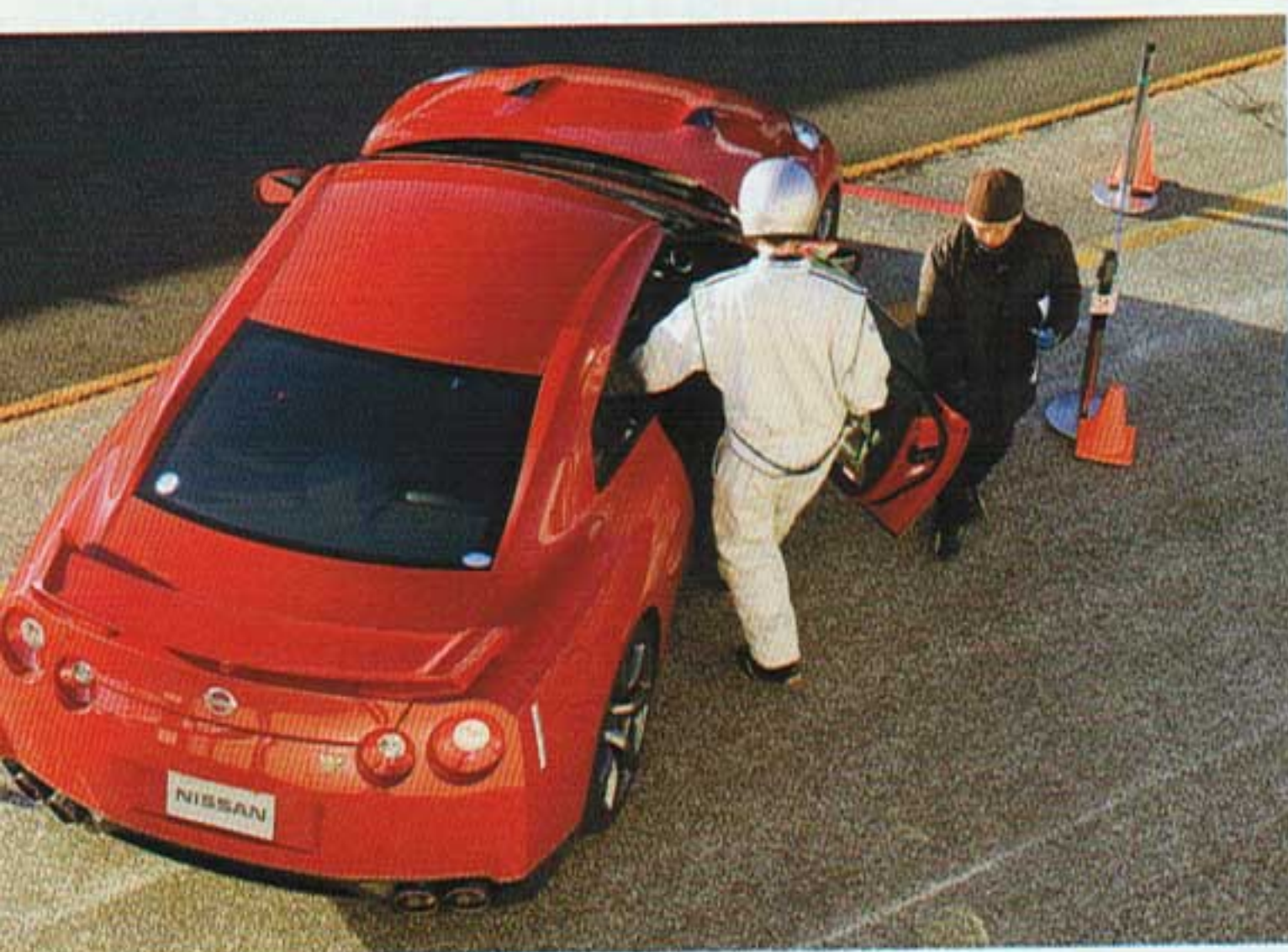
For a car packed with so much technology, the look of the interior is surprisingly gimmick-free. The controls are straightforward and the overall material quality and execution should send designers of the similarly priced Chevrolet Corvette Z06 back to the drawing board. The Bose sound system includes 11 speakers, two of which are nine-inch subwoofers mounted in a die-cast aluminum box between the rear seats—great for belting out the Dill (Japanese electronics). However, the rear seats themselves are devoid of legroom, and will serve as a decorative package tray for most.

The racy-feeling front seats and the central analog tach with its 7,000-rpm redline make me eager to hit the track, but before I could push the red start button, a Nissan technician popped his head in and gave a quick run-through of the three toggle switches above the center gear selector.

The toggle on the left controls the twin-clutch paddle-operated 6-speed manual transmission. In the Normal setting, the

The toggle on the right sets the Vehicle Dynamic Control system. In the Normal setting, VDC actively stabilizes the car with individual wheel braking and power reduction when input and yaw sensors indicate things are getting hairy. Flicking the toggle upward to the "R" mode causes stabilization assistance to come on later, and instead of using the brakes, it shifts torque distribution to keep the car on the pavement. Pushing the toggle switch down turns the system off. With the shocks and shifter switched to "R" and VDC in its Normal setting, it's finally time to hit the track.

The first thing I noticed was the urgent sound of the twin-turbo V6. It's crisp and high-pitched—producing a more racy note than the hollow groan of the naturally aspirated V6 in the 350Z. Though based on that car's VQ-series powerplant, this engine (referred to internally as VR38DETT) is specific to the GT-R. The hand-built 3.8-liter V6 utilizes an aluminum block with plasma-



Above, left to right: Roof sculpting helps channel airflow to rear wing; though simple in appearance, the GT-R's cockpit is a marvel of technological sophistication.

I suited up in Nomex and climbed into one of the GT-Rs arrayed in the pit lane. With a helmet on, it was hard to take in all the interior details—there's a lot to take in. The central touch-screen navigation and display panel serves as the GT-R technology hub. Designed by Gran Turismo creators Polyphony Digital, the unit has myriad screens that can display all kinds of information: water temperature, engine and tranny-oil temp and pressure, boost pressure, fuel-injection volume, front-to-rear torque distribution. It also works as a data-acquisition system for track days (or back-road runs) by graphing throttle opening, speed, steering angle, brake pressure and lateral and longitudinal g forces. There is even a rally-style time and speed logger.

transmission delivers shifts at the pace of a good torque-converter automatic, or 400-millisecond shifts when you tug on the steering wheel-mounted paddles. Flick the toggle upward to illuminate the red "R" light, and the transmission delivers 200-millisecond paddle shifts.

The central toggle controls the Bilstein Damptronic adjustable shocks. In the default Sport mode, or when toggled down to Comfort, the shocks' computer-controlled valving continually adjusts the ride for conditions by processing information from a host of sensors—including speed, lateral acceleration, steering angle, brake pressure, engine rpm and torque distribution. Move the switch up to "R" mode, and the valving is fixed at the stiffest setting for track use.

coated cylinder bores that both aid cooling and save nearly 7 pounds over conventional steel liners. Cast directly into the exhaust manifolds, the twin IHI turbochargers run at nearly 11 psi, boosting output to 480 horsepower at 6,400 rpm and 434 lb-ft of torque between 3,200 and 5,200 rpm. In anticipation of serious cornering forces, a dedicated scavenger oil pump feeds both turbos from the special lightweight magnesium oil pan; a pair of heat exchangers keep the oil from getting too hot.

As I exited the pits and got on the gas, the turbos came on very smoothly. The resulting acceleration was deceptive. The GT-R definitely pushed me back in my seat, but not quite as hard as the sucker punch delivered by the Porsche 911 GT2 I had driven a few









weeks prior. But then, just as the engine was about to hit its 7,000-rpm redline, I realized the scenery was flashing by incredibly quickly, much faster than I'd anticipated.

Negotiating the first few corners, I noticed that the steering is quite light, the initial turn-in is sharp and the body roll is negligible, tricking my senses into believing I was in a much lighter car than the 3,873-pound GT-R. The mass only became noticeable when the stability control began to reel in my enthusiasm. The VDC cut the throttle and applied a little braking, creating a mid-corner understeer condition that made the car feel front-heavy. I thought back to the fun-in-corner graph during the presentation, and wondered if I was driving it right? Maybe not.

Regardless, the enormous 15-inch floating rotors, with six-piston calipers in front and four-pot units in the rear, did an excellent job of scrubbing speed and resisting fade, especially considering the curb weight.

Personally, I still like to shift the old-fashioned way with a clutch pedal, but on track and in "R" mode, the GT-R's paddle-activated shifts felt nearly instantaneous, and downshifts include a slight blip to match revs. Because it was so easy to grab a lower gear and so entertaining to hear the little

blip, I was probably over-slowng the car

The transmission is pretty trick. One clutch deals with even gears, the other with odd. This allows the Hitachi-developed computer controller to consult speed, throttle position and brake sensors, anticipate the next gear in sequence and pre-select it, further reducing shift times. Each gearbox/transaxle unit is assembled by a single technician in a clean room at the Aichi Machine Industry Company. Packaging the transmission/transfer case/final drive combo low and at the rear makes for a low center of gravity, and helps even out the weight distribution. The GT-R carries 53.5 percent of its curb weight over the front wheels, which is exemplary for a front-engine, all-wheel-drive car.

With a few laps under my belt, I put the VDC in "R" mode. This was definitely an improvement, since it allowed more rear end movement. Eventually, however, torque is sent to the front wheels, thus returning mild understeer to the helm. With VDC off, the GT-R handled more like a rear-wheel-drive car, and was more willing to rotate quickly with the throttle. When I stayed with it, the computer brain of the all-wheel-drive system still sent torque to the front to keep help keep the car under control, but maintained rear-biased orientation.

The GT-R's light steering feel, combined with the mid-corner vagueness that results from torque being sent forward in differing amounts, left me feeling a bit removed from the proceedings. There's a certain video game-like quality to the GT-R driving experience. Its willingness to change direction, for example, borders on the incredible, and the various electronic systems work so well that I felt that I could do no wrong. The Nissan made me think that even if I did lose control, I could just hit a reset button.

To better understand the GT-R's outer limits, I grabbed a ride with Toshio Suzuki, the ace test driver who set the Nürburgring time. I quickly came to realize the car likes to be tossed around. Suzuki flung the GT-R into tight corners hard and late, with a ton of trail-braking that pitched the car sideways. He followed this immediately with a heavy throttle application that sent gobs of torque to the front. The rotation stopped, and forward thrust resumed more quickly than my more careful driving technique allowed. Just for effect, Suzuki drove the car hard over the berms in the tight esses, and the power delivery remained uninterrupted. This ride showed just how heavily a driver can lean on the GT-R's various computer-controlled systems.





## 2009 Nissan GT-R

### GENERAL

VEHICLE TYPE	Front-engine, AWD 2-door coupe
STRUCTURE	Steel unibody
MARKET AS TESTED	Japan
MSRP	\$69,850

### ENGINE

TYPE	Turbocharged V6
DISPLACEMENT	3.0 liters
COMPRESSION RATIO	n/a
POWER (bhp)	480 @ 6400 rpm
TORQUE (lb-ft)	434 @ 3200 rpm
INTAKE SYSTEM	EFI
VALVETRAIN	DOHC, 24 valves

### TRANSMISSION

TYPE	6-speed manual
FINAL DRIVE RATIO	n/a

### DIMENSIONS

CURB WEIGHT (lbs.)	3873
WHEELBASE (in.)	109.5
TRACK, F/R (in.)	62.6/63.0
LENGTH (in.)	183.4
WIDTH (in.)	74.7
HEIGHT (in.)	54.0

### SUSPENSION, STEERING, BRAKES

FRONT SUSPENSION	MacPherson struts, coil springs, gas shocks, anti-roll bar
REAR SUSPENSION	Multi-link, coil springs, gas shocks, anti-roll bar
STEERING TYPE	Rack and pinion
WHEELS, F&R	Forged alloys
TIRES, F&R	255/40ZR20, 285/35ZR20
BRAKES, F&R	15.0-inch vented discs

### PERFORMANCE

0-60 MPH (sec.)	3.5
TOP SPEED (mph)	193
FUEL ECONOMY (city/highway mpg)	n/a

### CONTACT

[www.gtrnissan.com](http://www.gtrnissan.com)

Clockwise from top: Not simply a turbocharged 350Z V6; front brakes feature 6-piston calipers; straightforward instrumentation; well-bolstered seats; hydraulically actuated 6-speed manual is the only available gearbox.

We were allowed only a very brief run on the narrow backroads and rural motorways surrounding the track guided by a Nav system that only spoke Japanese, so our off-track impressions are limited. On the road, the GT-R felt big, yet nimble, and the upright driving position and good outward visibility made it easy to place in corners. The suspension is stiff, even in the Comfort setting, which was supposedly revalved specifically for the concrete free-ways of Los Angeles; it will be interesting to see if the export Dunlop SP Sport 600s will ride any softer than the Japanese-market Bridgestone Potenza RE 07R summer rubber on our tester. The only other variation between the Japanese and U.S.-spec

GT-Rs, aside from left-hand drive, is the width of the front seat bases; the American ones are wider.

Going through the gears with the paddles in Normal mode, shifts were quick and landed with a positive clunk. When coming to a stop, or executing a three-point turn, the gearbox lost some polish and felt a bit rough. Upshifts and downshifts are smoother when you let the gearbox swap cogs itself, but it moves to sixth too quickly. Our highway run was booby-trapped with speed cameras, so supersonic travel wasn't in the cards, but the car felt extremely planted and razor sharp at 110 mph. The trip to Japan definitely left us yearning for more seat time on less heavily monitored roads.

We've longed for a U.S.-spec version of the GT-R for ages and survived the car's multi-year rollout, so a few more months won't kill us. The de facto tuner car of the Gran Turismo video-game series goes on sale here in June.

There are plenty of American enthusiasts who spend serious money hot-rodding Japanese imports; many of them won't think twice about the GT-R's \$70K price tag, despite it being the highest ever for a Nissan in the U.S. The fact that the car meets or beats the performance of Porsche's \$120K 911 Turbo will no doubt win over some buyers from the German-car fold.

The Nissan company line calls for only 1,500 cars to enter the U.S. in the first year, but with a wink and a nudge, Mizuno admitted that more will find their way here if there's demand. We have no doubt there will be. ●