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# Supercar Challenge

We seek the answer to a complicated question: Who is the baddest in all the land?

BY CSABA CSERE, RON KIINO, FRANK MARKUS, DANIEL PUND, TONY SWAN, AND LARRY WEBSTER

PHOTOGRAPHY BY RICH CHENET AND JEFFREY G. RUSSELL

Last year's megapower shootout of the fastest cars in the land, our "Supertuner Challenge" (September 2001), was such a hit that the call went out again in January to the most respected car tuners and builders in the country: Bring your fastest street car to Michigan International Speedway for the second *Car and Driver* killer-horsepower shootout, now dubbed the Supercar Challenge. (We changed the name from Supertuner Challenge to recognize builders such as Warren Mosler who create complete cars rather than simply modify existing ones.)

Last year, we had 10 entries for the two-day event, although four of those pulled a no-show. Then, during that first day's ride around the Michigan countryside to gauge each car's drivability, a RENNtech CLK60SC suffered an electrical failure that would prevent it from completing any official runs. And after the hard stuff at the racetrack the following day, two more cars—a Mallett 435S Corvette and a Peter Farrell Supercars 3-Rotor RX-7—were wounded, leaving just three standing when the challenge had ended.

So the survival rate at our first challenge was low, but it nonetheless created a lot of buzz among aftermarket tuners and builders. This time around we garnered 17 entries. We were thrilled, because past experience suggested three or four wouldn't show on opening day, and a few more wouldn't survive the two

days of tuner testing. Such attrition would leave a manageable field of about 10 cars for our rigorous track-test day. As we did last year, we would also test a group of hot production cars on a separate day.

For the 2001 Supertuner Chal-

■ Our course starts with the quarter-mile run. (At MIS, that step-off point is the exit of Turn Two.) The cars accelerate past the 1320-foot mark down the back straight, and at 2300 feet they veer left onto the 0.9-mile infield road course. Finishing the road course, the driver returns to the big oval, turning left, and continues through two chicanes used to slow the car through Turn Three, then into Four, and onto the front straight, where the driver accelerates to 150 mph and then brakes to a standstill.



## The Players

	Price as tested	Horsepower*
2001 Apex Lethal 750 Dodge Viper	\$146,804	750 bhp
2002 AutoThorty Stage V 996 Twin Turbo	\$211,556	720 bhp
1997 Beck Lister	\$45,500	550 bhp
1997 Comptech NSX-T	\$155,556	460 bhp
1997 Hennessey Venom 800 Twin Turbo	\$173,396	800 bhp
2000 Lingenfelter 427 Twin-Turbo AWD Sonoma	\$137,027	700 bhp
2000 Lingenfelter Twin-Turbo Corvette Stage II	\$113,460	650 bhp
1997 Mallett 435 Corvette	\$139,232	759 bhp
2002 Mosler MT900S Photon	\$214,070	425 bhp
1997 Olthoff Superformance Sport	\$69,050	540 bhp
2002 Peter Farrell Supercars IS300 Turbo	\$62,850	600 bhp
2003 RENNtech SL55K	\$144,325	575 bhp
2001 RENNtech SLK38K	\$111,937	440 bhp
1999 Specter GTR	\$112,824	550 bhp
2001 TNT Serpent 555	\$117,318	580 bhp

\*Manufacturer's claim

lenge, our course consisted of a quarter-mile sprint, then a hard left onto a 0.9-mile road course in the MIS infield, then a right turn back onto the big track for a run to 150 mph down the back straight, and then braking from that speed—all staged at MIS, the track that Roger Penske made famous. But we goofed in one respect. We set up the 150-mph run on a part of the track that was too short, and only one car was able to reach 150 mph safely: the Lingenfelter Twin-Turbo Corvette, which wound up the winner.

This year, we made more room for the 150-mph run by having

the cars turn left exiting the road course, thereby using MIS's Turn Four and the front straightaway, where there was plenty of asphalt to reach that speed and still brake on a *straight* stretch of pavement. Even the three stock cars got to 150 easily; the only ones that didn't were suffering mechanical ills.

Our other rules for the competition remained pretty much the same. The cars had to run on 92-octane pump gas, and the tires had at least 5/32nds of tread depth and a minimum wear rating of 140 (tires with ratings under 140 are usually DOT-approved race tires, grippier but with shorter life spans, and we wanted all the cars to be on everyday street tires). Nitrous-oxide injection was prohibited, but competitors could use water injection to cool the intake-charge temperature.

Entrants could bring their own drivers, or they could use our senior test driver, Larry Webster, for piloting duties. Each car would get five runs through the full course. If a driver hit a cone or the car was louder than our 103-dBA limit (measured track-





#### 14th Place/DNF

### 2002 Peter Farrell Supercars IS300 Turbo

Drivability: ★★★

1/4-mile: 13.5 sec @ 112 mph

Road course: 61.1 sec

150-to-0-mph braking: DNF

Total course time: DNF

We can always count on Peter Farrell for something wild, such as last year's three-rotor Mazda RX-7. This year it was a grocery-getting four-door Lexus IS300 blown to the bejeaners with a giant Garrett-based turbo and a massive 14-by-17-inch intercooler capable of chilling charge air to nearly ambient temperatures. The \$15,000 conversion includes beefed-up internals and a clever TEC<sup>3</sup> engine controller that assimilates the Lexus brain, Borg-like. Another slick piece of engineering is a Tein coil-over shock system (\$1900) that allows the front and rear shocks to be tuned independently from the cockpit. One could conceivably store three programs for different areas of a track and toggle among them.

The PFS IS300 Turbo was developed in a matter of weeks to launch a new line of PFS products for the IS300, and its power, ride, and handling were impressive on our drive. A noisy turbo waste gate made an amusing whoo-who-who Three Stooges sound whenever we lifted off the throttle, and the engine controller needed a bit more part-throttle tuning development, but the car shows promise.

Sadly, this frisky four-door was KO'd during the first run of the day when a faulty fuel injector burned out one cylinder and burned a hole in the piston. —Frank Markus

**Vehicle type:** front-engine, rear-wheel-drive, 2-passenger, 4-door sedan

**Price as tested:** \$62,000 (base price: \$40,000)

**Engine type:** turbocharged and intercooled DOHC 24-valve, 3.0-liter, iron block and aluminum head, Toyota with a piggyback electronic TEC<sup>3</sup> engine-control system with port fuel injection

**MODIFICATIONS** Engine and transmission: \$20,000 Suspension: Tein Flex front and rear individually cockpit-adjustable coil-over shocks, custom anti-roll bars, \$1900 Brakes: \$4000 Wheels and tires: \$8000 Body and interior: \$1000

Displacement ..... 180 cu in, 2997cc  
Power (mfr's claim) ..... 200 hp @ 6000 rpm  
Torque (mfr's claim) ..... 210 lb-ft @ 5000 rpm  
Transmission ..... stock Toyota 5-speed manual  
Front brakes ..... 4-piston Brembo 14.0 x 1.2-in vented and cross-drilled discs; Supracore 4-piston calipers  
Rear brakes ..... 4-piston Brembo 12.0 x 0.9-in vented and cross-drilled discs; Supracore 4-piston calipers  
Brake-pad material ..... Hawk metallic-organic  
Wheelbase ..... 94.5 in  
Length ..... 175.9 in  
Curb weight ..... 3207 lb  
Weight distribution, F/R ..... 54.0/46.0%  
\*Base price includes all performance-enhancing options.



Wheelbase ..... 105.1 in  
Length ..... 176.6 in  
Curb weight ..... 3527 lb  
Weight distribution, F/R ..... 53.6/46.4%  
\*Base price includes all performance-enhancing options.

#### 13th Place

### 2001 RENNtech SLK38K

Drivability: ★★★★★

1/4-mile: 13.5 sec @ 110 mph

Road course: 60.0 sec

150-to-0-mph braking: 726.7 feet

Total course time: 116.7

What would you pay to own one of the world's quickest Mercedes SLK roadsters? Judging by this RENNtech-massaged SLK, you could probably get more go for your gold by using a more potent product as a starting point—something as proletarian as a mere Mustang, for example. On the other hand, there's no denying the ambush potential that goes with this Miata-size missile.

The RENNtech SLK upgrade starts with the stock 3.2-liter SOHC 18-valve V-6. When it leaves the shop, displacement has expanded to 3.7 liters, thanks to a 7mm overbore, and the breathing has been enhanced with supercharging and intercooling. It's not as simple as that, of course. The power increase requires some \$34,000 worth of hardware from AMG—the blower, the intercooler, the intake manifold, the crankshaft, the connecting rods, and the pistons, as well as a \$2450 cat-

back exhaust. Transferring power to the stock six-speed manual transmission entails a Sachs twin-plate clutch and single-mass flywheel—another \$3800. From there the thrust travels to a \$4500 limited-slip rear end. As you can see, the cost adds up at an alarming rate, but the heavy-duty hardware is needed to handle the heavy output—440 horsepower and 420 pound-feet of torque. That's a gain of 91 horsepower and 88 pound-feet of torque versus the AMG edition of the SLK.

As you'd expect, there are suspension upgrades to go with the increased punch: higher shock and spring rates, stiffer anti-roll bars, AMG subframe links, and adjustable front-control-arm bushings that allow adjustments to both caster and camber. The brakes are huge—14-inch rotors up front, 12-inch in the rear, with four-piston calipers at both ends. And there's abundant adhesion, with Michelin Pilot Sport tires—235/40ZR front, 265/35ZR rear—on 18-inch forged aluminum wheels.

On the road, this bodacious baby Benz delivers about what you'd expect—it's snake-quick and sure-footed. Aside from an overenthusiastic exhaust note and abrupt clutch engagement, it's tractable on the street. It was also dead reliable on the track, but with a mere 440 horsepower, it couldn't match the performance levels of some of these cars with engines nearly twice as large. But by small-roadster standards, it's a seriously hot ride.

—Tony Swan



**Vehicle type:** front-engine, rear-wheel-drive, 2-passenger, 2-door roadster

**Price as tested:** \$111,937 (base price: \$105,347)

**Engine type:** supercharged and intercooled SOHC 18-valve V-6, aluminum block and heads, Bosch/RENNtech engine-control system with port fuel injection

**MODIFICATIONS** Engine and transmission: \$45,050 Suspension: \$4500 Brakes: \$6690 Wheels and tires: \$4600 Body and interior: \$695

Displacement ..... 227 cu in, 3724cc  
Power (mfr's claim) ..... 440 bhp @ 6400 rpm  
Torque (mfr's claim) ..... 420 lb-ft @ 4000 rpm  
Transmission ..... stock 6-speed manual  
Front brakes ..... RENNtech 14.0 x 1.4-in vented and cross-drilled discs; RENNtech 4-piston calipers  
Rear brakes ..... RENNtech 12.0 x 0.9-in vented and cross-drilled discs; RENNtech 4-piston calipers  
Brake-pad material ..... Hawk metallic-organic  
Wheelbase ..... 94.5 in  
Length ..... 157.9 in  
Curb weight ..... 3207 lb  
Weight distribution, F/R ..... 54.0/46.0%  
\*Base price includes all performance-enhancing options.





**Vehicle type:** front-engine, rear-wheel-drive, 2-passenger, 3-door coupe

**Price as tested:** \$199,232 (base price: \$112,100)

**Engine type:** supercharged pushrod 16-valve V-8, aluminum block and heads, GM/Mallory engine-control system with port fuel injection

**MODIFICATIONS** Engine and transmission: \$65,600 Suspension: \$1975 Brakes: \$10,500 Wheels and tires: \$6750 Body and interior: \$24,180

Displacement ..... 434 cu in, 7113cc  
Power (mfr's claim) ..... 759 hp @ 5600 rpm  
Torque (mfr's claim) ..... 749 lb-ft @ 4700 rpm  
Transmission ..... modified stock 6-speed manual  
Front brakes ..... Brem/Alcon 13.5 x 1.4-in. vented and grooved discs; Brem/Alcon 6-piston calipers  
Rear brakes ..... Brem/Alcon 13.0 x 1.3-in. vented, grooved, and cross-drilled discs; Brem/Alcon 4-piston calipers  
Brake-pad material ..... Performance Friction D1 carbon-metallic

Wheelbase ..... 104.5 in  
Length ..... 179.7 in  
Curb weight ..... 3443 lb  
Weight distribution, F/R ..... 51.0/49.0%  
\*Base price includes all performance-enhancing options.

## 8th Place

### 2003 RENNtech SL55K

Drivability: ★★★★★

1/4-mile: **12.6 sec @ 119 mph**

Road course: **58.0 sec**

150-to-0-mph braking: **702.4 feet**

Total course time: **107.5 sec**

Here's one Benz whose bark is just as bad as its bite, which is saying something, considering the thrust on tap from its supercharged 5.4-liter V-8: 575 horsepower and 600 pound-feet of torque, according to RENNtech boss Hartmut Feyhl. A graduate of AMG, the Mercedes in-house hot-rod shop, Feyhl decided his potent upgrade on the new SL-class roadster needed sound equal to its fury to be taken seriously among this



crop of supercars. It had that and more, its twin exhausts emitting a basso bellow reminiscent of a big-block Corvette with culvert-size straight pipes.

"I think I went a little bit too far," Feyhl admitted. "The customer exhaust systems are much quieter."

Noise, mass (at 4208 pounds, it outweighed the next-heaviest entry by 377 pounds), and automatic transmission notwithstanding, this bulky black-tie missile was swift once static inertia was overcome. It cruised to 100 mph in 9.3 seconds and covered the quarter-mile in 12.6. Both numbers were in the lower third of the pack, but consider this pack's capabilities. Even more impressive, with that curb weight, was the SL's 150-to-0 stopping distance, fifth best overall.

Feyhl's AMG connection is plainly visible in the SL's engine mods. The stroker crank, the rods, the pistons, the ported heads, the intake manifold, the supercharger and intercooler—all came from Germany. Adding in RENNtech's own cams and exhaust system, the tab comes to \$39,000 worth of hardware. Other upgrades



include a limited-slip rear end, a rebuild of the six-speed gearbox to handle the massive torque, and remapping the transmission's control chip to enhance manual control. RENNtech also remaps the Active Body Control computer (firmer responses, reduced ride height) and adds adjustable (camber and caster) front-control-arm bushings. Naturally, there are brake and tire upgrades: massive vented and grooved rotors and four-piston RENNtech calipers all around, with meaty Michelin Pilots on 18-inch forged aluminum wheels. Cosmetic touches include a rear spoiler, a front splitter, fender flares, carbon-fiber interior trim, and a very cool carbon-fiber-trimmed steering wheel.

The SL55K wears a price tag as formidable as its performance, but we'll bet it'll be among the hottest rides in the country club parking lot. Any country club parking lot.

—Tony Swan

**Vehicle type:** front-engine, rear-wheel-drive, 2-passenger, 2-door roadster

**Price as tested:** \$144,325 (base price: \$138,545)

**Engine type:** supercharged and intercooled SOHC 24-valve V-8, aluminum block and heads, Bosch/RENNtech engine-control system with port fuel injection

**MODIFICATIONS** Engine and transmission: \$49,950 Suspension: \$2150 Brakes: \$6890 Wheels and tires: \$5500 Body and interior: \$5780

Displacement ..... 332 cu in, 5439cc  
Power (mfr's claim) ..... 575 bhp @ 6000 rpm  
Torque (mfr's claim) ..... 600 lb-ft @ 3600 rpm  
Transmission ..... modified stock 6-speed automatic  
Front brakes ..... RENNtech 14.0 x 1.4-in. vented and grooved discs; RENNtech 4-piston calipers  
Rear brakes ..... RENNtech 13.0 x 1.0-in. vented and grooved discs; RENNtech 4-piston calipers  
Brake-pad material ..... Hawk carbon-metallic  
Wheelbase ..... 100.8 in  
Length ..... 178.5 in  
Curb weight ..... 4208 lb  
Weight distribution, F/R ..... 51.4/48.6%  
\*Base price includes all performance-enhancing options.

