HOT! HOT! HOT! BMW M5 FIGHTS AUDI S6 AND BENZ E63

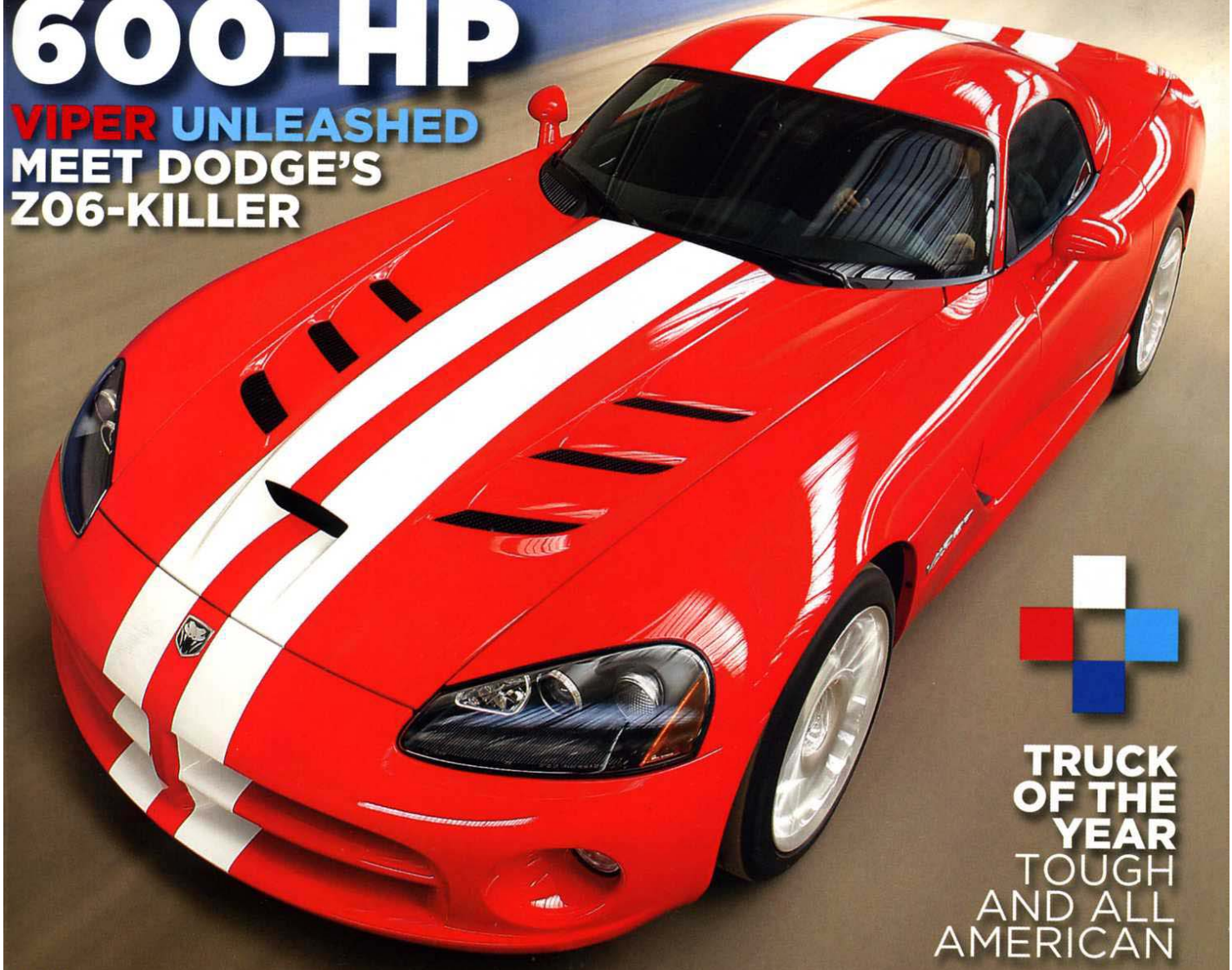
MOTOR TREND

FEBRUARY 2007 ★ ★ ★ ★ ★ MOTORTREND.COM

BITE ME!

600-HP VIPER UNLEASHED

MEET DODGE'S Z06-KILLER



TRUCK OF THE YEAR
TOUGH AND ALL AMERICAN

USA $4.99 CANADA $5.99

02
0 70992 34809 1

THE 2007 POWER LIST
50 PEOPLE WHO COUNT IN THE AUTO BIZ

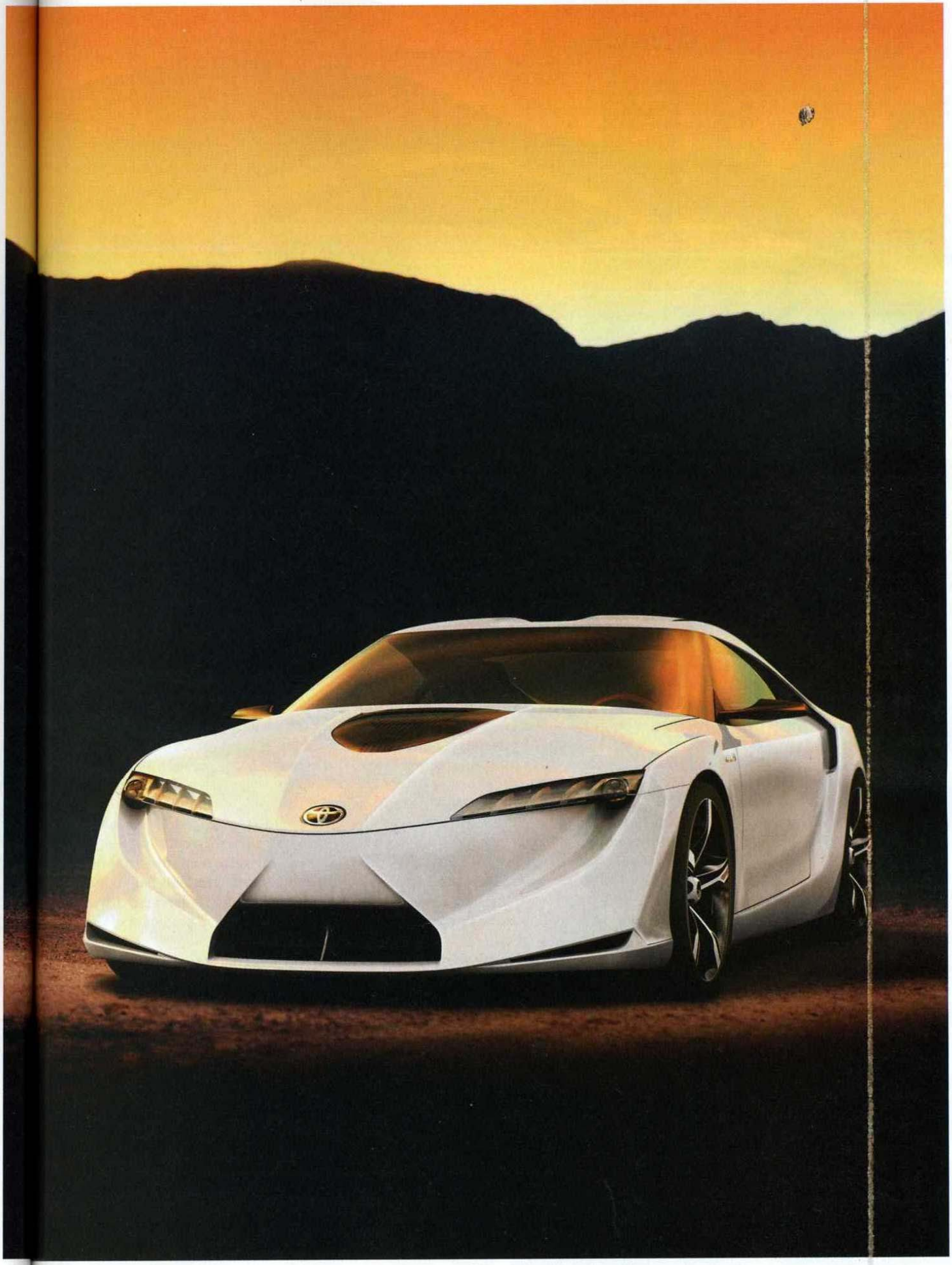
GMC ACADIA FIRST TEST
GM'S HIGH-TECH CROSSOVER: IT'S GOOD!

(first look)
toyota ft-hs

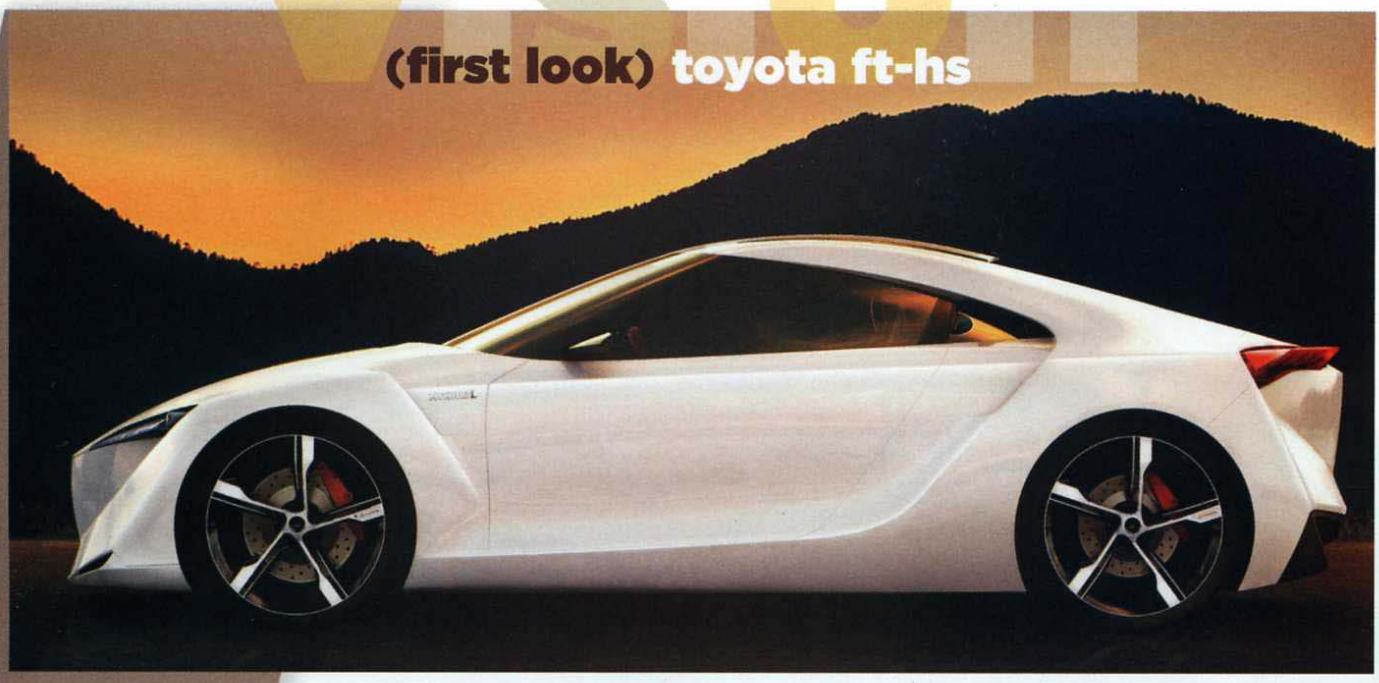
futurevision

HYBRID-CLEVER AND FERRARI-FAST, THIS COULD BE TOYOTA'S LONG-AWAITED SUPRA REPLACEMENT

words **angus mackenzie**



(first look) toyota ft-hs



IT'S HARD to imagine Toyota—rich, powerful, profitable—worrying about anything. In truth, Toyota worries about everything. That's the difference between the company that's about to become the world's number-one automaker and...General Motors. And the wild-looking coupe you see here, the FT-HS Hybrid Sports Concept, is an especially worrisome car for Toyota.

Built as Toyota's Detroit show star, the FT-HS is designed to showcase Toyota's leadership in hybrid powertrain technology. Underhood is a next-generation performance hybrid system built around Toyota's punchy 3.5-liter V-6 and capable of delivering approximately 400 horses. Performance targets include a 0-to-60-mph time in the 4.0-second range. Among the benchmark cars shown by Toyota during the FT-HS presentation were the Ferrari F430, Porsche 911, and Chevy Corvette.

Concept planner Chiharu Tamura says the FT-HS is a vision for a 21st-century sports car: a sports car that's eco-friendly and fun to drive; a sports car as fast as a Ferrari, yet as fuel-efficient as a four-cylinder compact. Were this not a Toyota engineer talking, your hyperbole meter would probably be hitting redline right about now.

The next-gen hybrid system is the key: In this system, braking energy is stored and can be released as what Tamura-*san* calls "explosive power" out of turns. He won't go into detail, but it's likely the system uses a combination of a lightweight lithium battery pack and capacitors. The battery pack provides the longer-term energy storage as used in Toyota's current Hybrid Synergy Drive vehicles, while the capacitors allow split-second discharge of large amounts of energy, perfect for delivering "explosive power." The trick is managing and integrating the various power flows—engine, battery, capacitors—so it feels seamless to the driver.

The FT-HS was styled at Toyota's Calty facility in Irvine, California, a studio best known for more prosaic products such as the Tacoma and Tundra pickups. "This is probably the single project we enter design for—a sports car," says Calty vice president Kevin Hunter.

Hunter cites influences as diverse as Bang & Olufsen sound systems, speed skiers, and Toyota F1 cars; with its combination of organic and sheer surfaces, it looks like a device shaped in a wind tunnel. The sharp edges at the corners of the car are designed to manage airflow, says Hunter, and the full undertray with rear venturis works with the unique combination taillight/rear wing to provide a measure of downforce. At the rear, floating C-pillars direct airflow into vents to cool the hybrid system's battery pack. It's bold. Aggressive. Technical. Pretty? Nope.

Although a coupe, the FT-HS features a novel take on the T-roof: The roof center slides rearward over the rear-hinged backlight, which then folds flat to open the cockpit completely behind the driver and passenger. You get a modicum of wind-in-

Futuristic FT-HS interior is deliberately driver-centric. Drive-by-wire electronics allow for hubless steering wheel with integral paddle shifters, enabling unobstructed view of instruments. Passenger airbag is in pod on cabin cross-brace.

(first look) toyota ft-hs

here's one we made earlier

THE FT-HS isn't Toyota's first foray into the high-performance sports-car arena: The company has dabbled with the genre since 1967, when it launched the gorgeous 2000GT, dubbed "the transistorized E-Type" for its unashamed aping of the iconic Brit.

And while the original Supra started out as little more than a six-cylinder Celica, the two generations from 1986 through 1998 were built on unique platforms and steadily gained power and performance.

But in 1989, as the Japanese bubble economy neared its peak, Toyota revealed its most ambitious sports-car concept to date—the 4500GT. Under the hood was a 300-horse, 4.5-liter V-8 with five valves per cylinder, driving the rear wheels through a six-speed manual transaxle. Toyota claimed a 190-mph top speed. Five were built.

With its vanlike profile and rounded surfaces, the 4500GT looked odd, but it was fast. Colleagues of mine drove the car at Toyota's Higashi-Fuji proving ground, reveling in its big, booming V-8 and excellent high-speed stability. At the time, we thought it was Japan's answer to the Porsche 928.

Toyota followed up with another 4500GT concept in 1991, this time with 320 horsepower under the hood and totally different styling, and in 1993 showed a mid-engine coupe also badged 4500GT. None of these cars came to anything. Don't tease us again, Toyota.

angus mackenzie

FT-HS shape is bold, graphic, but not pretty. Note Nissan GTR-like notched front fenders, floating C-pillar that ducts cooling air to hybrid batteries, and rear light that doubles as a wing.

the-hair motoring without compromising occupant safety or structural rigidity.

Inside is a hubless steering wheel with built-in paddle-shifters (made possible by drive-by-wire technology) and touch-sensitive controls. If you treat this stuff (along with details like the carbon-fiber body panels and carbon-fiber wheels) as pure show-car showbiz, how much of the FT-HS should we take seriously? Quite a lot, as it happens.

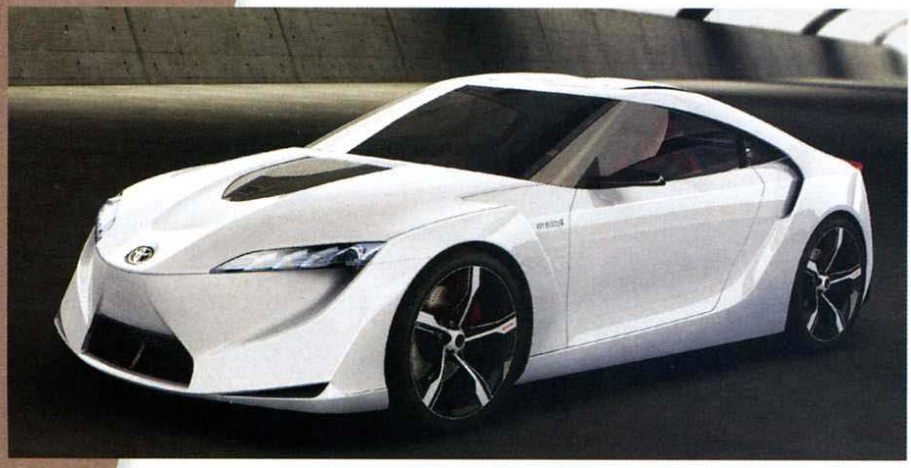
"We don't develop frivolous concept cars," says a Toyota insider. First—and most important—point to remember is the FT-HS has nothing in common with the Lexus LF-A that's been regularly photographed testing at the Nürburgring Nordschliefe. The forthcoming Lexus supercar is built off a unique and expensive platform with a lot of unique and expensive components. It's simply too expensive to build to sell as a Toyota.

The FT-HS is built around a new, production-ready platform (known internally as the N platform, it's actually a flexible component set). The N platform is a front-engine, rear-drive architecture that'll underpin the next-gen Lexus IS and GS sedans as well as the Japan-only Toyota Crown and Mark X models. And the man in charge of the N platform's development? FT-HS concept planner Tamura-*san*, a 30-year Toyota veteran.

A production version of the FT-HS is therefore certainly feasible. But whether the car should be built at all is the subject of huge

toyota ft-hs

Innovative roof design features a central panel that slides back over the rear-hinged backlight which then folds flat to open up cockpit to the rear of driver and passenger.



debate within Toyota. There are those who worry a Toyota like this is precisely the wrong car at the wrong time. They'd rather focus on ensuring the recent spate of embarrassing quality glitches doesn't happen again (Toyota recalled 2.2 million vehicles in the U.S. last year, more than 10 times the number it did in 2003, while recalls have jumped 41-fold in Japan since 2001).

But Toyota's North American executives desperately want the car to plug the gap left by the demise of the twin-turbo Supra in 1998 and to take on Nissan's long-awaited GTR supercoupe, which will make its U.S. debut in 2008. They also worry about collateral damage from Detroit's looming musclecar war and the impact of Hyundai's forthcoming rear-drive BH-platform coupe, which may get a V-8 engine. "We're looking at what we think is a hole in our lineup," says one American Toyota executive. "Toyota needs a halo car."

The old Supra retailed for about $44,000. Nissan is reportedly talking a $55,000 sticker for the all-wheel-drive, twin-turbo GTR (though we'd be surprised if it was much under $70,000), and the big-horse versions of Mustang, Camaro, and Challenger will probably be $50,000-plus. Allow for inflation, technology-creep, and market competition and production versions of the FT-HS would probably retail for $60,000. Right now, Toyota is only talking about a hybrid powertrain for the FT-HS. But if put into production, it may also be offered with conventional V-6 and V-8 engines, both with lower power outputs and at cheaper price points.

Toyota is easily the best-placed automaker in the world right now to make a commercial and critical success of a car like this. So maybe it ought to stop worrying and just do it. And if it wants to worry about something, how about that name? FT-HS sounds more like the secret ingredient in those instant weight-loss pills sold on late-night TV than a name for a muscular 21st-century sports car. Why not call it Supra? ■

what's a capacitor?

THE SHORT answer is that it's a solid-state battery of sorts. Instead of relying on chemical reactions to laboriously move electrons around like batteries do, a capacitor kind of pulls electrons away from one metal plate (the cathode), drags them around a circuit, and gloms them onto another metal plate (the anode). These plates are separated by an insulating material. It takes a bit of time to move the electrons around (charge the capacitor), but as soon as a load is applied, the electrons are in a big hurry to move back to the plate they came from, so you can get a short burst of high-current electricity—perfect for that daring pass or stoplight sprint.

■ **frank markus**