



Akio Toyoda, president of Toyota Motor Corporation, is a die-hard racing fan, even competing under a pseudonym at prestigious races like the ADAC 24 Hours Nürburgring

AUTO



THE LEXUS EVOLUTION

How an automaker known for comfort and luxury became a performance powerhouse

Text by KEITH GORDON

It was a peaceful day in the German countryside in the late summer of 2011, with birds chirping in the trees overhead and only a muted, rumbling whir in the distance. At the Nürburgring, the mecca of automotive testing and development, all was calm. But what began as a distant rumble soon edged closer and turned into the sharp-pitched shriek of a high-revving Formula 1 racecar approaching at speed.

As the thunder finally peaked and the car crested the ridge, streaking toward the final set of turns on the notoriously difficult—and dangerous—race track, it became clear this was no routine run: The car set the record for a production vehicle, clocking in at an astounding seven minutes and 14 seconds. In a twist, this wasn't a Formula 1 car, or a specialized Ferrari stripped down for track days. Instead, it was a Lexus LFA, the crowning glory for the design team, which had set out to reshape what people thought of when they heard the brand's name.

Performance of this kind is not what most observers would expect from a Lexus, a company known for luxury, comfort, and reliability, if not necessarily excitement. Automotive journalist and *Top Gear* host Jeremy Clarkson once described the experience behind the wheel of a Lexus as similar to "sitting in a bucket of warm wallpaper paste, reading a Jane Austen novel."

Brian Bolain, Lexus' general manager of product and consumer marketing, who was with Lexus at its conception and rejoined the company again in 2005, doesn't dispute this appraisal. "Lexus, for years, has been known for being very strong in customer experience, luxury, dependability, and value," Bolain says. But giant changes are under way. "As time has passed, it feels like in order to be 'tier-one luxury' in automotive, performance is now among the costs of entry. In the early years, there was no performance angle that



they were leaning on. Now, all that has changed. I would say now we recognize that one of the boxes we have to check, something at which we have to demonstrate skill, is performance."

In the mid-1980s, the Toyota Motor Corporation struggled to push into the elevated range of luxury vehicles. And while the Toyota name had become a global catchword for economy, toughness, and reliability, it couldn't catch the attention of the affluent luxury buyers the company needed for these new luxury models. While the early attempts from Lexus, the ES 250 and the LS 400, were critically well-received, performance was practically nonexistent and Lexus began earning a reputation as a comfortable car in which to ride but a boring car to drive.

This reputation, and the company's priorities, which had always eschewed performance for comfort and luxury, stuck for a decade and a half. The cars were heavy and lacked agility, leading to chronic understeer and a clear gap in performance between Lexus and its German counterparts.

Then came Akio Toyoda, the son of Shoichiro Toyoda and grandson of Toyota founder Kiichiro Toyoda (both were company presidents), who took control of Toyota in the new millennium and quickly began stamping his mark across the brand.

Toyoda is a speed freak—a racing enthusiast with high octane pumping through his veins. Even in his 60s, he's raced (under a pseudonym, Morizo) in some of the most challenging auto events in the world, like the ADAC 24 Hours Nürburgring, and has taken a hands-on approach to shaping the present and future of the luxury division of his family's empire. Now Toyota's president, Toyoda has also insisted on taking on additional roles at Lexus, namely those of chief branding officer and, most important, chief master driver.

i Sato-san: Q&A with the LC 500's Chief Engineer

Few people deserve more credit for the LC 500's success than its chief engineer, Koji Sato. Appointed by Akio Toyoda to oversee the project, Sato (respectfully known as Sato-san by his colleagues) managed to perform seemingly impossible tasks: He increased performance without sacrificing comfort, and created both a grand tourer and a supercar in a single design. The automotive magician explains how he achieved these contrary goals and helped usher the brand into a new era.

What are you and your team most proud of when it comes to the LC 500?

The incredible driving dynamics. The LC 500 provides sharper and more direct handling without compromising the ride comfort and elegance that have defined Lexus.

How do you get agility and handling out of a car that isn't especially light?

That's the result of pursuing the inertia moment [a scientific calculation of the exact torque needed for desired acceleration], creating a lower center of gravity, and making the central

gravity point of the whole vehicle as close to the hip point of the driver as possible. This is due to the GA-L platform, which is one of our most important platform achievements.

Was it challenging to get two different ride types, luxury and performance, out of the same car?

Very challenging. But actually, it's not just integrating two different rides in a single vehicle, but also incorporating a third element, the distinctive design and proportion of the car. We could never have fit all three of these elements into the LC 500 if we didn't use the brand-new GA-L platform and chassis.

How does the LC 500 continue the legacy of the LFA? Is it a direct descendant?

What we learned about carbon fiber technology on the LFA has been applied to the LC. An example is the weight reduction obtained by developing the world's first hybrid door. By adopting carbon fiber for the inner panel and aluminum for the outer panel, we were able to

reduce the weight of each door by 51 pounds.

What does the LC 500 mean for the future of Lexus?

The LC shows the beginning of the next chapter for the Lexus brand in terms of both driving dynamics and design. The countless Lexus series that follow after the LC will inherit this DNA of Lexus' future, which the LC has helped create.



PREVIOUS SPREAD, FROM LEFT: TOMOHIRO OHSUMI/BLOOMBERG VIA GETTY IMAGES; COURTESY OF LEXUS. THIS SPREAD: ALL IMAGES COURTESY OF LEXUS



Toyoda's arrival was timed to perfection. Unknown to much of the company, a small team of performance-crazed engineers had started a side project that would eventually become the LFA concept. A vehicle capable of competing against the global elite of supercar manufacturing, the LFA was a dream at best, a waste of resources at worst. At least until Mr. Toyoda, who at the time sat on Toyota's board of directors, put his weight behind the project. He believed that in order to change public opinion—and the company's very own DNA—a radical and bold project was necessary, and the LFA was the perfect opportunity.

The LFA showed the world what the design and engineering teams at Lexus could achieve. The car was so advanced compared to the rest of Lexus' offerings that not much of the LFA's cutting-edge technology could be directly transferred to the automaker's more affordable models. Yet with the release of the F and F Sport lines, it's clear that the LFA inspired other Lexus vehicles to raise their performance and injected a level of excitement

Lexus' signature spindle grille is shared across the model line, including on the new LS 500, and influences the shapes and lines found throughout the rest of the car.



throughout the brand. "The LFA was a real pivot point for the Lexus brand," Bolain says. "Because it wasn't just the ways we started thinking about ourselves, but it really was the way that others on the outside started thinking about Lexus' capability. It gave people permission to think about Lexus and speak about

Lexus in a different way."

With the expansive introduction of the F category of vehicles, Lexus has achieved a new balance between the luxury that buyers demand—a foundational element of the brand—and the performance they want, and that can be found throughout the F model cars. Luckily, at this crucial moment, the company is releasing two new flagships—the LS 500 and LC 500—that will help define Lexus going forward and provide the purest examples of the new balance the brand is cultivating.

"The LS is the flagship of the Lexus brand," explains LS chief designer Koichi Suga. "More than any other model, it embodies the history and image



i Toyota 2000GT

The LFA and LC 500 are designed to change perceptions of an already famous brand. There's a historical parallel: Back in the 1960s, Lexus' parent company, Toyota, was also struggling to change global impressions of its brand. In 1965 the automaker and its production partner Yamaha introduced the 2000GT, a two-door fastback sports coupe that was a critical success and helped change the image of Japanese automakers. It could be fitted with a 2.0-liter Yamaha-designed engine that produced 150 horsepower. But the car's design was the real game changer. The 2000GT featured aluminum bodywork and a shape inspired by one of history's most beautiful cars, the Jaguar E-Type. Only 351 regular production units were produced, similar to the Italian sports cars of the age, and surviving 2000GTs are rare. Rare enough that in recent years, well-kept examples have been auctioned for seven figures.



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of Lexus and serves as a symbol for everything the brand stands for.” The LS 500 is the fifth generation of the original Lexus luxury sedan, and the first since the original, back in 1989, to be completely rebuilt from the ground up. It begins with the all-new GA-L platform, the company’s best and stiffest chassis to date, and continues with a recently developed, 3.5-liter V-6 engine built specifically for the LS, complete with two turbochargers and with an output of 416 horsepower.

But the LS is truly enhanced through a focus on the concept of *takumi*, the Japanese ideal of craftsmanship. According to Bolain: “The most skilled people that work in our factories or design offices are called takumi (artisans). Takumi simply means you are a master at whatever it is that

you do. It takes something like 60,000 hours of experience in your field to become known as a takumi within the Toyota/Lexus culture. It turns out we even have takumi drivers.”

This level of craftsmanship can be seen within the interior. A three-dimensional pleated pattern of fabric, inspired by origami, lines the doors. Special glass with delicate patterns carved into it, called kiriko cut, highlights the door handles, while takumi woodworkers slice and veneer real wood herringbone designs into exquisite mosaics. If the LS’s exterior—with its speedback rear section, elongated wheelbase, and coupe-esque shape—convey aggressiveness, the car’s interior is meant to remind riders that Lexus is still a luxury brand first.

“THE LFA GAVE PEOPLE PERMISSION TO THINK ABOUT LEXUS IN A DIFFERENT WAY.”





While the LS affirms Lexus' luxury bona fides, it's the LC 500 that will likely serve as the true example of the new Lexus. The sports coupe achieves a harmony of performance and comfort, serving as a symbol of the balance being cultivated across the Lexus brand and its model range. With a price starting at \$92,000, it's not cheap, but it is affordable compared to its competition. Indeed, the LC 500 competes with supercars that cost well into the six figures. For example, the Japanese coupe recently held its own in performance testing against a 2017 Aston Martin DB11, which costs more than twice as much. But the genius of the LC 500 is that for that price, you actually get what amounts to two cars—or at least, a car with multiple personalities.

The Janus of vehicles, the LC 500 has two faces. The first is the calm, tranquil facade of a traditional Lexus—smooth over bumps, posh and



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The LF-LC Hybrid concept's aggressive lines and design features were largely retained by the production version



luxurious within the cabin, and with a reliability uncommon among other sports cars. The other face is like the devils, pushing drivers to the edge of their limits as they shift the variable driving modes into Sport S or Sport S+ and flick the left paddle-shifter to drop a gear and spike the tachometer. The engine flexes its muscles, the suspension stiffens, and the acceleration reaches whiplash-inducing levels in the straights while the chassis provides those vicious lateral Gs in the corners. Drive the LC 500 long enough and you'll likely find a middle ground that best suits your driving style, but it's wonderful to know that each morning you can jump into an über-luxury sedan or a

high-performance supercar, all within your one-car garage.

This is a fascinating moment at Lexus, which is discovering whether it can alter its own DNA and change course without abandoning what led it to success in the first place. Much of the outcome will hinge on the LS 500 and LC 500. Bolain is proud and markedly excited about what is happening at the Japanese automaker. "It's the first time in the history of the brand that we've had two brand-new flagships at the same time," he says. "It makes it feel like Lexus is on a path, that it has some direction, that there's a vision for Lexus, undeniably, and these two cars together really spell it out."

Proof of Concept

One of the common sources of friction between automakers and their fans is concept cars. These often eye-popping vehicles are equal parts achievements in design, feats of engineering, and the thrill of imagination. But they typically never develop beyond the prototype stage. The rare few that progress from concept to production model usually emerge unrecognizable as the bold and ingenious creations they were at the outset. This is what makes Lexus so special. Not only did the company move two incredibly well-received concepts to production, but the real-world cars that emerged looked like their inspirations and performed beyond expectations.



LFA Concept to LFA

The LFA started back in 2000 when a group of passionate Lexus engineers began designing a supercar. After handcrafting a prototype, it took the engineers another two years to fire up the first engine, a 4.8-liter V-10, and a further two years before they could perform their first tests at the Nürburgring. In 2005 the car made its first public appearance at the North American International Auto Show in Detroit, where it received rave reviews, despite skepticism that it would ever become a production model. Fortunately, Akio Toyoda, the performance-obsessed, newly installed executive VP for Toyota's board of directors, offered his team the full backing of the company.

This support was tested when the team decided to scrap the original aluminum chassis and replace it with one sculpted from exotic carbon fiber. Three more years of struggles plagued development, but in 2008 the team was able to race a version of the LFA at the 24 Hours Nürburgring, and the following year the company announced that the LFA would indeed enter production. The year 2010 proved seminal for the project, as the racing prototype won its class at 24 Hours Nürburgring in May and the first production LFA, shockingly similar to the original concept car, rolled out of the factory in December.

Less than a year later, a Nürburgring limited-edition LFA set a record at its namesake track, confirming that the Lexus team had created a truly world-class supercar. By the time the last of the 500 LFAs were produced in late 2012, the project had taken more than a decade. But it was well worth the wait.



LF-LC Concept to LC 500

Around the same time Lexus was crafting the last of the 500 LFAs, the company debuted something special at the 2012 North American International Auto Show in Detroit. The LF-LC was a sports coupe concept, but a traditional one, conceived without any intention to develop it further. It lacked the watered-down components that, for many concepts, can hint at a potential future production version. The LF-LC was over-the-top and extreme—in design, in engineering, and certainly in performance. It seemed an unlikely candidate for a production car.

But four years later, Lexus did it again. The car returned to Detroit, this time as the LC 500. It had retained many of the boldest and most eye-catching aspects of the LF-LC, including the dramatic body shape, aggressive interior styling, and a powertrain worthy of its older brother, the LFA.

Crafted with help from Yamaha, the 5-liter naturally aspirated V-8 is a marvel, as potent at low rpms as it is at the top of its range. When the engine nears its 7,300 rpm redline, the exhaust sound resembles that of a Formula 1 racecar, due in part to a variable Active Exhaust system, and the 10-speed transmission allows the LC 500 to go from zero to 60 mph in under 4.5 seconds. While the engineers cut weight wherever possible using advanced materials, the car still weighs more than two tons, not ideal for an agile sports car. So the Lexus team used an "inertia spec" formula to move as much of the mass as possible to the midsection and bottom to improve the car's center of gravity and place it close to the driver's hip, maximizing the experience behind the wheel.



The LC 500 is built for speed, with an underbody that is almost completely smooth and an active rear spoiler, producing the immense downforce and grip needed to maintain stability at high speed