

Edited by Kevin Jost

L.A. fights the good fight

While the organizers of the Los Angeles Auto Show are fighting the good fight in their attempt to unseat Detroit's North American International Auto Show (NAIAS) as the North American industry's premier event, the Motor City still displays considerably more clout in luring automakers to unveil cream-of-the-crop concept and production vehicles. Offerings from the automakers in L.A. weren't necessarily humdrum, but world debuts—especially when it came to concepts—were in short supply. With only 14 world premieres (there were 21 last year), the Frankfurt and Tokyo motor shows were quickly cited for stealing L.A.'s thunder. But plainly speaking, it may just be the case that L.A. is, and may always be, a more customer-oriented (vs. industry) show.

However, show organizers' efforts to provide a higher profile have not been in vain. L.A. is quickly becoming a forum for automakers to showcase their alternative-fuel vehicles and to discuss the importance of environmental sustainability in the industry. It's also become a soapbox of sorts for those same automakers to express their thoughts regarding the importance of mindful automotive legislation in Washington. Much like **General Motors'** Rick Wagoner did last year, Alan Mulally—**Ford's** President and Chief Executive Officer—used his keynote address as a platform to tout his company's dedication to improving fuel economy and reducing emissions.

"Ford is committed

to offering customers affordable, environmentally friendly technologies in vehicles they really want," Mulally said. "We are focusing on sustainable technology solutions that can be used not for hundreds or thousands of cars—but for millions of cars, because that is how Ford can truly make a difference."

So, with that said, let's talk concepts.

Volkswagen—Boasting a squat stance, four roof windows, and ridiculously short front and rear overhangs, the space up! blue concept is the third variant to be released in Volkswagen's new small family of concept cars. The first two—the up! and the space up!—were unveiled at Frankfurt and Tokyo, respectively.

"While we were designing the space up! blue," said Klaus Bischoff, Director of Volkswagen Design, "the Samba Bus was a great [inspiration]. In the U.S. this all-time favorite is seen as a symbol [of] freedom and it represents a part of Volkswagen's identity. What gave the [Samba] its characteristic look are, of course, the windows in the roof area, the flat and flush surfaces, and its distinct graphics. You could say that this study pays homage to the Volkswagen drivers in the U.S."

The concept's advanced powertrain, however, is a far cry from the Samba's 1950s technology. A rear-mounted electric "engine" powers the vehicle with an output of 45 kW, turning up to 10,000 times per minute, and generating a maximum torque of up to 120 N·m (89 lb·ft). With its zero-emissions powertrain—a high-temperature fuel cell (HT-FC) combined with lithium-ion batteries, the concept can reach a top speed of 75 mph (120 km/h) and do 0 to 60 mph (0 to 97 km/h) in 13.7 s. Not the type of numbers that'll wow the speed freaks on the Salt Flats in Utah, but respectable given the vehicle's potential real-world applications.

VW's HT-FC system uses hydrogen—stored in two tanks in the underbody—to obtain electrical energy from the rear-mount engine. If the battery is fully charged and both hydrogen tanks are full,

A hydrogen fuel cell, like the one used in the space up! blue concept, may play a pivotal role in Volkswagen's future small-car lineup.



Matthew Newton



Matthew Newton

The Hyundai Concept Genesis Coupe foreshadows the company's second rear-wheel-drive performance vehicle after the sedan.

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Matthew Newton

According to Audi, the Cross Cabriolet quattro gives its driver the best of both worlds—the freedom and elegance of a convertible blended with the spaciousness and versatility of an SUV.

Beachgoers and surf aficionados will enjoy the ride to the beach just as much as the beach itself, says Suzuki of its Makai concept.



the space up! blue can theoretically travel a range of 220 mi (355 km). By using its HT-FC system, VW has avoided the inherent flaws of low-temperature fuel cells—namely temperature variation issues and space constraints.

Hyundai—Though the competition among concepts wasn't exactly fierce, the Hyundai Concept Genesis Coupe, an all-new rear-wheel-drive sports coupe slotted to debut in the company's spring 2009 lineup, garnered considerable attention on the show floor in L.A. Dressed in Sonic Orange and trimmed with a black carbon-fiber hood, roof, and ground effects for weight reduction, the design of the coupe's exterior was intended to drop jaws.

"The mission for the Concept Genesis Coupe was to create a pure performance car with a design that would capture the imagination of hardcore automotive enthusiasts," said Joel Piaskowski, Chief Designer at Hyundai Design Center in Irvine, CA. "With its aggressive look from just about every angle, I think we have been able to do that."

Beefing up the 3.8-L V6 engine from the Concept Genesis Sedan, which debuted in April of last year at the New York Auto Show, engineers have tuned it to produce over 300 hp (224 kW) with more than 250 lb-ft (339 N·m) of torque. The engine also features aluminum cylinder heads, a high-pressure die cast aluminum block, continuous variable valve timing, and dual overhead cams wedded to a six-speed manual transmission. Hyundai's looking to pit the coupe—performance-wise—against the Infiniti G37, but with a more reasonable price tag, somewhere near the \$20,000 mark.

Audi—Amidst the company's usual auto-show theatrics—this year a television-style Q&A session emceed by *The Today Show's* Peter Greenberg—Audi unveiled its Cross Cabriolet quattro concept, a vehicle which, according to the press release, introduces an all-new vehicle segment. That vehicle segment being, yes, you guessed it, the convertible SUV. And just as Hyundai hued its showstopper in a signature swatch of orange (it's very, how you say, "Californian"), Audi did the same, only opting for an earthier, more Pottery Barn-inspired name: Copper Sunset.

The Cross Cabriolet is a two-door, four-seater with a convertible fabric top that—according to Audi's calculations—collapses behind the rear seats in "a spectacularly brief 17 seconds." The car also has no B-pillar or rollover bar, which designers believe "allows for a better view of the heavens." Outfitted with a longitudinally mounted 3.0-L TDI turbodiesel engine that delivers 240 hp (179 kW) and 500 N·m (369 lb-ft), the Crossover Cabriolet averages 7.3 L/100 km. The engine is also equipped with what Audi's calling, "the most elaborate emissions-reduction system developed for a production engine." (See related engine feature in this issue.)

When Greenberg posed Audi Chairman Rupert Stadler with the question of whether he believes Americans will buy diesels, Stadler responded by saying, "We are keen to make [diesels] successful [here]. Customers will eventually recognize the performance and technology of diesel engines."

While this may or may not be true, what Audi might want to consider is, will anybody actually buy a convertible SUV? If the grumbling among journalists (more grumbling than normal that is) shuffling between press conferences was any indication, the forecast is somewhat uncertain.

Suzuki—While most automakers relied on the help of minor celebrities, dramatic music sequences, or female models to bolster their press conferences, Suzuki kept it simple—they opted out. Some might say that's because the concept they showed—the Suzuki Makai—was just a retooled SX4 Sport. But in reality, it was one of the more conscious efforts by an automaker to capture, in concept-car form, the spirit of Southern California. And it was wisely positioned on the show floor in L.A. just as the 2008 SX4 Sport production vehicles were arriving on dealer lots across the country. Not a bad idea considering L.A. is still predominantly viewed as a customers' show, though show organizers are desperately trying to change that perception.

Anyway, the Makai is part of the Suzuki LIVE Series, what the company dubs its "line of brand-dedicated concept vehicles specially designed for life enthusiasts, adventurers, and thrill-seekers." And while now, instead of focusing on the Makai, you're wondering what the hell a "life-enthusiast" is, the point of this concept is still pretty clear—it's fun.

Sporty and devoutly topless (yep, there's no roof), the Makai is outfitted with 19-in CEC wheels, Michelin Pilot sport tires, and four-wheel disc brakes with drilled and slotted rotors and Rotora calipers. The car also features a custom body kit, styled exhaust, and LED taillights and running lamps. The four ventilated, suspended seats look like you could pull them out and plop them in the sand. And, in case the photo didn't tip you off, it's orange (again). But not just any flavor, this one's called Sunset Orange, and it's pretty, um, bright.

Rounding out the concept are its fun accessories: a shaved windscreen and targa rear hoop and a custom surfboard mounting rack with matching surfboards. While the term "gimmicky" may come to mind here, if you've ever driven an SX4 Sport—which is surprising to say the least—this gimmick makes sense.

Matt Newton

Bibendum Logan offers low-cost clean solutions

While vehicle performance figures that outdo product rivals continue to be essential for market success, there is now a definite shift to a new set of credentials: low levels of CO₂ per km. An example of that was the rivalry between manufacturers who took part in the annual **Michelin**-organized Bibendum Challenge green vehicle event, held in mid-Novem-

ber in Shanghai. But what is particularly important is the ability of low-price, practical, and roomy compact cars to achieve good results without sacrificing driveability and performance.

To demonstrate the capability of budget-level cars to meet the challenge and achieve high efficiency, the Logan

Renault eco² concept covered a 172.2-km test route in China on 4.69 L of diesel fuel for an average consumption of 2.72 L/100 km, complemented by CO₂ emissions of 71 g/km. (Depending on the country of sale, Logan is commercialized under the **Dacia** and Renault brands.)

During the official NEDC combined cycle homologation tests for the vehicle, it achieved 97 g/km, which equated to 3.8 L/100 km. This result was improved over the route of the Challenge Bibendum thanks to the driver's use of

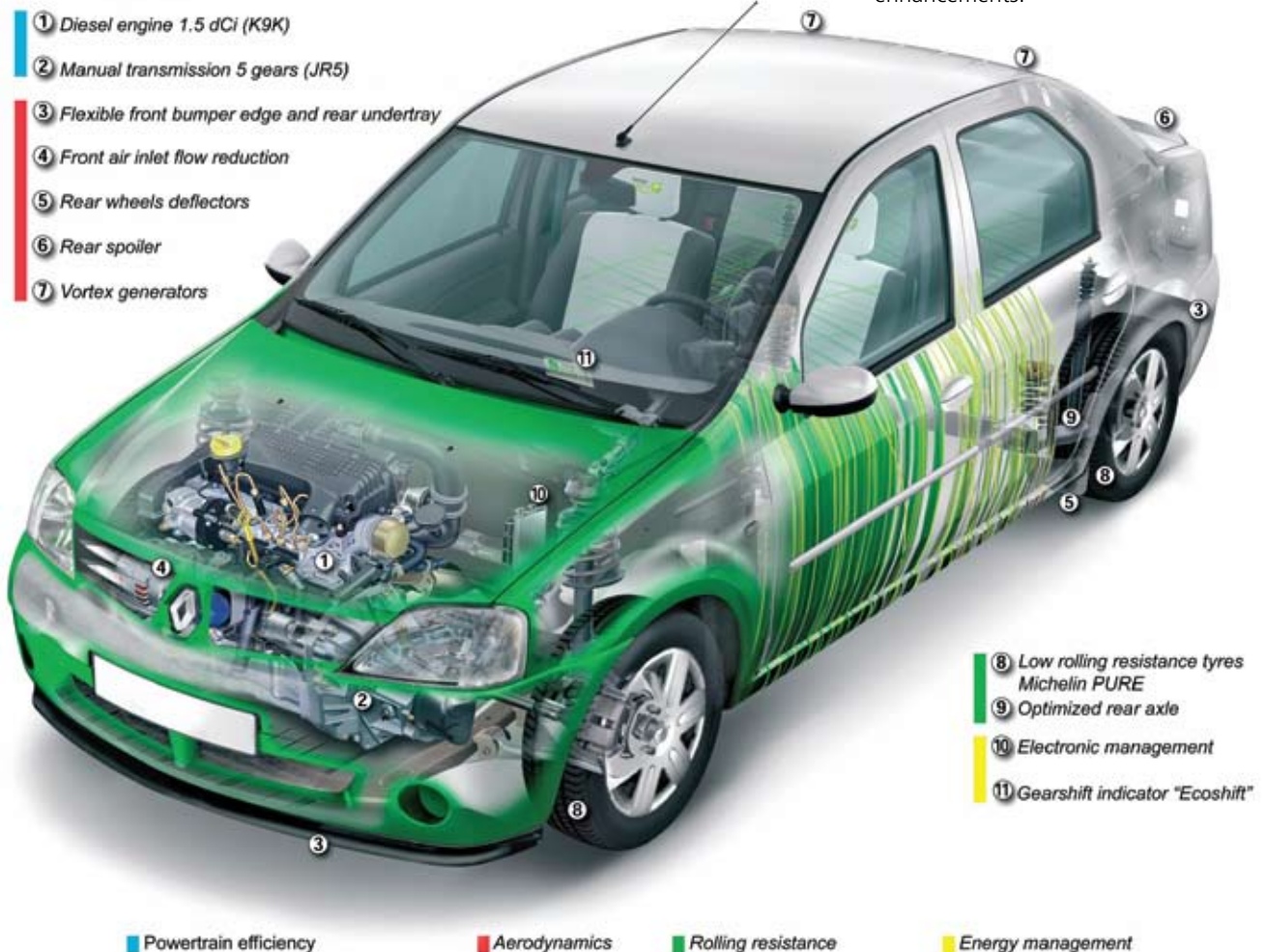
the car's gearshift indicator, highlighting the importance of "eco driving" aids, according to Logan. After the event, a classification of competing vehicles was drawn up based on the following criteria: acceleration test, slalom test, noise emissions, and "regularity run." The Logan Renault came second behind an **Audi A5 TDI**.

Powered by a 1.5-L dCi diesel engine producing 63 kW (84 hp), the five-seat Logan concept successfully demonstrated that it was possible to "combine ecology and economy without detracting from performance" and do so via an affordable vehicle, stated the company.

Mechanical changes to the concept compared to the production model on which it was based include a modified fuel-injection system, low-rolling-resistance Michelin tires, and aerodynamic enhancements.



The Logan Renault eco² concept at Michelin's Challenge Bibendum showed what a low-cost car could achieve in terms of low CO₂ emissions.



Efficiency improvements enabled the Logan Renault eco² concept to cover a 172.2-km test route in China on 4.69 L of diesel fuel for an average consumption of 2.72 L/100 km and CO₂ emissions of 71 g/km.

But the car's eco credentials—it can burn B30 biofuel—are wider than just for its operation. It is built at Logan's Pitesti plant in Romania, which meets a broad band of environmental criteria and is ISO 14001-certified. Some 95% by weight of the concept is recyclable.

Renault says its eco² symbol illustrates the brand's commitment to offering a lineup of ecological, economical vehicles that show measurable environmental benefits throughout their life cycles, as well as new technologies at prices that most customers can afford. To qualify for the symbol, vehicles must emit less than 140 g of CO₂ per km or run on biofuel; be manufactured in an ISO 14001-certified factory; be 95% end-of-life reusable; and at least 5% of the plastics used in the vehicle's production must be sourced from recycling. The concept contains 8.3% of recycled plastics and is 95% reusable by weight.

To get below the 100-g/km figure, the concept incorporates a raft of technical enhancements and innovations, all of which have been developed for potential incorporation in future Renault models. Its engine is based on the 1.5 dCi engine launched at the end of 2007 and homologated at 120 g CO₂/km. But the concept's final drive ratio has been raised 8% to reduce fuel consumption while ensuring a level of mid-range acceleration that is suitable for ordinary use. These

enhancements gave the concept a CO₂ saving of 4 g/km, reported Renault.

The injection system has also been recalibrated with seven-hole nozzles (instead of five, as is the case with production models) and wider piston bowls for enhanced fuel spray and combustion. This modification produced a further saving of 5 g/km of CO₂. Finally, by optimizing the balance between certain moving parts and using low-viscosity lubricants (5W-20 plus additives instead of the standard 5W-30), internal engine friction has been reduced. The gear oil is also less viscous. This work helped cut CO₂ emissions by a further 2 g/km. Overall, powertrain adjustments led to a total CO₂ emissions reduction of 11 g/km.

Aerodynamics always play a crucial part in supporting purely mechanical changes aimed at enhancing efficiency. Compared to the standard car on which the concept is based, Logan Renault identified six aspects that together produced significant aerodynamic gains. A flexible splitter under the front bumper reduces underbody turbulence and is combined with a spare-wheel fairing to optimize airflow under the car. The front air intakes were modified to reduce the drag caused by air-cooling airflow. Wheel fairings were fitted to reduce lateral turbulence. A rear lip spoiler was integrated to reduce the vehicle's overall drag performance. Roof-mounted vortex generators

(a particularly effective solution on three-box cars) were introduced. The car's ride height was lowered a few millimeters.

Altogether, the drag coefficient was cut by some 20%, from 0.36 for the production Logan to 0.29, a score that makes Logan Renault eco² concept one of the most aerodynamically efficient three-box saloons, claims the company. This gave a CO₂ gain of 5 g/km. Running-gear changes included the use of Michelin Energy Saver 185/65R-15 low-rolling-resistance tires, which brought a CO₂ reduction of 2 g/km (NEDC cycle), and low-friction rear bearings cut emissions by 1 g/km—for a total running-gear reduction of 3 g/km.

Other contributors to efficiency include an active control alternator that ensures the battery is charged only as required (to 12.8 instead of 13.5 V).

The sum of all the work that went into the Logan Renault eco² concept resulted in extra-urban NEDC driving cycle/UTAC-homologated fuel consumption of just 3.4 L/100 km, equivalent to CO₂ emissions of 88 g/km.

Since driving style can play a significant role when it comes to curbing fuel consumption and CO₂ emissions, the dashboard of the Renault Logan eco² concept features a gearshift indicator that enables drivers to contribute to the optimization of fuel consumption.

Stuart Birch

Maserati GT inspired by 2005 Birdcage concept

Maserati has long held a special place within the rarefied, discerning market sector world of high-performance premium brands. Its racing history and its ability to consistently create cars that are distinctive in design and technology have

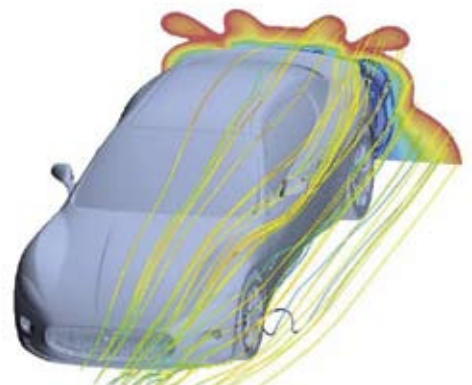
given it a place within a very small niche. Maserati's latest model, the four-seat GranTurismo (GT) now entering production, continues that position.

Powered by a wet-sump 4.2-L V8 gasoline engine derived from the power unit

of the company's Quattroporte sedan, its performance figures include a top speed of 285 km/h (177 mph) and a 0-100 km/h (0-62 mph) time of 5.2 s. Maximum power of 298 kW (400 hp) is delivered at



Prominent fenders and a deep, distinctive front grille distinguish Maserati's new GT.



Aerodynamics paralleled aesthetics in importance in the design of the new Maserati GT.

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Sophisticated electronics complement the hardware elements of the Maserati GT's suspension.



Maserati GT's wet-sump 4.2-L engine produces 298 kW (400 hp).



A mix of luxury and sporty design was the goal for the four-seat Maserati GT interior.

7100 rpm, with peak torque of 460 N·m (339 lb-ft) available at 4750 rpm. Combined fuel consumption is 14.3 L/100 km, and CO₂ emissions 330 g/km. The 180-kg (397-lb) engine drives through a six-speed ZF 6HP26 automatic transmission with steering-wheel-paddle and central-console-selector operated manual shift mode. Kick-down operates in auto or manual, and the engine can be taken to a maximum 7200 rpm for full-throttle upshifts.

With the engine set back just aft of the front axle, weight distribution is 49% front/51% rear. Chassis electronics include MSP (Maserati Stability Program). The GT is based on the M139 platform of the Quattroporte but with the wheelbase shortened by 125 mm (4.9 in) to 2942 mm (115.8 in), and with rear overhang reduced by 66 mm (2.6 in) to give an overall length of 4881 mm (192.2 in). Suspension is by double wishbones front and rear, and aluminum gas dampers

working with Skyhook automatic continuous damping control are optional.

A driver-operated Sport mode provides enhanced throttle response, raises gear-shift points, and tightens the Skyhook system. The car uses **Brembo** four-pot, cross-drilled disc brakes, 330 x 32 mm (13.0 x 1.3 in) in front and 330 x 28 mm (13.0 x 1.1 in) at the rear. Standard wheels are 19-in, with 20-in an option.

The car's curb weight at 1880 kg (4145 lb) is heavier than that of two of its main competitors, the **BMW** 650Ci at 1715 kg (3780 lb) and **Jaguar** XKR at 1655 kg (3650 lb), but 40 kg (88 lb) less than the **Mercedes-Benz** CL500.

Styled by **Pininfarina**, the GT's aesthetics are related to the Birdcage concept seen at the 2005 Geneva Motor Show. The car has very prominent front fenders and an aggressive front grille that Andrea Pininfarina said recalls those of historic Maserati sports cars; its rear quarters are also prominent. At the rear are LED lights and four exhaust tailpipes. Cd is 0.33. The body is mostly steel, but the hood and the front bumper reinforcement member are of aluminum, while the trunk lid uses SMC (sheet molding compound).

The car's interior is the typical Maserati specialization of mixing luxury and sports car design, and it has been designed to accommodate four adults with relatively easy access to the rear seats, where leg-room spans 130 to 340 mm (5.1 to 13.4 in). Rear-seat headroom is 910 mm (35.8 in) and front 991 mm (39.0 in). The trunk has a 260-L (9.2-ft³) capacity.

A wide range of "personalization items" is listed for the car, including brake calipers in various colors.

Stuart Birch

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