

Cadillac ELR’s Paddle Shifters Tech Regenerate Energy

Paddle shifters take on new meaning in the Cadillac ELR, the brand’s first electric vehicle with extended range capability that goes on sale in early 2014.

Unlike traditional performance vehicles where the steering-wheel-mounted paddles allow drivers to upshift and downshift the mechanical transmission, Cadillac ELR’s paddle shifters enable the driver to temporarily regenerate energy and store it as electricity in the battery pack for later use.

ELR’s Regen on Demand feature is unique to the compact luxury coupe.

“Regen on Demand enables ELR drivers to actively recapture energy when slowing down, such as when approaching slower traffic or setting up for a tight turn,” said Chris Thomason, ELR chief engineer. “This allows the driver to take a more active role in the electric vehicle driving experience.”

To engage Regen on Demand, the driver simply takes his or her

foot off the accelerator and pulls back on either the left or right steering-wheel paddle to begin regenerating electricity.

When engaged, Regen on Demand provides vehicle deceleration that is more than what a typical vehicle experiences while coasting, providing control and dynamic performance characteristics similar to downshifting in a manual-transmission vehicle. The feature does not bring the vehicle to a full stop.

Releasing the paddle disengages Regen on Demand, allowing the vehicle to coast normally. The driver can engage and disengage Regen on Demand as desired and as traffic conditions allow.

“Pulling back on the paddle to slow down allows the ELR driver to keep (his or her) foot close to the throttle, ready to accelerate,” Thomason said. “It provides a more engaged, satisfying driving experience, and when you consider the added benefit of recapturing energy, it’s also a smart

thing to do.”

During regenerative braking, the system converts the vehicle’s momentum to electrical power and stores the energy in the T-shaped battery pack located along the centerline of the vehicle, between the front and rear wheels for optimal weight distribution.

The pack supplies energy to an advanced electric drive unit capable of 295 lb.-ft. of instant torque to propel the vehicle. Using only the energy stored in the battery, the ELR will deliver an estimated range of about 35 miles of pure electric driving, depending on terrain, driving techniques and temperature.

ELR includes a blended regenerative braking system that will recapture a majority of the energy in a vehicle’s momentum rather than losing it as heat in the brakes, which is common with conventional vehicles. When the brakes are applied, energy is recaptured, as the vehicle slows. If more brake force is ap-



Cadillac ELR’s paddle shifters

plied, ELR automatically blends in friction brakes to apply greater stopping power for more urgent stops.

The system has a standard 4-channel anti-lock braking system and includes electronic Brake Force Distribution, which uses independent rear control for improved stability and braking during cornering, as well as more effective use of the rear brakes as vehicle loading occurs.

Also, the disc brake system features vented front and solid rear Duralife rotors with Ferritic Nitro-Carburizing finishing technology to reduce corrosion and deliver longer life.

China: Meet Jeep Cherokee

The all-new 2014 Jeep Cherokee, which has already turned heads at its debut in March at the New York Auto Show, took its first bow in China April 20 at the Shanghai Auto Show.

The Jeep Cherokee, which will be known in China as “Zi You Guang,” is slated to arrive in volume in dealer showrooms in the China market by the end of the year. The dramatically restyled Cherokee was introduced at the Shanghai show by Mike Manley, president/CEO of Jeep Brand, Chrysler, and chief operating officer for Asia Pacific Region, Fiat S.p.A.

“Jeep is our global brand and, since its inception, the all-new Jeep Cherokee was conceived and developed not only for our home market of the U.S., but also for world markets,” he said. “The new Jeep Cherokee will become a benchmark in the global mid-size SUV segment by combining the segment-first nine-speed automatic transmission, refined on-road manners and fuel efficiency with the capability that only Jeep can deliver and that our cus-

tomers have learned to trust.”

Manley noted China is one of the largest markets, with one U.S. for the Jeep brand, and one out of five vehicles in the mid-size SUV segment is sold in China.

The all-new Jeep Cherokee will deliver up to a 30 percent improvement in fuel economy over the outgoing model. At launch in China, two 4x4 system options will be available for all-weather capability: the Jeep Active Drive I with a one-speed power transfer unit (PTU) and Jeep Active Drive II with a two-speed PTU and low range.

For international markets, the Jeep Cherokee will also be available with a diesel powertrain in both left- and right-hand-drive versions.

Two more Jeep vehicles debuted at the Shanghai Auto Show – the new Jeep Grand Cherokee and the Jeep Wrangler Rubicon 10th Anniversary Edition.



2014 Cherokee hit the recent Shanghai Auto Show.

The newest Jeep Grand Cherokee is called by Chrysler the most fuel-efficient Grand Cherokee ever, thanks to its all-new eight-speed automatic transmission, powerful yet thrifty engine options and the new Eco Mode feature.

The Rubicon 10th Anniversary Edition, created as a tribute to 10 years of Wrangler Rubicon history and to the Jeep brand’s most passionate enthusiasts, is said by Chrysler to be the most capable factory-produced Jeep Wrangler ever.

Student Engineers Challenged at Fuel Cell Competition

Students from around metro Detroit electrolyzed distilled water to produce hydrogen at the 2013 SAE Congress recently held at the Cobo Center in Detroit.

In addition to engineers talking about the latest advances in automotive technology, students from around metro Detroit got to participate in contests showing off what they could do.

One of the contests was the third annual “A World In Motion (AWIM) International Fuel Cell Competition,” held on April 18. The competition focused on explaining scientific concepts to K-12 students in an easily approachable, hands-on environment.

Sponsored by the General Motors Foundation, the International Fuel Cell Competition invited more than 150 upper elementary and middle school students to compete in utilizing hydrogen fuel cells to power small car models.

The competition is judged in four categories: endurance, endurance with weight, accuracy and speed.

Student teams electrolyzed distilled water in a reversible Proton Exchange Membrane Fuel Cell to produce hydrogen that acted as an energy source for the cars’ electric motors. With the assistance of teachers and professional industry volunteers, the International Fuel Cell Competition showed students the practical applications of science, technology, engineering and mathematics (STEM) in real-world situations.

“Programs like AWIM are an im-

portant as they encourage students to become familiar with and interested in STEM-related subjects,” said Karen Nicklin, manager, Educational Initiatives, GM Foundation – a seven-year volunteer with AWIM.

“The General Motors Foundation has played an integral role in helping to create the Fuel Cell Challenge,” said Lori Gatmaitan, interim director, SAE Foundation. “This year’s Grand Champion, Clippert Academy of Detroit, exuded the passion and excitement that keeps this competition competitive annually.”

Competition results were:
2013 Grand Champion – Team #12 (Clippert – Detroit)

Endurance
• 1st - Team #12 (Clippert)
• 2nd - Team #11 (Clippert)
• 3rd - Team #5 (Gompers – Detroit)

Endurance with weight
• 1st - Team #7 (Emerson)
• 2nd - Team #12 (Clippert)
• 3rd - Team #39 (Detroit Country Day School – Bloomfield Hills)

Accuracy
• 1st - Team #10 (Clippert)
• 2nd - Team #12 (Clippert)
• 3rd - Team #28 (Lincoln – Warren)

Speed
• 1st - Team #4 (Gompers)
• 2nd - Team #41 (Detroit Country Day School)
• 3rd - Team #32 (Lincoln)

There was also the SAE International seventh annual AWIM International JetToy Competition on Wednesday, April 17.

Sponsored by Johnson Controls, Bosch, Kia, Mercedes-Benz

Financial Services and TRW, the International JetToy Competition invited students to create and compete JetToy vehicles. The competition was judged in four categories: distance, accuracy, weight carrying and time.

“At a time when the United States is experiencing a STEM crisis, it’s refreshing to see students so engaged in collaboration and competition,” said Russ Burgei, VP Complete Seat Engineering Americas, Johnson Controls. “We are proud to support a program that gets students passionate about STEM-related fields.”

Competition results were:
2013 Grand Champion – Team #7 (St. Michael – Livonia)

Distance
• 1st – Team #76 (St. Edith – Livonia)
• 2nd – Team #26 (Maury – Washington, D.C.)
• 3rd – Team #4 (St. Michael)

Accuracy
• 1st – Team #7 (St. Michael)
• 2nd – Team #49 (Allen – Plymouth)

• 3rd – Team #58 (Cooper – Westland)
Weight
• 1st – Team #33 (Smith – Plymouth)

• 2nd – Team #36 (Smith)
• 3rd – Team #2 (St. Michael)
Time
• 1st – Team #2 (St. Michael)
• 2nd – Team #12 (St. John – Fenton, Mich.)
• 3rd – Team #5 (St. Michael)

The third student contest was the International Motorized Toy Car Competition on Tuesday, April 16. Sponsored by Honey-

AH Chamber Still Has Openings For Golf League

The Auburn Hills Chamber of Commerce Corporate Golf League is open for business and extending an invitation to join the league for a summer of golf and networking at Fieldstone Golf Club of Auburn Hills.

Starting on Wednesday, May 1, the League’s summer of golf continues on Wednesdays at 4:24 p.m. for 16 weeks. (There will be no Golf League activity for June 26 or July 3.)

Those who join will have the opportunity to network with new companies each week, with an available option for a company to purchase one company spot and rotate its team through the season.

League membership includes:

- Nine holes of golf with cart;
- Discounts and promotions on golf merchandise and golf fees;
- Complementary reception first night of league play;
- Practice facility punch card discount;
- Complementary 18-hole round and end-of-season banquet.

Membership is available at a discount for current chamber members. To buy a membership or to reserve a place, contact the chamber at 248-853-7862.

Superhero Party Fun at Library

The Auburn Hills Public Library is holding a “superhero party” on Saturday, May 4, in the Large Meeting Room of the main library starting at 2 p.m.

The event will last about an hour and kids attending are encouraged to dress as their favorite superheroes.

There will be snacks, activities and a special mystery guest. There is only room for 16 attendees, and the party is aimed at children between the ages of 3 and 8. To register, visit the library’s website.

OCC Holds Event Aimed at Aiding Women Students

The Womencenter at Oakland Community College, in cooperation with the American Association of Women – Farmington Branch, will present “Back to School Day,” Friday, May 10 at OCC’s Orchard Ridge Campus in Farmington Hills.

The event, designed for women of all ages interested in attending OCC, will address a variety of issues. Free and open to the public, it runs from 10 am to 2 pm in the campus’ J Building, Room 306.

These informational and interactive sessions will help women in the decision-making process of returning to school at OCC. Topics include: How to get started; The admissions process; Financial concerns; Stress and time management; Balancing work, family and school; and Academic and career issues.

The program is sponsored by the Womencenter, a facility that provides educational and supportive resources for area women, and the Farmington Branch of the American Association of University Women, an organization dedicated to advancing equity for women and girls through advocacy, education, and research.

For further information call the Womencenter at 248-522-3642.

well and Kia, the International Motorized Toy Car Competition invited more than 150 upper elementary and middle school students to create and compete motorized vehicles.

The competition was judged in four categories: hill climb, speed, obstacle course and weight carrying.

“Our nation faces a crisis in STEM education. In recent studies, 31 percent of eighth-graders scored ‘proficient’ or better in science,” said Tony Schultz, vice president of the Americas, Honeywell Transportation Systems.

“The SAE Foundation programming is helping to erase these deficits by getting students engaged in STEM education through programs like A World in Motion’s Motorized Toy Car Competition.”

Competition results were:
2013 Grand Champion – Team #5 (St. John – Fenton, Mich.)

15-Degree Hill Climb
• 1st - Team #7 (Roosevelt – Keego Harbor, Mich.)

• 2nd - Team #5 (St. John)
• 3rd - Team #26 (St. John)

30-Degree Hill Climb
• 1st - Team #7 (St. John)
• 2nd - Team #8 (St. John)

• 3rd - Team #21 (St. Edith – Livonia)

Speed
• 1st - Team #8 (St. John)
• 2nd - Team #26 (Roosevelt)
• 3rd - Team #15 (Burton International – Detroit)

Obstacle Course

• 1st - Team #6 (St. John)
• 2nd - Team #21 (St. Edith)
• 3rd - Team #18 (Burton International)