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Newly updated GM Battery Systems Lab at Warren Tech Center

GM Adds 50,000 Square Feet to Its Global Battery Lab to Add Speed, Improve Value

General Motors has nearly tripled the size of its Global Battery Systems Laboratory, cementing the lab's stature as the largest battery lab in North America owned and operated by a major auto manufacturer.

"In the past four years, the competitive landscape in the electrification space has grown exponentially. This has required us to raise our game and draw a new line in the sand," said Doug Parks, GM vice president, Global Product Programs.

"To maintain our battery leadership, this additional real estate is filled with new capability that will help us improve speed to market for our next generation of battery systems and help us improve the value equation to our customers around the world."

The latest addition of 50,000

square feet brings to 85,000 the total square footage of the lab. The expansion made possible the increase in the number of pack-level test channels from 64 to 112 and cell-level test channels from 96 to 120, Parks said.

GM spokesman Kevin Kelly said the battery lab opened up in 2009 in the Tech Center campus in Warren.

"This is our third and final expansion of the battery facility," Kelly said. "We didn't add more office space, we put in lab space. The battery facility is where the old Chevrolet performance center was. They used to put engines up on dynamometers to test them. Now they've come full circle, so to speak. They are now testing batteries 24 hours a day to see how long they last."

GM's Global Battery Systems

Lab has been responsible for testing and validating both battery cells and packs for all of GM's vehicle electrification systems, including the battery systems for the Chevrolet Volt, Cadillac ELR, Chevrolet Spark EV and GM's eAssist light electrification system, Kelly said.

The additional capabilities of the lab expansion include:

- Dedicated equipment for future vehicle battery system development such as charger development and testing, cord set testing and competitive benchmarking;
- Building prototype battery packs for vehicle development programs;
- The ability to act as the hub for validation and testing of all

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Bumper-to-Bumper? This Car Brakes, Accelerates for You

How'd you like a driver for you in stop-and-go traffic?

Some folks say that's how GM's full-speed-range adaptive cruise control, available on the 2014 Chevrolet Impala, feels for them.

All drivers have to do, say GM officials, is set the control on a following gap that they choose. If the car starts to close that gap, the brake is automatically applied.

In a public statement, GM said the control can help reduce the number of repeated stops and starts during every day commuting, which can be stressful for drivers.

General Motors and the University of Michigan Transportation Research Institute conducted a large field test in 2005 in cooperation with the National Highway Traffic Safety Administration, using Adaptive Cruise Control at speeds above 25 mph.

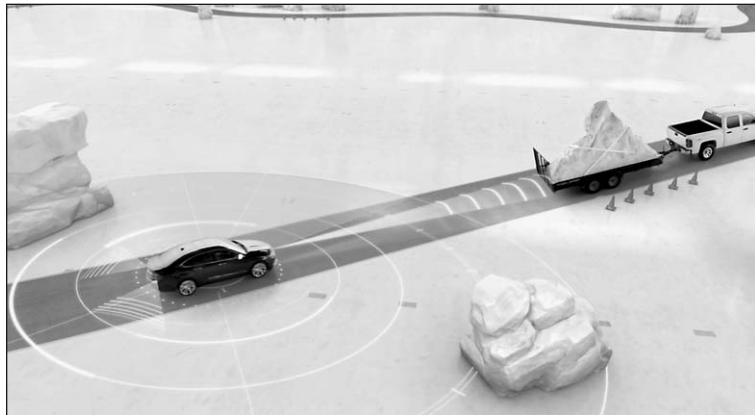
"Results indicated that brake-apply rates were 25 times lower under freeway conditions relative to manual driving," said James Sayers, a research scientist in the institute's human fac-

tors group. "These results suggest that Adaptive Cruise Control can substantially reduce the workload and stress associated with the everyday task of car following."

The redesigned flagship sedan is the first Chevrolet to offer this technology, which addresses the repetitive task of braking and accelerating via a cruise control system that allows the driver to maintain a driver-selected following gap with the vehicle ahead, said GM spokesman Chad Lyons.

Unlike regular cruise control, the full-speed-range adaptive cruise control system uses forward-looking radar to let the driver choose one of three gaps at which to follow the car ahead, Lyons said. These gaps adapt to the cruise speed selected, so a larger distance between cars at a higher cruise speed is provided. The system can automatically accelerate and brake the vehicle up to moderate levels to maintain the driver-selected gap, and can

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Rendering of the benefits of Impala's adaptive cruise control



Mark Pope, left, of the SAE and Mark Pedrazzi of BAE look at a Bradley M2A3 Busk III armored vehicle.

SAE Engineers' Eyes Widen On Tour of BAE Systems

by Jim Stickford

It was a little like taking a kid to a candy store.

That's how Mark Pope described taking a group of engineers on a tour of the BAE Systems building on Van Dyke on Sept. 16.

The Mid-Michigan Chapter of the Society of Automotive Engineers (SAE) had visited the BAE facility when it was under construction.

Pope, a senior project engineer at GM and chairman of the chapter's membership board, said when the group learned they could visit the completed building and see some of what BAE is currently working on, they jumped at the chance.

They are, after all, engineers, Pope said, and getting to see an operation like BAE Systems is like an acrobat going to the circus.

Pope said 33 SAE members toured the facility for about three-and-a-half hours and were able to look at how BAE engineers designed vehicles using the latest in teleconferencing technology.

"Mid-Michigan SAE members

found it interesting because most of the employees at BAE are fellow engineers," Pope said.

Maintaining connections with companies like BAE is important to the SAE engineers, Pope said, because there's been a lot of crossover for engineers switching from the auto industry to the defense industry and back over the past several years.

"When the economy went bad a few years ago, the automakers laid off engineers, especially Chrysler and GM," Pope said. "A lot of engineers were able to find positions in the defense industry."

But, Pope said, times have changed. Five years ago, the United States was fighting in Iraq and Afghanistan. Now, the Iraq fighting is over and the country is getting ready to turn the fighting in Afghanistan over to the local government. So, defense spending is down for that and other reasons.

Chrysler, Ford and GM have returned to profitability and are looking for qualified engineers, Pope said.

"Now that the car business is

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