

Ford's First Transit Connect EVs Headed to Customers

by Stefanie Carano
Staff Reporter
Detroit Auto Scene

Ford Motor Co. has begun shipping the Transit Connect Electric, the all-electric version of its popular Transit Connect commercial vehicle, to early customers.

The Transit Connect Electric was developed as a collaboration between Ford, electric vehicle powertrain developer Azure Dynamics and AM General.

The Dec. 7 Transit Connect Electric production launch took place at AM General's engineering and product development center in Livonia, the final assembly site.

AM General is expected to manufacture an estimated 600-700 vehicles when it begins full production starting in April of 2011, servicing customers in the United States and United Kingdom.

Ford chief engineer Scott Staley said Transit Connect Electric has a range of 80

miles on a single charge, accommodating most commercial service vehicles, who he said have a typical daily mileage between 20 and 49 miles, with an average daily operation of 41 miles, based on industry studies.

"Fleets have a lot of advantages for a vehicle like this," he said. "For example, fleets have trained drivers to know how to operate the vehicle."

"They also have defined routes, oftentimes the routes are the same over and over, certainly within confined areas. For example, military bases would be a great application where you'll be operating the vehicle within the confines of a military camp. They tend to get regular service."

"So, when we sell a normal car to a person with a complete mission, we really don't know how they're going to treat the car. They're not trained in operating the car and hopefully they'll bring it in for service. And, return-to-base operation also makes

the issue of charging the vehicle every night to be ready for the next day's work a much easier proposition."

Staley said Ford is targeting a number of commercial fleets for the vehicle's use, including the U.S. and Canadian postal service. He said more than 96 percent of the U.S. postal service delivery vehicles drive less than 40 miles per day.

Staley said Ford's participation in the vehicle development collaboration was largely around parts sharing. He said Ford was able to connect Azure with suppliers for Ford production components and provided technical support and guidance, including technical design reviews in collaboration with Azure, as well as test methodologies.

Vehicle durability testing takes place at the Michigan Proving Grounds in Romeo, running four testing cycles for the Transit Connect Electric.

He said four Ford people worked full-time on the pro-

gram – PMT Leader Duane Grider, Battery Technical Expert at Ford's Battery Research Labs Bruce Blakemore, Program Manager Brad Probert and Program Analyst Anthony Senatore.

Azure was fully responsible for the design, development and validation of the vehicle.

Ford said that the all-electric commercial vans – built on the Ford Transit Connect vehicle body and equipped with Azure's patented Force Drive battery electric powertrain, and assembled by AM General at its facility in Livonia – are reaching the market 13 months after the collaboration to develop the zero-emissions vehicles was first announced.

"Supplier collaboration is important on all Ford product programs, but it was especially key in this effort, which went from contract signing to vehicle production in 13 months," said Sharif Marakby, Ford director,

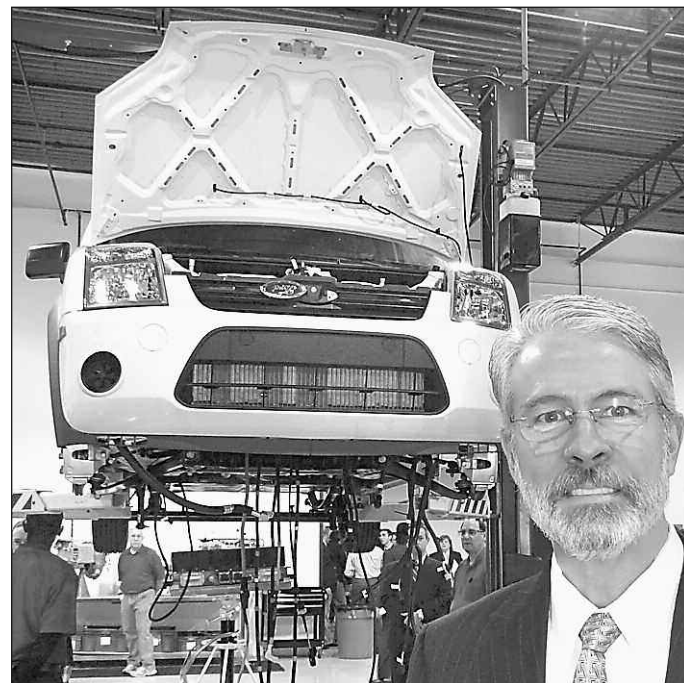


PHOTO: GERALD SCOTT

Ford Chief Engineer Scott Staley led the team that took the Ford Transit Connect EV van from concept to reality in 13 months.

TRW Introduces New Seat Belt Retractor

KARLSRUHE, Germany – TRW Automotive Holdings Corp., the global leader in active and passive safety, has launched its next generation seat belt pretensioner to offer weight and packaging advantages to its worldwide customers. The SPR4 (Snake Pretensioner Retractor) uses a plastic piston instead of conventional metal components to transfer tensioning torque, resulting in a simpler and lighter weight design as well as more compact packaging.

Harald Lutz, director engineering, TRW seat belt systems said: "The pyrotechnical seat belt pretensioner has been an established product for nearly 30 years, but TRW has taken this concept to a new level. Based on our proven production seat belt retractor (ESA 4.0), the SPR4's design is simplified and a new tensioning concept transfers power without limiting functionality."

When vehicle sensors trigger the seat belt system, a pyrotechnical gas generator is ignited releasing a 'green gas' which expands and builds up pressure in the guiding tube. This pressure acts on the snake-like plastic piston which is forcefully propelled in to a pinion instead of the usual steel balls. The pinion then transmits a significant torque to the belt retractor spool to pre-tension the seat belt. The whole process takes just ten milliseconds.

Lutz added: "Seat belt pretensioners need to generate tensioning torque quickly, accurately and reliably with a stable level of force and the innovative concept allows for this."

The new design offers vehicle manufacturers a number of advantages compared with existing systems. The lighter weight, plastic material allows the tensioning force to be generated more quickly than conventional systems. Secondly, the damping behavior of the plastic snake allows the initial peak when impacting the pinion to be significantly lower compared to conventional systems where two rigid steel elements impact on each other. This also

results in less wear on the SPR4's components.

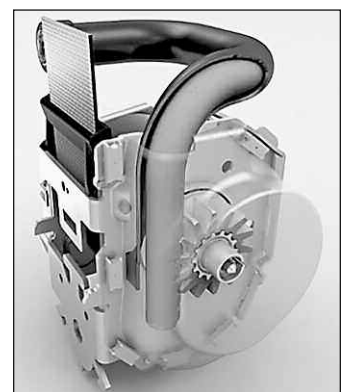
Moreover, the green gas shows favorably low variation over the temperature range and works reliably through a wide range of conditions.

The design of the SPR4 offers vehicle manufacturers greater flexibility in terms of packaging and space as it consists of only four main components: the piston, the gas generator, the tube and the pinion. The tube is bent into the dimensions of the retractor without constraining the seat belt webbing helping to further minimize installation space.

TRW's ESA 4.0 has been in production since 2001 on a number of key vehicle platforms. The new SPR4 will be ready for production in 2013.

With 2009 sales of \$11.6 billion, TRW Automotive ranks among the world's leading automotive suppliers. Headquartered in Livonia, Michigan, USA, the Company, through its subsidiaries, operates in 26 countries and employs over 60,000 people worldwide.

TRW Automotive products include integrated vehicle control and driver assist systems, braking systems, steering systems, suspension systems, occupant safety systems (seat belts and airbags), electronics, engine components, fastening systems and aftermarket replacement parts and services.



TRW's new SPR4 (Snake Pretensioner Retractor) uses a plastic piston instead of conventional metal components to transfer tensioning torque, resulting in a simpler and lighter weight design, the Livonia-based auto supplier says.

Starlight Mints, Red Hots Top Gingerbread Truck

by Stefanie Carano
Staff Reporter
Detroit Auto Scene

An edible Ford vehicle coated in every kind of candy is on display at the Dearborn Inn until Jan. 1.

It's a gingerbread house-style replica of a 1932 Ford open cab pickup truck.

The truck is 14 feet long by 6 feet wide consisting of approximately 150 pounds of gingerbread, 20 pounds of Royal Icing and 150 pounds of candy. Other candy includes Starlight Mints, Red Hots, Raspberry Jellies, Lemon Bombs, Twizzlers, Peach Jellies, black licorice and other types.

The vehicle was constructed by the hotel kitchen staff, led by Executive Chef Kieran Savage.

"It took a good three weeks between the gingerbread rolling, cooking and cutting," Savage said. "We bake the gingerbread in a sheet pan size of 18 by 36 inches. There's about 40-50 panels of gingerbread."

Inside, he said, there's a little bit of candy on the dashboard. The steering wheel is wrapped in fruit roll-ups.

The vehicle includes a V8 engine, the one featured in the 1932 truck.

Each year in the spirit of the holidays, the kitchen staff creates a gingerbread display, typically representing something related to Ford Motor Co. and the hotel.

The staff chose a 1932 Ford pickup because it was the vehicle parked outside of the hotel when it opened in July of 1931.

"It takes at least a month to plan, put our heads around exactly how we're going to build it," he said. "I did research on what the 1932 truck looked like and then we built it from there."

Savage said last year they made a Ford Tri-Motor airplane.

He said the most difficult part is trying to replicate objects using candy and sugar.

"Because you're working with different stuff, you're not

working with wood," he said. Savage, a native of Ireland, has been a chef at the Dearborn Inn for the past 11 years. He received his culinary training from Rockwell Hotel and Catering College.

Savage said he worked in various places around Europe before coming to the United States.

"I ended up in beautiful Dearborn," he said.

Trisha Allen, front desk representative at the hotel, said the display receives a considerable amount of attention in the context of the lobby's Christmas theme.

"We have people who come in here all the time just for the decorations," Allen said.

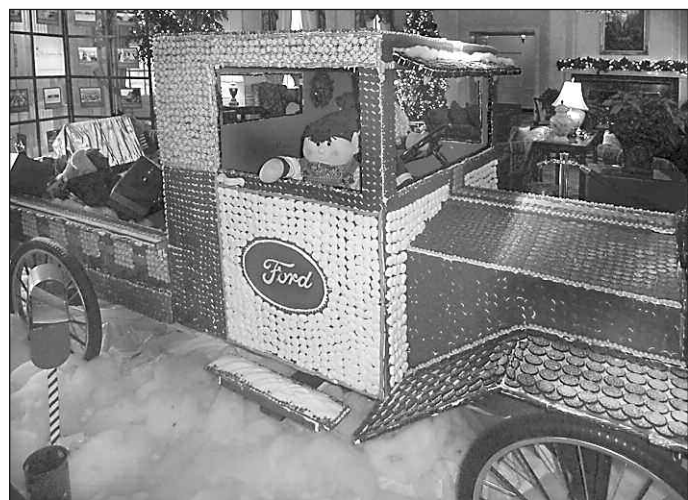


PHOTO: STEFANIE CARANO

A 1932 Ford open cab pickup truck made of gingerbread is displayed in the lobby of the Dearborn Inn.

Ford's Mustang BOSS 302S Race Car Will Be Built at AAI Flat Rock Plant

DEARBORN – It has been "The Year of the Boss."

This past year has seen the return of the Mustang BOSS 302R to track at Daytona and the unveiling of the 2012 BOSS 302 production Mustang. And now, Ford Racing announces the latest addition to its line of turnkey ready-to-race Mustangs – the BOSS 302S.

Building on the successful race history of the BOSS 302, Ford Racing is providing Mustang enthusiasts an affordable way to road race with the introduction of the Mustang BOSS 302S.

The limited production BOSS 302S will be the third competition car in Ford Motor Company's history to be built at a Ford production facility and made available for racers to purchase through authorized Ford Racing dealers. The Mustang FR500S was the first race car built on a modern Ford production line followed by the NHRA legal FR500CJ, a.k.a. "Cobra Jet."

"Ford Racing is excited to add an additional turnkey ready-to-race car to our stable, which includes the highly successful FR500C, FR500S, BOSS 302R and Cobra Jet,"



2011 Mustang BOSS 302

said Mark Wilson, engineering manager, Ford Racing. "The enthusiasts who purchase the BOSS 302S will be competitive in both the World Challenge GTS and the NASA American Iron Series. We look forward to adding their names to the BOSS 302's racing history."

The 440-hp Ford Mustang BOSS 302S was developed by Ford Racing engineers, and will be built at Auto Alliance International (AAI) assembly plant in Flat Rock, the home of the Mustang. It is based on the street legal 2012 Mustang

BOSS 302.

The Mustang BOSS 302S is powered by a Boss 5.0-liter 4-valve Ti-VCT V8 engine and includes a 6-speed transmission sourced directly from the BOSS 302 parts bin. Power is transferred to the rear wheels via a T2 Torsen differential and 3.73 gears. The BOSS 302S suspension features two-way adjustable coil-over dampers and Ford Racing anti-roll bars in both the front and rear.

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AM General Displays Expertise on Ford Van Project

By Gerald Scott
Editor
U.S. Auto Scene

It kind've figures that a high-profile niche truck program like the Ford Transit Connect Electric utility van would have high-profile partners in OEM Ford and suppliers like powertrain provider Azure Dynamics and battery maker Johnson Controls-Saft.

But the fourth partner in the project might come as a bit of a surprise to the domestic auto industry – it's AM General.

That's right, the same AM General that made its modern name on the Humvee and oth-

er products for the military is lately assembling petite Transit Connect "gliders" for the Ford EV project.

To create the Transit Connect Electric, Ford ships a vehicle body or "glider" to AM General's assembly facility in Livonia. Azure Dynamics then integrates its ForceDrive electric drivetrain into the Ford Transit Connect body.

The ForceDrive electric powertrain utilizes an advanced lithium-ion battery built in Holland by Johnson Controls-Saft. Completed vehicles will be shipped directly to customers throughout North America.

Rick Smith, president of AM

General's Commercial Business operations, delighted in the newfound attention that the official launch of the Transit Connect generated at the AM General plant in Livonia last week.

"Obviously, we're mostly closely associated with the Humvee and the production of military vehicles," Smith said.

"But behind the scenes, AM General's been producing commercial vehicles for a long time. We produced 170,000 commercial vehicles for the U.S. Postal Service back in the 1970s and 1980s.

"We've produced transit bus-

es. Most recently, we produced the Hummer H-1 and Hummer H-2. The Hummer H-1 for AM General and later the Hummer H-2 for General Motors – about 160,000 H-2s for General Motors.

"This particular vehicle, albeit yet another commercial niche product that falls in our sweet spot, but it also allows us to get some really valuable lessons learned for what it takes to compete in the electric vehicle industry."

AM General, as a long established contract vehicle assembler and services provider,

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PHOTO: GERALD SCOTT

AM General made its name by producing heavy military vehicles such as the Humvee, above, but lately it is involved with Ford and Azure Dynamics on upfitting the EV version of the Transit Connect van in a boutique-sized AM General plant in Livonia.