

World's 1st Hydraulic Hybrid Bus

STORY AND PHOTOS
BY GERALD SCOTT

Altair ProductDesign, a division of Altair Engineering of Troy, debuted its first hybrid hydraulic transit bus recently, and what a bus it figures to be.

With more than half the world's population now living in urban areas, transit buses are where the action is in mass transportation, and this effort is Altair's response to this global opportunity.

The bus is called LCO-140H, which stands for "Low-Cost Ownership, 1st 40-foot Hybrid." The debut came at Altair's headquarters at 16 Mile and John R in Troy.

In addition to investments made by Altair and Automation Alley, the BUSolutions consortium has been funded by multiple federal and state sponsors, including the Federal Transit Administration and the Michigan Economic Development Corp. (MEDC).

"This project has been a collaborative effort from start to finish throughout the development, design and test phases," said Mike Heskitt, chief operating officer of Altair ProductDesign.

"BUSolutions demonstrates Altair's expertise and capabilities as a concept-to-release, full vehicle development partner."

BUSolutions is projected to lower the cost of ownership by \$170,000 per bus, compared with a conventional diesel passenger bus. With the average local transit authority operating approximately 300 buses, the savings could reduce a city's transit bus operation by about \$50 million over the lifecycle of the new vehicles.

Added Heskitt, "Volts are electric hybrids, so they're charging a battery. We charge a hydraulic pressure tank . . . it uses pressure to run motors that propel the vehicle."

The unique hybrid hydraulic powertrain provider



Altair CEO Jim Scapa, far right, led a host of dignitaries to welcome the introduction of Altair's new Series Hybrid Hydraulic bus at the supplier's headquarters in Troy early last month.



Altair CEO Jim Scapa

was Parker Hannifin Corp.

Both Parker and Altair have performed rigorous testing of the LCO-140H on the Ford Michigan Proving Grounds in Romeo, where Parker leases dedicated space for its various powertrain projects.

James Scapa, chairman and CEO of Altair Engineering, hosted the big launch party in Troy and he liked the big turnout. Scapa started Altair in his garage a long time ago and today Altair and its subsidiaries are global engineering and design enterprises.



The new Series Hybrid Hydraulic bus



Jeff Hopkins, engineering manager, gave demonstration rides in Altair's new Series Hybrid Hydraulic bus.



PHOTO: GERALD SCOTT

Dondi Dismer, left, a manager at fleet tracking vendor Greenroad, was a keynote speaker at the Detroit Clean Fleet Technology Forum at Henry Ford Community College in Dearborn recently.

Schoch Named Chairman, CEO of Ford Motor China

Ford Motor Co. last week elected David L. Schoch, controller, The Americas, as a company officer and named him to the role of chairman and CEO, Ford Motor China, effective Nov. 1.

In his new role, Schoch, 60, will assume direct responsibility for the operations and business leadership of Ford Motor China. He will report to Joe Hinrichs, group vice president and president, Asia Pacific and Africa.

"We have put in place aggressive expansion plans for Ford in China," said Joe Hinrichs, group vice president and president, Ford Asia Pacific and Africa.

"As Ford China enters into a phase of accelerated growth, Dave, with his unique combination of skills and experience, is well-suited to lead Ford China and take our expansion plans to the next level, including bringing four new plants on line and launching 15 new vehicles by 2015.

"Dave's appointment great-

ly strengthens our leadership team in China and demonstrates Ford's continued strong commitment to China, a key driver of Ford's global growth in the next 10 years and beyond."

Since joining Ford as a financial analyst in 1977, Schoch has held a variety of leadership positions, including executive director, Ford Canada, Mexico and South America Operations. He also served as chief financial officer and vice president of Strategic Planning for Ford of Europe and chief financial officer of Ford Asia-Pacific Operations.

Schoch holds a bachelor's degree in Business from Lycoming College and an MBA in Finance from Temple University.

Replacing Schoch as controller of The Americas is K.R. Kent, currently executive director of Investor Relations. As senior finance leader for all of The Americas, Kent, 48, will report to Ford senior executive Mark Fields.

'Fleet Forum' Reports on Gains in Fuel Efficiency

by Gerald Scott
News Dept.

Running a fleet of vehicles – any such fleet – in a time, money and fuel efficient manner is more complicated than it first looks.

This much became clear during an interesting fleet vehicle conference hosted by Henry Ford Community College (HFCC) in Dearborn recently. The Ann Arbor-based Clean Energy Coalition also sponsored the event.

Entitled the Detroit Clean Fleet Technology Forum, the event brought together fleet owners, vendors that serve the sub-industry, Detroit Police officers to explain the city's new anti-idling law and more insiders interested in the latest trends in fleet management.

Generally the forum examined idle reduction technologies and fuel economy measures. Various professionals offered expertise and practical solutions to help fleets reduce

their operating costs, improve air quality and also reduce greenhouse gases and carbon footprints.

Various programs throughout the day told fleet managers how to "drive smart" and save fuel, with a focus on new equipment, including auxiliary power units (APUs), low resistance tires and more.

One speaker on the topic was Dondi Dismer, a manager at Greenroad, which is a safe driving measurement and consulting firm in California that provides fleet's monitoring software for the individual vehicles.

Greenroad claims that its collective efforts for all of its clients have so far saved \$101,012,277 and over 11,785,351 gallons of fuel in the process.

The firm provides fleet managers with monitoring software such that each vehicle is tracked and monitored via GPS to the point where the computer program can grade each driver's daily / weekly ef-

Ricardo Unveils Its New 'HyBoost Project Vehicle'

VAN BUREN TOWNSHIP – Ricardo, Inc., the U.S. subsidiary of Ricardo plc, the leading independent provider of technology, product innovations and engineering solutions, recently revealed for the first time the HyBoost project vehicle at the Cenex Low Carbon Vehicle 2011 (LCV2011) event hosted at Rockingham, U.K.

The HyBoost demonstrates a combination of high impact, low cost electrical systems which offer the prospect of radical engine downsizing using electric supercharger, and energy capture and storage technologies within a conventional gasoline powertrain architecture.

The HyBoost project has been led by Ricardo in partnership with Controlled Power Technologies, the European Advanced Lead Acid Battery Consortium, Ford, Imperial College London, and Valeo, with co-funding from the UK government-backed Technology Strategy Board.

The partners have sought to demonstrate an extremely cost-effective, ultra-efficient gasoline engine in a C-segment passenger car delivering the performance of a baseline 2.0L model but with significantly reduced real-world and drive cycle carbon dioxide emissions, and comparable improvements in fuel-economy.

The project deliberately focused upon technologies and systems that are already on the market or are capable of production implementation within the near future.

Particular focus was placed upon sustainability, avoiding the use of scarce or expensive materials, providing the straightforward manufacturing processes and offering a high level of scalability required by the automotive sector.

HyBoost provides a very practical demonstration of what can be achieved today in terms of carbon dioxide reduction using a conventional powertrain architecture and available efficiency improving technologies.

The HyBoost concept is based on a 2009 Ford Focus in which a 2.0L naturally aspirated four-cylinder gasoline engine has been replaced with a 1.0L three-cylinder EcoBoost engine. In implementing this 50 percent downsizing by swept volume, the research team had the objective of delivering zero degradation in driveability, performance or acceleration.

This is to be achieved through the use of a combination of technologies including a belt starter-generator to provide regenerative braking and stop/start, exhaust energy recapture through electric turbo-compounding, advanced, cost-effective lead-acid batteries and super-capacitors to provide energy storage, and electric supercharging to provide improved transient response and avoid the pitfalls of turbo-lag that otherwise place a practical limit on the potential for downsizing.

A HyBoost demonstrator vehicle, including many of these technologies is being displayed at the LCV2011 event.

Commenting on first demonstrations of the HyBoost project vehicle, Ricardo chief technology and innovation officer Neville Jackson said:

"The form of 'intelligent electrification' powertrain architecture being evaluated in the HyBoost concept aims to break the previous boundaries of gasoline engine downsizing by implementing a practical mix of technologies aimed at recapturing braking energy and re-using this for supercharging at critical points in the operating envelope. Coupled with well-proven micro-hybridization techniques, HyBoost thus offers the prospect of significantly reduced carbon emissions from a gasoline engine powertrain in a more commercially attractive package than full hybridization, while delivering uncompromised or even better performance. We look forward to sharing the results of this very promising research project in the coming months."

Ford Turns to Its Volunteers for Community Support

DEARBORN – The Ford Volunteer Corps was on the job in more than two dozen communities across Southeast Michigan and 17 other states, during a Ford Accelerated Action Day dedicated to community building.

The Ford volunteers in the United States joined thousands of their Ford colleagues on six continents in making a world of difference for people in need during the 6th annual Ford Global Week of Caring, Sept. 10-18.

Thousands of Ford employee and retiree volunteers registered for community service projects in dozens of countries from Europe and Asia to Africa and the Americas.

Ford volunteers are working to create a better world by feeding the hungry, repairing shelters, renovating schools and assisting medical relief efforts in their local areas.

"As Americans remember 9/11, Ford and its employees are energized to make a positive difference in their local

communities," said Jim Vella, president, Ford Motor Company Fund and Community Services.

"Creating a better world is an important part of Ford's legacy and an important part of its vision for the future. Ford volunteers are actively engaged in making that vision a reality."

Today's volunteer projects were selected by Ford's non-profit agency partners, and Ford is contributing \$70,000 to purchase the tools and materials needed to complete much of the work.

Among the organizations receiving grants are:

- Advanced Technology Academy, Dearborn – install playground equipment.
- Capuchin Soup Kitchen, Detroit – renovate food storage and clothing distribution areas.
- Community Housing Network, Madison Heights & Waterford – landscaping grounds.
- First Step, Plymouth –

build shed for outdoor equipment.

- Friends of Highland Recreation Services, White Lake – build wood fencing for property.

- Friends of the Rouge, Novi – restore shoreline with 1,000 plants.

- Grandmont Rosedale Development Corp., Detroit – restore historic buildings.

- The Guidance Center, Flat Rock – install new play yard fencing and mulch.

- Habitat for Humanity, Detroit, Huron Valley, Macomb, Monroe – various building projects.

- Lutheran Social Services – Danish Village, Rochester Hills – build bocce ball court.

- Matthaei Botanical Gardens, Ann Arbor – create entry garden.

- Mosaic Youth Theater, Detroit – make interior and exterior improvements.

- Northville Community Foundation, Northville – build wooden tractor & trailer in farm yard.

- Penrickton Center for Blind Children, Taylor – build privacy fence.

- Ruth Ellis Center, Highland Park – repair shelter porch and fire escape.

- Salvation Army – Glendale Corps, Detroit – renovate kitchen and dining hall.

- Starfish Family Services, Inkster – construct pantry.

- Vista Maria, Dearborn Heights – build patios in two courtyards.

The Ford Volunteer Corps also has joined forces with OneSight on an eyeglass drive in the Metro Detroit area. Employees and local residents are being asked to bring in their old eyeglasses for free distribution to eye care clinics around the world.

"Ford is known for its legendary vehicles and horsepower, but it also is leading the way in people power with innovative community programs, such as Global Week of Caring," said Janet Lawson, director, Ford Volunteer Corps.