

## U.S. Transportation Secretary Ray LaHood Visits the Volpe Center

U.S. Secretary of Transportation Ray LaHood and Research and Innovative Technology Administration (RITA) Administrator Peter Appel visited the Volpe Center in mid-August. During the visit, the Secretary learned more about the Volpe Center's diverse portfolio including its Rail Safety and Crash Worthiness Program, Global Maritime Domain Awareness program, its work with human factors and distracted driving, work on the Next Generation Air Traffic



Airport Surface Low Cost Driving Simulator in the Volpe Center's Human Factors Lab. (Photo by Linda Haas Photography)



Secretary LaHood discusses operator fatigue and distraction technology with Volpe staff. (Photo by Linda Haas Photography)

Control System and issues that may impact livable communities in the future.

Secretary LaHood also hosted a Town Hall meeting with Volpe Center and U.S. Department of Transportation regional staff, which included remarks by RITA Administrator Peter Appel, Volpe Director Emeritus and Acting Director Dr. Richard John, and U.S. Congressman Michael Capuano. Congressman

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## COI Spotlight - Freight Logistics and Transportation Systems

One of the remarkable features of the past few decades has been the almost inexorable development of an integrated network of commercial, economic and financial systems that have brought significant global benefits. This trend has been slowed somewhat by the downturn in economic activity. This trend has also been accompanied by an increase in the threat of terrorism and piracy to international commerce and travel. Both government agencies and private companies are attempting to integrate advanced technologies into their supply chain and create more robust, resilient logistical systems that can cope more effectively with delays, congestion or interruptions to normal service.

It is the role of the Center of Innovation (COI) for Freight Logistics and Transportation Systems to help its sponsors take maximum advantages of the benefits that these expanding

### Centers of Innovation

- Multimodal Systems Research and Analysis
- Safety Management Systems
- Environmental and Energy Systems
- Freight Logistics and Transportation Systems
- Physical Infrastructure Systems
- Communication, Navigation, Surveillance (CNS) and Traffic Management Systems
- Human Factors Research and System Applications
- Advanced Vehicle and Information Network Systems

global systems and advanced technologies can bring. The staff, under the leadership of COI Director Michael Dinning, possess the technical expertise necessary to understand both how these systems develop and interact, as well as how the next generation of transportation and logistics systems will evolve and change. They can analyze the operational as well as the economic, safety, security, environmental and energy issues associated with these systems. Volpe staff also understand how these systems can be disrupted by natural and manmade events and how to minimize the negative consequences of these disruptions.

The COI's sponsors include a range of U.S. and overseas agencies, including the U.S. Department of Defense and Transportation; the Inter-agency U.S. Government Technical Security Working Group; the Port Authority of New York and New Jersey; the Panama Canal Commission;

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## U.S. Transportation Secretary LaHood Visits the Volpe Center *Continued*

Capuano represents the 8th Congressional district of Massachusetts, which includes the Volpe Center.

Secretary LaHood was particularly impressed with the Maritime Safety and Security Information System (MSSIS), which the Volpe Center developed for the U.S. Navy to help them track vessels in the Mediterranean Sea and enhance global maritime domain awareness.

As the Secretary summarized on his blog at <http://fastlane.dot.gov> of August 18, "Looks like government is working up at the Volpe Center. Thanks to the Global Maritime Domain Awareness Program team and to all the folks at the Volpe Center; I hope to come back again to see what else you've come up with."



Secretary LaHood takes a question from Scott Smith of the Systems Operations and Assessment Division during the Volpe Center Town Hall Meeting. Inset: U.S. Congressman Michael Capuano. (Photos by Linda Haas Photography)

## COI Spotlight - Freight Logistics and Transportation Systems

and the U.K. Ministry of Defence. The COI's most significant recent projects include:

- Many of the COI's projects reflect the effective application of Global Positioning System (GPS) and tracking technologies to transportation activities. In response to a request from the U.S. Navy's European Command, the COI rapidly developed a prototype system that used existing equip-



Offloading containers at Vancouver Container Terminal. (Volpe Center Photo)

ment and technologies to locate and track commercial vessels in real time. The Maritime Safety and Security Information System (MSSIS) is now utilized by more than 55 nations. It is widely applauded for its rapid and cost-effective genesis, and won the Innovations in American Government Award from the Ash Institute at Harvard's Kennedy School of Government.

The COI has developed and implemented similar vessel tracking capabilities for the Panama Canal Commission and the Columbia River Pilots. For the U.K.'s Ministry of Defence, the COI developed and implemented a logistics information system that is used to track both passengers and cargo transiting the Ministry's transportation networks.

- The Port Authority of New York and New Jersey turned to the Volpe Center to develop a Security Cooperation and Emergency Operations Plan for regional surface transportation for the Connecticut, New Jersey and New York tri-state area. Key stakeholders in this project are New York Metropolitan Transit Authority, New Jersey Transit and Connecticut DOT. The plan integrates the responsibilities and resources of these agencies so that they can

respond effectively to any disruptions of essential services.

- The COI has played an active role in a wide range of security-related projects, conducting site surveys and risks/vulnerabilities assessments for ports and other transportation and logistics operations; documenting best practices; and developing and prototyping security-related inspection equipment and systems. Sponsors for these projects include the U.S. Army Corps of Engineers, Technical Security Working Group, various port authorities, and the Departments of Defense and Transportation. The COI also provides a range of information assurance and cybersecurity support services to the FAA.

- The COI supports several local public transit agencies, including the Massachusetts Bay Transportation Authority (MBTA), in developing strategies for implementing advanced security technologies throughout their systems. A primary goal of these efforts is to maximize the benefits to the agencies' operational efficiency and safety along with the security enhancements that result.

# Fire Suppression System Designed and Approved by Volpe Center Successfully Extinguishes Fire on U.S. Coast Guard Patrol Boat

At 1215 hours on May 20, the U.S. Coast Guard (USCG) 110' Patrol Boat Cuttyhunk was underway at full speed patrolling off the coast of Alaska. Without warning, the Cuttyhunk's port engine experienced an engine piston failure. A hole ruptured on the engine side, spilling oil onto the starboard engine and starting a fire.

The Cuttyhunk crew shut down the engine plant, sounded the fire alarm, and began their trained attack to extinguish the fire. The Volpe engineered FM-200 fire extinguishing system was activated from the pilot house. The fire suppression system immediately extinguished the engine room fire and the resulting damage was minimal due to the crew's quick response in activating the system.

The system was engineered for the 110' patrol boat fleet by the Volpe Center's

[Physical Infrastructure Systems](#) Center of Innovation. The Cuttyhunk's system was commissioned — including inspection, functional testing, and training — by Volpe engineers and Manufacturer Certified at the USCG yard during the Cuttyhunk's major overhaul in November 2007.

The fire extinguishing system is a suitable replacement for halon gas, which is now a



Patrol Boat Cuttyhunk. (Photo courtesy of USCG)

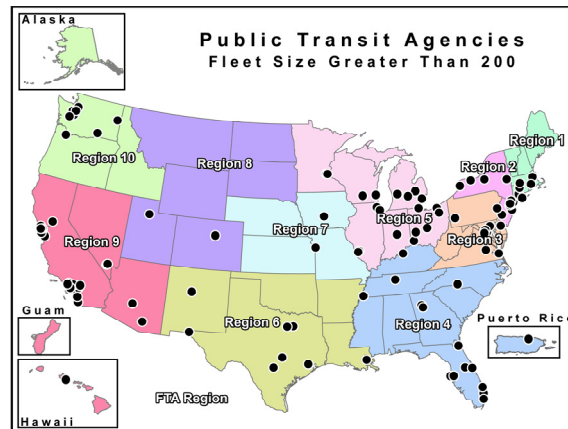
banned ozone-depleting chemical. FM-200 systems extinguish fires in an enclosed space by cooling the flame and interrupting the combustion process. It is ideal for fires typical in a vessel's engine room. The fire protection extinguishing agent was designed to be released remotely from the pilot house, locally in the FM-200 cylinder storage room, or at the individual cylinders. A back-up system provides for a second shot of extinguishing agent into the protected space.

This is the first known incident of fire at sea involving the FM-200 Volpe Center system, used by both the USCG and the U.S. Army. The system performed exactly as designed, protecting the lives of the crew and preventing further damage. The Volpe Center has over 15 years experience designing, installing, and commissioning fire protection system onboard approximately 60 U.S. Army Watercraft and USCG vessels, including eight 110' Cutters.

## Laying the Groundwork for New Connections Among Transit Providers

In alignment with national policy directives, transit and planning agencies across the country are deploying regional-level Intelligent Transportation Systems (ITS) technology to accommodate projected population growth and increased transportation service needs. The majority of U.S. regions have developed ITS Architectures, or planning frameworks, for the broad range of public and private stakeholders in each region. The ITS Architectures lay out guidance on how the agencies collaborate to develop, apply, and connect various transportation technologies to create agency-wide and regional systems. As the Federal Transit Administration (FTA) facilitates coordination and integration of the goals and activities of diverse transit stakeholders, they have engaged the Volpe Center to provide key technical support.

David Jackson, Project Manager, and Charlotte Burger, Benjamin Cotton, and Luis Mejias of the Multimodal Systems Research and Analysis COI, and Gina Filosa, Alex Linthicum, and Terry Regan of Volpe Center contractor MacroSys, are reviewing and cataloguing data from over 3,100 transit service providers they have identified to date. The team is also developing a concise report with recommendations for how the FTA regional offices can further support the effective interlinking of these numerous and varied transit services.



US Map of Public Transit Agencies. (Map courtesy of Volpe Center)

At the end of this project, the FTA will disseminate Volpe-compiled booklets that list the public transportation service providers by country, state, and region, the applicable ITS Architectures, and a summary of the level of involvement and use of the Regional ITS Architectures. The Volpe team will also present the results of the review to the transit industry via forums with the American Public Transportation Association and the Community Transportation Association of America.

With the cataloguing of public transportation agencies operating in the U.S., the FTA can better serve agencies seeking the appropriate type and level of technologies to become more accessible, integrated, efficient, and flexible. By disseminating comprehensive and organized agency data, the FTA has the potential to directly and indirectly inspire innovative partnerships as agencies form new connections.

The review of transit agencies that serve the public has been made possible by the contributions of the project sponsor, FTA's Office of Mobility Innovation, and from the input from FTA Regional Offices, Federal Highway Administration Divisional Offices, and representatives from transit agencies, metropolitan planning organizations, and State Departments of Transportation.

# Volpe Center to Receive the Regional Laboratory Award from the Federal Labs Consortium (FLC) Northeast



The Federal Laboratory Consortium (FLC) Northeast will recognize the Volpe Center as the recipient of its 2009 Regional Laboratory Award during a ceremony in Princeton, New Jersey, on September 16, 2009. This distinguished annual award recognizes the Volpe Center for its extraordinary efforts to support national and regional technology transfer activities. The FLC Northeast Region consists of about 35 U.S. Government R&D laboratories in the New England states, New York, New Jersey, and Puerto Rico.

During his visit to the Volpe Center, U.S. Secretary of Transportation Ray LaHood presented a letter of commendation to the Center for receiving this prestigious award. The commendation noted that the panel of judges that reviewed the Center's nomination was "especially impressed with the way the Center helps decision makers respond to national needs, define emerging problems, and seek solutions that will lead transportation in the 21<sup>st</sup> Century," and specifically cited three major Volpe Center projects:

**Global Maritime Domain Awareness:** The Volpe Center developed the Maritime Safety and Security Information System in 2007 to respond to a U.S. Navy request for assistance in tracking vessels in the Mediterranean Sea. The Center created a rapid and

cost-effective means of using existing signals transmitted from every global vessel to locate and identify these vessels from shore stations and aggregate this data in a real-time display. The project also won the 2008 Innovations in American Government Award from the Ash Institute for Democratic Governance and Innovation at Harvard's John F. Kennedy School of Government.

**SafeTrip-21:** In support of the Intelligent Transportation System/Joint Program Office (ITS/JPO), the Volpe Center launched SafeTrip-21. This initiative draws upon ITS communication, information, and navigation technologies that can be deployed readily to test and evaluate advanced applications to improve safety and mobility for highway and transit users.

**Integrated Vehicle-Based Safety Systems (IVBSS):** The Volpe Center assists the National Highway Traffic Safety Administration as the independent evaluator of the IVBSS project, which focuses on safety system integration for both light vehicles and heavy trucks. The Center assesses the potential benefits and driver acceptance of the integrated IVBSS technologies that warn drivers in crash-imminent situations and help to prevent such incidents.



Secretary LaHood met with regional leaders of the U.S. Department of Transportation in Cambridge, Massachusetts. Participants, from left to right: Richard Bates, FMCSA Regional Administrator; Helen Blackman, Office of Civil Rights; Les Fiorenzo, FRA Regional Administrator; Peter Appel, RITA Administrator; Ray LaHood, U.S. Secretary of Transportation; Dr. Richard John, Volpe Director Emeritus and Acting Director; Richard Doyle, FTA Regional Administrator; Philip Weiser, NHTSA Regional Administrator; Lucy Garliauskas, FHWA Massachusetts Division Administrator. (Photo by Linda Haas Photography)



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Volpe Center Highlights

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