

VOLPE HIGHLIGHTS

Volpe Broadens International Collaboration

The Volpe Center continues to increase its collaborations with other nations in areas such as air traffic control; communications, navigation and surveillance; high-speed rail; and Intelligent Transportation Systems (ITS). In September alone, the Volpe Center in support of our sponsors, engaged with several key international stakeholders on a number of critical transportation and logistics issues:



Volpe Center Photo

Mexican Navy personnel assisted a team of Volpe engineers on a recent trip to install ten AIS Base Stations on the Gulf Coast of Mexico. Volpe staff members Brendon Providence and Charles McCarthy with CABO Roberto Brisenu (on tower).

Civil Aviation Administration of China and U.S.-China Transport Forum: The Center hosted a delegation from the Civil Aviation Administration of the China Air Traffic Management Bureau Meteorology Department to discuss Integrated Terminal Weather System and Runway Visual Range programs. Later in the month, the Center also hosted the U.S.-China Transport Forum on rail transportation and safety assurance where topics for discussion included high-speed vehicle track interaction, crashworthiness and environmentally sensitive and energy efficient locomotives.

Japanese Transportation Researchers: Volpe Center rail experts attended a meeting with the Federal Railroad Administration and Japanese railroad representatives from the Japanese Ministry of Land, Infrastruc-

story continued on page 3

In this issue

- 1 Volpe Broadens International Collaboration
- 1 U.S. DOT to Host Major ITS Vehicle Safety Research Conference
- 2 Volpe Center CAFE Team Recognized for Regulatory Impact Analysis
- 2 Volpe Experts Present on Use of Flight Simulators and Wake Vortex
- 3 Five New IT Support Contracts Awarded
- 4 40th Anniversary Open House on October 15
- 4 Feds Feed Families Campaign Contributes to Local Food Banks

U.S. DOT to Host Major ITS Vehicle Safety Research Conference

On October 20, the U.S. Department of Transportation is hosting a public meeting to present results from the Integrated Vehicle-Based Safety Systems (IVBSS) field operational test. The IVBSS program, a key component of ITS safety-related activities, is a five-year cooperative research effort that combines several in-vehicle crash warning subsystems -- including forward collision, lane departure, lane change, and curve speed warning -- into a single, integrated concept to enhance the safety of both passenger vehicles and heavy trucks. Field tests were recently completed and the resulting reports are being finalized. A growing number of vehicle models incorporating safety features such as these evaluated in the IVBSS program will be on sale in the future. The Volpe Center provided technical support to NHTSA during the entire five-years of the project, and is currently finalizing an independent evaluation of the program and its results.

IVBSS is a Government-industry-academia partnership led by NHTSA on behalf of the U.S. DOT and funded by the Research and Innovative Technology Administration Intelligent Transportation Systems Joint Program Office. Other U.S. DOT team members include the Federal Motor Carrier Safety Administration and the Volpe Center. The University of Michigan Transportation Research Institute was the lead industry partner, joined by Visteon, Eaton, Honda R&D Americas, Takata Corporation, International Truck and Engine, the Battelle Memorial Institute, Michigan DOT and Con-way Freight.



Logo courtesy of NHTSA

Additional information and all current reports are also available at the [IVBSS Program](#) web site. [Registration instructions and additional information](#) on the meeting can also be found online, with a registration deadline of October 15.

Volpe Center CAFE Team Recognized for Regulatory Impact Analysis

A multidisciplinary Volpe Center team provided extensive analytical support for a major regulatory impact analysis (RIA) that was recently recognized as the best produced by the Federal government in 2008. The Mercatus Center at George Mason University uses a "Regulatory Report Card" to review RIAs for major Federal regulations and assigns each team a score addressing the RIA's openness, analytical quality, and impact on decisions in the proposed rule.

After reviewing fifty-four RIAs, the Mercatus Center concluded that "the best analysis of the year was for the U.S. DOT's Corporate Average Fuel Economy (CAFE) regulation." One reason for the Center's high standing was that it developed the CAFE Compliance & Effects Modeling System to estimate many of the regulation's effects in each analysis. The Volpe Center provides extensive support to the National Highway Traffic Safety Administration (NHTSA) in the planning, implementation, and documentation of each RIA for the CAFE program.



Volpe Center Photo

The Volpe Center CAFE Team with Director Robert Johns (left) included (left to right) Don Pickrell, PhD, Volpe Center's Chief Economist; Kevin Green, Division Chief for Energy Technology; John Van Schalkywk, Ryan Harrington and Mark Shaulov, Energy Technology Division; and Joseph Mergel, Economics and Industry Analysis Division (not pictured).

Volpe Experts Present on Use of Flight Simulators and Wake Vortex

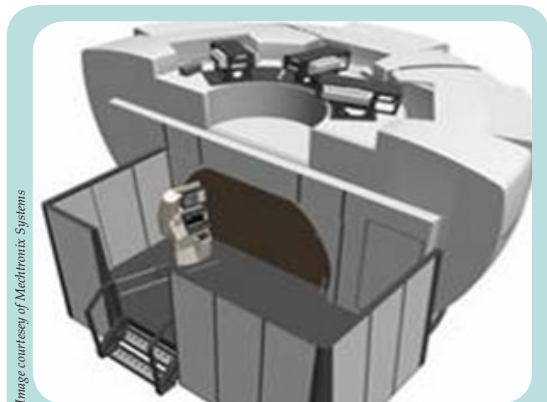


Image courtesy of Mechatronics Systems

A Volpe Center study, carried on behalf of the FAA, compared the training effectiveness of a Full Flight Trainer with seat motion only (pictured above) versus a Full Flight Simulator with hexapod motion.

The American Institute of Aeronautics and Astronautics (AIAA) hosted five conferences in Toronto, Canada last month. The topics of Atmospheric Flight Mechanics (AFM), Astrodynamics Specialists (AS), Atmospheric and Space Environments (ASE), Global Navigation and Control (GNC) and Modeling and Simulation Technologies (MST) brought together aviation and aerospace professionals from government, academia, and industry worldwide to present and discuss the latest research.

Volpe Center technical staff were key participants on several fronts. Judith Bürki-Cohen, PhD and Andrea Sparko of the Human Factors Research and Systems Application Center of Innovation contributed to the MST and GNC conferences on topics related to the use of flight simulators in realistic situations to train pilots and air crew members. At the GNC conference, Dr. Bürki-Cohen presented a paper, "Technical Challenges of Upset Recovery Training: Simulating the Element of Surprise." The paper addressed training goals and strategies for loss of control (LOC) situations, focusing on the ability of ground-based Flight Simulation Training Devices to simulate situations in which flight crews may be too distracted to notice the potential for LOC as well as the confusion and

panic associated with LOC in real world situations. Dr. Bürki-Cohen also co-chaired a MST conference session on Aircraft Loss of Control III: Upset Simulation and Training.

Ms. Sparko chaired a MST session titled Perception and Cueing and presented a paper titled "Transfer of Training from a Full-Flight Simulator vs. a High-Level Flight-Training Device with a Dynamic Seat." This paper summarized the results of the latest of a series of related Volpe Center studies and was co-authored by Dr. Bürki-Cohen and Dr. Tiauw Go from Nanyang Technological University in Singapore.

Frank Wang, PhD and Hadi Wassaf, PhD delivered a presentation on "Inferring Aircraft Wake Vortex Circulation from Survival Probability Using a Data-Driven Probabilistic Inverse Model." They also submitted a paper "Duality of Circulation Decay Statistics and Survival Probability" to the AFM Conference. Both attended the ASE Conference, which covered issues of aircraft icing, aircraft wake vortex technology, atmospheric dynamics, aviation weather information, aviation capacity and efficiency, meteorological applications to aerospace operations, and satellite and ground based measurement systems.

Five New IT Support Contracts Awarded

In order to respond effectively to the constantly shifting transportation-related requirements of our sponsors, the Volpe Center relies on contractor support to augment its in-house information technology (IT) expertise and staff. In early September, the Volpe Center awarded the five multiple award task order contracts for Volpe-Transportation Information Project Support (V-TRIPS) (see box at right). The total estimated value of these contracts over the five year award period is \$234 million.

These five companies demonstrated capabilities and experience related to existing technologies and methodologies that address current transportation systems issues, as well as cutting edge technologies and methodologies that show promise in transforming the future of the transportation systems enterprise. These contractors bring a strong knowledge of and experience in transportation systems and functions in the IT work requirement areas of: (1) System Analysis, Development, Operations and Maintenance, Deployment, and Field Support; (2) System Architectures and Framework; (3) Facility and Operations Support; (4) Information System Security; and (5) Technology Assessments and Modernization. It is anticipated that the first task orders under the new V-TRIPS contracts will be issued in January 2011.

V-TRIPS Awards

Abacus Technology Corporation
Chevy Chase, MD

Computer Sciences Corporation
Lanham, MD

L-3 Services, Inc.
Reston, VA

Qinetiq NA, Inc.
Waltham, MA

Stinger Ghaffarian Technologies, Inc.
Greenbelt, MD

Volpe Broadens International Collaboration (continued from p.1)

ture, and Transportation (MLIT), Kawasaki Heavy Industries, Nippon Sharyo, and the Mitsubishi Research Institute and to review standards for railcar crashworthiness. Means of avoiding and mitigating potential accident scenarios in high-speed passenger rail service and potential modifications to Shinkansen-based equipment for application in the U.S. were discussed. As a result, MLIT, Kawasaki, and Nippon Sharyo will participate in the Engineering Task Force (ETF) and help develop engineering requirements for high-speed passenger equipment operated in the U.S. at speeds above 150 mph. The ETF is associated with the Railroad Safety Advisory Committee and is led by the Federal Railroad Administration with technical support from the Volpe Center.

UK Ministry of Defence: Officials from the U.K. Ministry of Defence visited the Center for a technical review of the Remote Access Management Portal (RAMP) aviation logistics project the Center is implementing for the Royal Air Force in the U.K.

Korean Rail Research Institute (KRRRI): The Center hosted officials from the KRRRI and the Korean Ministry of Land, Transport and Maritime Affairs to discuss current rail research topics at both Centers and explore possible collaborations on rail research.



From left to right: Stephen Popkin, PhD Director of the Human Factors Research and System Applications; Bill Lyons; Anne Aylward, Deputy Associate Administrator of Research, Innovation, and Technology; Hans van Saan from the Dutch Ministry of Transport's Center for Transport and Navigation and Pex Langenberg, the Transport Counselor at the Royal Netherlands Embassy in Washington, D.C.

The Royal Netherlands Embassy and Dutch Ministry of Transport: The Center hosted a visit from the Transport Attaché at the Royal Netherlands Embassy and the Dutch Ministry of Transport's Center for Transport and Navigation (DVS). The Volpe Center and DVS have an Agreement for Collaboration that includes numerous topics of mutual interest, including Climate Change and Energy, Intelligent Transportation Systems, and Human Factors and Safety.

SEMAR (Mexican Navy): Volpe Center staff, in support of the U.S. Navy NorthCom and in collaboration with SEMAR, recently installed ten Automatic Identification System sites along the Gulf Coast of Mexico. The newly available data enhances Mexican maritime domain awareness and has expanded the scope of the Volpe-developed Maritime Safety and Security Information System.

U.S. Naval Forces Africa: Volpe Center staff participated planning conferences in Tanzania and Gabon to assist Command U.S. Naval Forces Africa in implementing their African Partnership Station (APS) initiative. APS seeks to build the skills, expertise, and professionalism of African military organizations, Coast Guards and mariners.

40th Anniversary Open House on October 15

In commemoration of our forty years of service to the transportation community and the nation, and of our role as an anchor tenant in the Kendall Square research and technology community, the Volpe Center will host an Open House on October 15. Colleagues and neighbors are invited from 1 – 3 pm to visit and understand how the Volpe Center’s innovations are at work within our Nation’s transportation system.

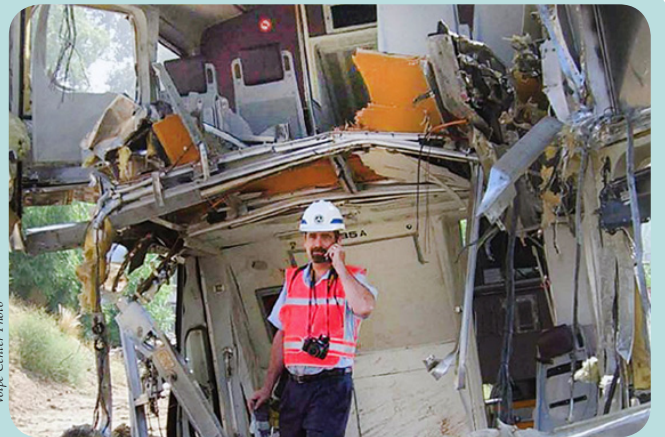
Our representative project showcase will include Global Maritime Domain Awareness, Mitigating the Environmental Impact of Aviation, and Human Factors Simulators.

For further information contact: [Alison Kruger, Strategic Outreach and Government Relations](#)



Volpe Center Photo

Listen through our custom headphones to see how the Volpe Center is collecting acoustics data to support pedestrian safety initiatives.



Volpe Center Photo

Speak with a collision investigator about how rail car design can protect passengers in the event of a collision. Check out improvements in the alloys and structures protecting today’s train passengers.

Feds Feed Families Campaign Contributes to Local Food Banks

Recently, Federal employees nationwide stepped up to collect nonperishable food items and other essentials following a shortage of supplies in food banks across the country. This summer, the Volpe Center community collected 860 pounds of food items in support of the second annual “Feds Feed Families” Campaign. Nationwide, the Federal campaign succeeded in collecting a total of 1.2 million pounds of food.

Volpe Center items were distributed locally to East End House, Food for Free, and the Margaret Fuller House.

The Volpe Center campaign was coordinated by Merle Kalenoski, Volpe Center Office of the Director; Effie Cho and Catherine Pinto, Volpe Center Human Resources; and Heidi Ortega, Federal Transit Administration.



Volpe Center Photo

Staff members Catherine Pinto and Heidi Ortega; Barbara Kibler and Jean Mike Remy of the Margaret Fuller House; Anne Aylward, Deputy Associate Administrator for Research, Innovation, and Technology; and Merle Kalenoski.

Volpe Center Information

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Visit the Volpe Center at: www.volpe.dot.gov

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