

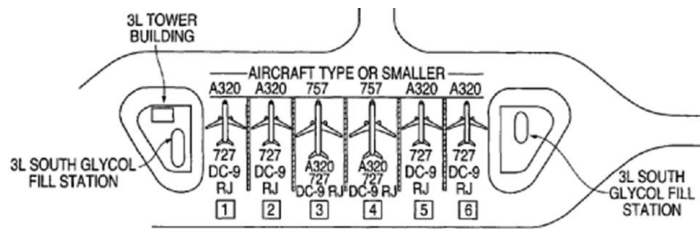
VOLPE HIGHLIGHTS

Volpe Center Deicing System Awarded U.S. Patent

After seven years of development and review, a patent for a deicing decision support tool was awarded to Jonathan Lee, PhD, of the Communication, Navigation and Surveillance and Traffic Management Systems Center of Innovation. This tool is being incorporated into a prototype Federal Aviation Administration (FAA) platform for operational trials at the nation's airports. In 2003, Lee was part of a Volpe Center team working to install a surface surveillance system at Detroit International Airport to gather one year's worth of aircraft surface movements data. At the suggestion of the sponsor, NASA Langley Research Center, Lee began exploring additional uses for this data.

Lee started to study the existing deicing system at Detroit for possible improvement, and developed a deicing decision support tool that takes account of the actual weather conditions, aircraft size and other aircraft in queue to schedule aircraft through the deicing pads in a faster,

Story continues on page 4



Schematic of Deicing Pad 3L, one of two at Detroit International Airport.

Image courtesy of Northwest Airlines

In this issue

- 1 U.S. Patent Awarded for Deicing
- 1 Ishihara to Lead Operations
- 2 FRA Taps Volpe on High Speed Rail
- 2 Human Factors Presenters at Aeronautics Conference
- 3 Climate Scenario Workshop Pilot
- 3 Advancing Transportation Security
- 4 Bright Idea in Government
- 4 Kniss Named John A. Volpe Intern

David Ishihara to Lead Volpe Center Operations

Research and Innovative Technology Administration (RITA) Administrator Peter H. Appel recently announced the selection of David Ishihara as the Volpe Center's new Deputy Associate Administrator for Operations. "Dave's significant record of achievement in a number of senior management roles positions him well to lead the Volpe Center's internal business activities and programs, which encompass human resources, acquisition, information technology, and real property and facilities management. His in-depth knowledge of the transportation field combined with his operations management experience provide an ideal skill set for understanding the operations issues facing the Volpe Center," said RITA Administrator Appel.

Ishihara reports to Associate Administrator and Director of the Volpe Center Robert Johns. "Dave brings an enthusiasm for public service, a strong interest in learning and innovation, a focus on people and relationships, and an excitement about the unique role of the Volpe Center," stated Mr. Johns.

Ishihara has nearly 20 years of experience in airport management and transportation security, starting as Assistant Airport Manager of the Portland, Maine, International Jetport. Most recently, Ishihara was Director of Aviation Operations for Massport at Logan Airport, the nineteenth largest airport in the U.S. There, he was responsible for all landside, terminal, and airside operations and managed over 360 employees.

Prior to joining Massport, he spent five years with the U.S. Department of Homeland Security's (DHS) Transportation Security Administration (TSA), where he was involved in the startup operations of this newly established agency. He received the Distinguished Federal Executive of the Year Award for his DHS work. Ishihara advanced to the position of Deputy Director in Boston, with more than 1,000 employees. Subsequently, he served as Director of the TSA in Hartford, Connecticut, with over 330 employees and an area of responsibility that included the entire State of Connecticut.

Ishihara also worked for three years as Civil Aviation Security Field Office Manager and Federal Security Manager with the U.S. Department of Transportation's Federal Aviation Administration in Boston. Ishihara holds a bachelor's degree in aviation management from the Florida Institute of Technology.



Volpe Center photo

David Ishihara, Deputy Associate Administrator for Operations

FRA Taps Volpe Expertise for National High Speed Rail Program

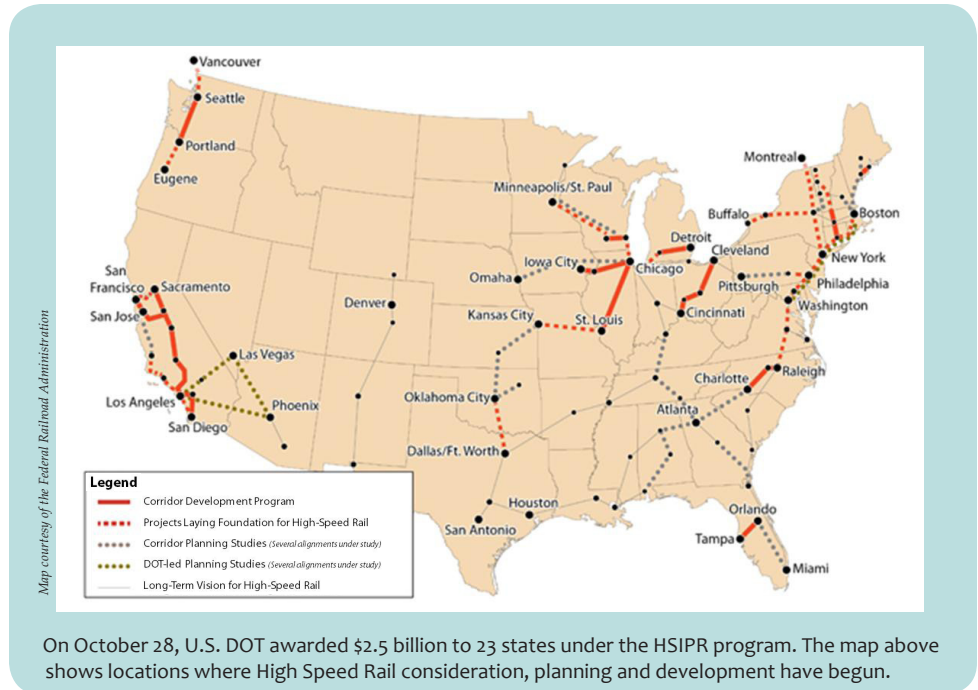
One of the earliest transportation initiatives of the Obama Administration was to use the American Recovery and Reinvestment Act (ARRA) of February 2009 to make significant investments in the nation's railroad system. The ARRA provided both \$1.3 billion for Amtrak to fund needed capital improvements; including physical infrastructure, railway equipment, fire life safety and security upgrades; and \$8 billion for a Federal program to develop High-Speed Intercity Passenger Rail (HSIPR) services nationwide. Managed by the Federal Railroad Administration (FRA), this was the first major attempt in more than a decade to improve HSR service in the U.S.

FRA turned to the Volpe Center for planning, analytical and engineering support. Volpe Center staff with relevant expertise – particularly from the Centers of Innovation for Multimodal Systems Research and Analysis, Physical Infrastructure Systems, and Advanced Vehicle and Information Network Systems – are working on a variety of HSIPR projects.

Volpe Center staff have visited numerous sites throughout Amtrak's passenger rail service network to provide technical oversight for the physical improvement projects. They have attended meetings with FRA, Amtrak and state and local high speed rail officials in Washington, D.C., California, Florida, Oregon, and other locations to explore potential projects that may receive ARRA funding.

They met with representatives from FRA and both public agencies and private rail companies from China, France, Germany, Japan and Korea to explore HSR topics such as safety regulations, infrastructure requirements and rail equipment standards. A number of Center experts recently served for several weeks on FRA panels to review the numerous requests for Federal HSR funding. These efforts led to the October 28 announcement by Secretary LaHood of an additional \$2.5 billion in HSIPR funding to 23 states for selected projects.

The Volpe team providing expertise to advance FRA HSIPR projects includes: Robert Adduci, Michael Carolan, Michael Coltman, Robert Dorer, Jeffrey Gordon, David Hyde, Karina Jacobsen, Patricia Llana, Brian Marquis, Ronald Mauri, Fred Mottley, Joseph Mergel, Michelle Muhlanger, Christopher Murray, Steven Peck, Kristine Severson-Greene, Andrew Shields, David Tyrell, and Leo Wetula.



Volpe Center Researchers Present on Human Factors in Aeronautics

Volpe Center researchers Dr. Divya Chandra, Dr. Scott Gabree, Danielle Eon and Andrew Kendra of the Human Factors Research and System Applications Center of Innovation recently presented their work at the International Conference on Human-Computer Information in Aeronautics, or HCI-Aero 2010, in Cape Canaveral, Florida. The Volpe Center, one of the event's eight Institutional Sponsors, attended in support of the Federal Aviation Administration. Dr. Chandra chaired the "Task Modeling" session and served as a member of the conference program committee. HCI-Aero 2010 provides industry, government and academic researchers the opportunity to share the latest results in the field of human factors and aviation computing systems research.

At this year's event, Volpe Center staff authors and co-authors presented [three different papers](#). Dr. Chandra and Mr. Kendra co-authored a paper, with Massachusetts Institute of Technology researchers Abhizna Butchibabu, Alan Midkiff, and John Hansman, entitled "Analysis of Safety Reports Involving Area Navigation and Required Navigation Performance Procedures." Dr. Gabree presented a paper, co-authored with the Volpe Center's Michelle Yeh, entitled "Common Human Factors Issues in the Design of Airport Surface Moving Maps." Ms. Eon presented a paper, co-authored with the Volpe Center's Stephanie Chase and Michelle Yeh, entitled "Mitigating Runway Incursions: A Safety Benefits Assessment of Airport Surface Moving Map Displays."

Transportation and Climate Change Planning: A New Paradigm

Numerous regions of scenic beauty and environmental significance - some of which include large areas of Federally-owned land - will be adversely affected by shifting weather patterns and impacts associated with climate change. To help develop long-term mitigation and adaptation strategies, the Volpe Center has been actively involved with a team of federal, regional and state stakeholders to integrate climate change considerations into existing and continuing transportation, land use, coastal zone, and hazard mitigation planning processes. Other participants include the sponsors - the Federal Highway Administration, the National Park Service and the U.S. Fish & Wildlife Service - along with the Environmental Protection Agency, the National Oceanographic and Atmospheric Administration, the Federal Transit Administration, the Federal Emergency Management Administration, and the Department of Defense.

As part of this effort, transportation, land use and coastal experts from the Cape Cod Commission and Federal, state and local agencies convened in the two-day *Interagency Transportation, Land Use, and Climate Change Pilot Project Scenario Planning Workshop* to develop a preferred scenario for climate change mitigation and adaptation affecting all of Cape Cod. This coastal region is comprised of 15 towns, the Cape Cod National Seashore, and the Monomoy National Wildlife refuge. The Volpe Center team - Benjamin Rasmussen, Carson Poe, David Perlman, Lindsey Morse, and Jeffrey Bryan - has been coordinating this interagency group and facilitated the workshop along with a scenario planning consultant as part of a pilot project designed to create a replicable model for climate change scenario planning. After the workshop, the Volpe Center will continue to coordinate with these stakeholders to develop action plans to integrate the preferred scenario developed at the meeting into Cape Cod local and regional planning processes.



Federal, state, regional, and local attendees at the Climate Change Pilot Project Scenario Planning Workshop discuss the placement of projected future development on Cape Cod.

Exploring New Technologies for Surface Transportation Security



San Diego Metropolitan Transit System staff and SWAT teams from local police participated in tests of remote bus-disabling systems.

The Volpe Center continues to assist the Department of Homeland Security (DHS) in applying new technologies and procedures to surface transportation security, having recently both completed and initiated multi-year programs with the agency. Three-year efforts for the Transportation Security Administration Office of Surface Transportation Security Technology studied alternatives for enhancing transit security. During the Analysis of Remote Bus Communication and Control Technologies project, for example, both satellite-based and cellular-based remote vehicle disabling systems were tested on San Diego Metropolitan Transit System buses with the participation of the El Cajon and La Mesa Police Department Special Weapons and Tactics (SWAT) teams. In both cases a realistic bus hijacking scenario was staged, and the effectiveness of both bus disabling systems was assessed.

For the DHS Science and Technology Directorate (S&T), a team led by William Baron, with Darryl Song and contractor support, conducted field

tests of Blast-Resistant Autonomous Video Equipment focusing on closed-circuit television cameras installed on passenger platforms, inside facilities and onboard vehicles at four transit agencies: North County Transit District in Oceanside, CA; Niagara Frontier Transportation Authority in Buffalo, NY; New Orleans Regional Transit Authority in Louisiana; and Spokane Transit Authority in Washington state. A similar team also deployed and periodically inspected the equipment and compiled a series of findings for DHS S&T regarding the functionality of the cameras, including feedback from the host transit agencies.

The Center has also launched a program for DHS S&T to apply explosive detection technologies to heavy and light rail transit system environments. Led by John Wojtowicz, Volpe Center staff Dawn Johnson, Charlie McCarthy, Robert Hoaglund, and Deirdre Morrissey, and student co-ops Nicole Levasseur and Edward Barrett will conduct site assessments of these operations nationwide to identify both the common as well as the unique environmental and operational characteristics of these systems. The results will be used to develop explosive detection equipment specifically designed for mass transit.

Harvard Recognizes "Bright Idea in Government" at The Volpe Center

The United Kingdom's Ministry of Defence (UK MOD) approached the Volpe Center's logistics experts with the following challenge: design an interim solution for real-time active management of MOD cargo operations worldwide, to bridge the gap between the shutdown of their old tracking system and the implementation of a new system. The intended replacement system was, at that point in time, inadequate and behind schedule. Volpe logistics system development experts designed a functional Interim Cargo Solution (ICS) system for the UK MOD within seven months.

The system has been operating so well that logisticians within the UK MOD are planning to use ICS as their main cargo solution until at least the second half of 2012. In addition to meeting performance goals, the Volpe Center team developed their solution for under USD 375,000, a fraction of the millions spent on the originally intended replacement system. The Volpe Centers team's solution was recently recognized by Harvard University's Kennedy School of Government as a "Bright Idea in Government." UK MOD sponsors are delighted by this honor, and have expressed that it "directly reflects the value we place upon the Volpe Center's contributions to the UK MOD."

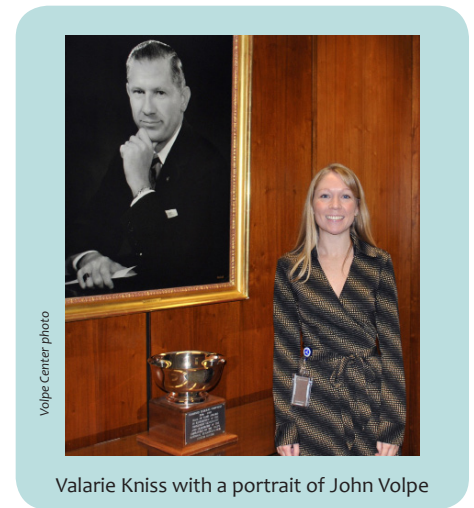
Selected as an exemplary model of government innovation by the Ash Center at the Harvard Kennedy School
2010 Bright Ideas in Government Initiative

For the **Interim Cargo Solution**, developed by the Volpe Center in support of the United Kingdom's Royal Air Force

Volpe Transportation Internship Awarded

Valarie Kniss of the Systems Engineering and Safety Division has been selected for the 2010-2011 John A. Volpe Transportation Internship. Ms. Kniss, who joined the Center in August 2010, is pursuing a Master's degree in Urban and Regional Policy from Northeastern University. After completing her Bachelor's degree in Civil Engineering with a focus on Structures from Pennsylvania State University in 2000, Ms. Kniss worked in the Boston area for Dewberry as a Structural Engineer (Buildings and Bridges) and for Jacobs Engineering as a Structural Engineer and Project Manager (Buildings).

Through the John A. Volpe Transportation Internship, the Volpe Center brings in the best and the brightest graduate students in the field of transportation, allowing them to gain experience and make a difference to the future of transportation. The program is for one to two years, during which interns work side by side with leaders and experts in the transportation field on both technical and policy projects.



Valarie Kniss with a portrait of John Volpe

For details, see our online brochure about the [John A. Volpe Transportation Internship](#).

U.S. Patent for Deicing System (cont.)



Dr. Jonathan Lee, Aircraft Deicing Patent Inventor

safer, and more efficient manner. Information on estimated time to complete deicing processing can be available in real time to pilots, air traffic controllers and the deicing station managers. The Volpe Center's Office of Chief Counsel suggested that Lee seek a patent for the new system and assign his rights to U.S. DOT. With the assistance of Center attorney Wendell Mah, Lee prepared a patent application.

In May 2010, Lee was awarded Patent No. 7,725,410 B2 for "Method, Apparatus and System for Aircraft Deicing and Estimating Deicing Completion Times" by the U.S. Patent and Trademark Office. The Volpe Center is currently incorporating the deicing system into a larger airport surface management prototype platform being developed for FAA. Field testing of the platform and deicing system will begin soon.

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

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