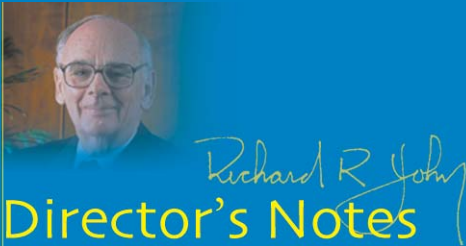




National Transportation Systems Center



## Managing Information to Improve Transportation

Knowledge empowers decision making. For those of us working in transportation, harnessing this power enables us to improve the safety, security, and capacity of the nation's transportation system. Volpe teams use our rich data resources to perform safety analyses, risk assessments, and cost/benefit analyses of transportation technologies and methods. Our analysts can identify safety hazards, accident causes and consequences, and remedial actions, and determine safety benefits, user acceptability, and economic viability.

*Continued on page 10*

## Inside

### Enhancing safe and efficient navigation of the St. Lawrence Seaway

Helping government organizations initiate **knowledge management** practices

Volpe's **expertise with Web sites and Web-based tools** benefits state and federal customers

Volpe's role in **USAF National Airspace Program** support is expanding

# HIGHLIGHTS

Cambridge, Massachusetts

Oct/Nov 2001

## Focus

### Safety in Numbers (BTS)

#### *Helping to Improve Transportation Safety with Data*

Reliable, accurate, timely data is a critical component of safety improvement efforts. Safety data analysis enables researchers to identify and anticipate where safety problems may arise. DOT's data programs must meet the needs of researchers, decision makers, and the interested public; the Bureau of Transportation Statistics (BTS) is working to provide DOT with a level of data quality sufficient to identify, quantify, and minimize the risk factors in U.S. travel. This level of quality is essential to fact-based management of transportation safety programs. But just as important is making transportation data accessible and understandable. The Volpe Center supports two major projects that will help the BTS achieve its goal of improving data quality and dissemination across modes: the Safety Data Action Plan (SDAP) and the Intermodal Transportation Data Base (ITDB).



*Transportation fatalities are the third leading cause of premature death in the U.S. (behind heart disease and cancer). To help prevent injuries and deaths, BTS is working to improve DOT's practices for collecting, analyzing, and applying safety data. BTS supplements the data collection programs of other agencies and serves as the lead agency in developing and coordinating intermodal transportation statistics. The Volpe Center is playing an important role in two major BTS programs that will help improve safety across all modes.*

## Developing Data Standards and Expanding Research: the SDAP

DOT has a large number of safety databases; however, a preliminary BTS review revealed data gaps and quality issues. So in 1999 and 2000, BTS sponsored a series of workshops and a conference to identify a body of common problems across DOT safety data. The result, the Safety Data Action Plan, recommended ten cross-modal projects to address safety data issues. Since May 2001, the Center has been assisting the BTS in developing plans, processes, procedures, training, and systems that will enable BTS to fully implement the SDAP. Specifically, the Volpe team, led by Project Manager Ann DiMare of the Aviation Safety Division, has supported the Office of Statistical Quality by participating in working groups that are developing implementation plans for the projects, and collecting background/baseline information for each of the working groups. Every group consists of a representative from each modal agency, BTS, the Volpe Center, and a contractor such as the National Safety Council or Johns Hopkins University.

The Volpe SDAP team typifies the Center's cross-modal, multidisciplinary approach. The team provides expertise in engineering, operations research, all transportation modes, and legal issues, and combines institutional memory with knowledge of current trends and technologies. In all, Volpe team members have researched, written, and submitted nine reports. Six examples are discussed here. Mr. Joseph Koziol of the Technology Applications and Deployment Division wrote a background report on research projects in technology for data collection by DOT modal agencies. It lists current practices for data collection across modes, and surveys ongoing research projects on the use of event recorders and new technologies as means for improving the data collection process. The document was used as resource material by the working group for Project 9, which explores options for using technology in data collection.

Ms. Judy Schwenk of the Service Assessment Division submitted background materials for two projects assigned to her working group. The first is a meta-database of studies related to research in accident precursors in transportation modes, which supports Project 6. A report on voluntary safety reporting systems in transportation and other industries supports a project to expand the collection of near-miss data from the FAA to all other modes (Project 7).

Mr. Larry Berk, Aviation Safety Division, delivered a comprehensive report in support of the working group responsible for Project 3, Develop Common Denominators for Safety Measures. His report

## The Ten SDAP Research Projects

Volpe was chosen to assist in planning the implementation of these projects because of the Center's multimodal expertise, broad experience, and collaborative culture. The Safety Data Action Plan projects are organized in four broad categories.

### Improving the quality, comparability, and timeliness of existing data

1. Re-engineer data programs
2. Develop common criteria for reporting injuries and death
3. Develop common denominators for safety measures
4. Advance the timeliness of safety data

### Collecting better data on accident circumstances, precursors, and leading indicators

5. Develop common data on accident circumstances
6. Develop better data on accident precursors or leading indicators
7. Expand the collection of "near-miss" data to all modes

### Expanding the use of technology in data capture

8. Link safety data to other data
9. Explore options for using technology in data collection

### Improving analytical capability

10. Expand, improve, and coordinate safety data analysis

describes, across DOT modal agencies, details of survey and sampling methods used for published denominators (e.g., annual million vehicle-miles traveled). The background work required a thorough review and understanding of relevant regulations, survey methods, and the mathematics. This report was particularly challenging because the working group required thorough yet concise explanations of the mathematics behind sample designs, computing denominators, and validating published statistics. Mr. Berk also wrote reports for Projects 2 and 5.

Other Volpe team members that made significant contributions include Dr. James Hallock, Chief of the Aviation Safety Division, Dr. Alex Blumensteil and Mr. John Sigona of the Aviation Safety Division, and Mr. Jerry Powers of the Infrastructure Protection and Operations Division.

All draft implementation plans are complete; Volpe work will continue through 2001 as plans are finalized. In 2002, SDAP projects will be prioritized for implementation.

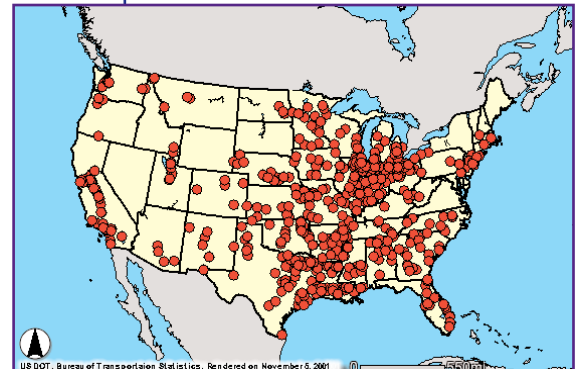
### **Making Data Available: The Intermodal Transportation Data Base**

BTS is developing a Web-based, intermodal transportation database (ITDB), a repository for all relevant statistical data that will be available for government and public use. The ITDB, currently under development, already provides a one-stop gateway to a broad collection of relevant transportation information that has been collected by various agencies within DOT as well as other federal agencies, such as the U.S. Bureau of the Census. The goal is to include all the major data sets within DOT, as well as a variety of demographic, economic, and social data, to enable wide-ranging analyses.

Since May 2001, the Volpe Center has been supporting the BTS Office of Information Technology in the ITDB effort. Volpe's role includes developing work plans, participating in working groups, and compiling and analyzing information. In particular, BTS has asked the Volpe Center to develop a meta-data repository tool for the ITDB that will enable users to find, manage, and use the component databases. The ITDB is expected to evolve and expand significantly over the next few years to include 100 or more databases; the meta-data repository tool will be an important aid for users in locating databases of interest. A System Requirements Document for the meta-data repository tool is scheduled for delivery to BTS in January 2002. Mr. John Sigona of the Aviation Safety Division leads the Volpe team supporting the meta-data repository effort; he receives significant support from Dr. Hallock and Ms. DiMare. Also providing support are Jan Popiel, Bob Douch, Jim Parinella, and Bill Pelletier of Computer Sciences Corporation, a Volpe contractor.

#### **Developing Data Standards**

*Standardizing items such as terms, thresholds, and accident precursors is critical to developing usable data that is consistent across modes. This is particularly important when data are made available to the public.*



*The ITDB Mapping Center provides applications that may be used to geographically analyze the data in the ITDB. For example, fatal and non-fatal grade crossing accidents can be mapped for any time period from 1995 through 1999. From the map, detailed accidents reports can be viewed, and users may aggregate and map the number of accidents by state or county. This map shows fatal grade crossing accidents from 1/1/98 to 12/31/99.*



**Promoting Knowledge Management in Government (DON, FAA)**

The Operations Assessment Division is supporting a number of sponsors in the area of knowledge management (KM). KM involves developing practices that support the generation and dissemination of knowledge within an organization. Volpe is supporting the Department of the Navy (DON) Deputy Chief Information Officer for Enterprise Integration in developing guidelines on how to measure the performance of KM initiatives and to develop a starter kit for Navy communities of practice. As part of this effort, Dr. James L. Poage of the Division participated in the DON Knowledge Management Community of Practice (KMCoP) meeting in Washington, D.C., on August 26, 2001. The KMCoP meets periodically to enhance the formation of communities of practice – communities of geographically and organizationally dispersed persons who have similar job functions or deal with similar issues and share knowledge related to these functions or issues. This meeting focused on content management, which provides processes for participants in a community of practice to find, capture, validate, and retrieve information.

In support of the FAA’s Office of Aviation Research (AAR), the Volpe Center is developing a performance metric structure and a strategic planning process to relate the FAA research and development (R&D) projects to FAA and DOT goals. Associated to this effort, AAR requested that Dr. Poage conduct a workshop to introduce knowledge management to AAR. This workshop, conducted in Washington, D.C., on August 27, 2001, addressed a number of areas, including: what KM is and why private and public sector organizations are undertaking KM initiatives; examples of KM activities; basic principles of KM; examples of KM from the federal government and industry; and comments on KM for FAA R&D activities. Following this workshop, Dr. Poage was asked to conduct a follow-on session to further explore the use of KM for R&D activities.

On October 31, 2001, Dr. Poage participated in an educational symposium on KM with the Philadelphia Federal Executive Board, where he described the Volpe Center’s KM-related support to various federal agencies. Other federal agencies explaining their KM experiences included the General Services Administration, the FAA, and the Federal Energy Regulatory Commission. Dr. Poage’s presentation covered basic principles of KM, examples of KM from the federal government and industry, and applying KM to federal government activities.

**Volpe’s Approach to Knowledge Management**

The Volpe Center’s approach to applying KM can help improve an organization’s performance through increased productivity, quality, responsiveness, and innovation. The approach:

- Treats people’s knowledge as an asset, yet recognizes the intangibles in an organization that affect the generation and sharing of knowledge.
- Emphasizes requirements for promoting knowledge creation and sharing to enhance decision making, business processes, and communication.
- Addresses not only typical KM initiatives that are overlaid on the organization, such as communities of practice or Web portals, but also the integration of KM with business processes. KM becomes part of the fabric of the organization.

Volpe-authored articles on this approach have appeared in several publications, including *Knowledge Management* magazine and *Knowledge Directions*, the journal of the IBM Institute for Knowledge Management.

### ***Conducting NASPAS Training (FAA)***

The Volpe Center recently co-hosted a training event for the Federal Aviation Administration's (FAA) National Airspace System Performance Analysis System (NASPAS). NASPAS is used to: track air traffic control facilities and service performance, analyze facility outages, compare performance of specific facilities with national averages, and identify equipment problems. The system is employed throughout the FAA including headquarters, all nine regions, the William J. Hughes Technical Center, and the National Airway Engineering Field Support Sector.

Ms. Jean Woods of the Operations Assessment Division collaborated with Ms. Danielle Adams from the FAA's NAS Quality Assurance and Performance Division to host and conduct two 1-week training classes in September 2001. The training was held at the Volpe Center and attended by the NASPAS regional contacts, who gained hands-on experience with the analysis tool.

This work is part of the Volpe Center's long-standing support to the FAA's Airway Facilities organization that is responsible for maintenance of the nation's air traffic control system. NASPAS, developed and supported by the Volpe Center, was deployed to the FAA in the 1980s and has undergone various enhancements to meet user needs.

### ***Studying Transportation-Related Web Sites (USTRANSCOM)***

The mission of the U.S. Transportation Command (USTRANSCOM) is to provide air, land, and sea transportation for the Department of Defense (DoD) in peace and in war. As the single manager of defense transportation, USTRANSCOM provides a global transportation planning and execution system supported by a communications and computer network. USTRANSCOM seeks to benefit from the transportation industry's progress toward total integration of information for intermodal management and tracking of vehicles and cargo, and to integrate it with the military transportation capability.

In support of this goal, the Volpe Center's Intermodal Logistics Systems Planning and Integration Division reviewed and documented more than 200 transportation-oriented Web sites and prepared a series of recommendations relevant to systems operated by USTRANSCOM. Volpe recommendations addressed the effect of these industry Web sites on several USTRANSCOM freight management systems, including the Global Transportation Network, and on the design of a planned business-to-business portal at USTRANSCOM.

*Volpe developed, supports, and continues to enhance the FAA's National Airspace System Performance Analysis System.*

On September 20, 2001, Mr. Kenneth Troup and Mr. Thomas Robillard of the Division presented the final briefing on the review to the USTRANSCOM Command, Control, Communications, and Computers Directorate at Scott Air Force Base, Illinois. That report, along with the report of recommendations and the final briefing slides, has been distributed to TRANSCOM on CD-ROM and will be available to other government agencies as well. Ms. Nancy Cooney, Mr. Edward Recka, and Ms. Sarah Noble, all of the Division, were also project team members for the study.



#### ***E-Commerce Web Site Evaluation (State of Maryland)***

The State of Maryland is recognized as a champion of e-business. The Volpe Center is recognized as a leader in transportation as well as in the design, development, and operation of successful public-private Web sites. Under an interagency agreement between the state and the Center, the Economic Analysis Division completed a conceptual review and evaluation of a prototype Web site designed to encourage and facilitate use of Maryland-based intermodal facilities by shippers, carriers, forwarders, and storage facility providers. The Volpe team, which consists of Mr. Don Wright and Mr. Douglas Rickenback of the Division and Dennis Piccolo of EG&G Technical Services, Inc. (a Volpe contractor), submitted a report of its findings on October 5, 2001.

The Web site, "Maryland - Supply Chain Information System," is a key component of the state's e-Maryland legislative initiative. It was designed by the University of Maryland's Supply Chain Management Center at the Robert H. Smith School of Business with support from Manugistics Corporation.

*The State of Maryland asked Volpe to evaluate a prototype Web site integral to its high-profile "e-Maryland" legislative initiative.*



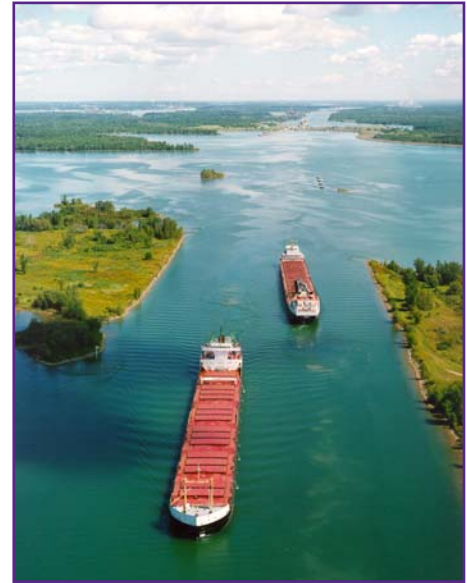
**Tracking Vessels on the Saint Lawrence Seaway (SLSDC)**

In support of the Saint Lawrence Seaway Development Corporation (SLSDC), the Volpe Center is engaged in a project to develop and implement a new vessel traffic management system that will identify and track all commercial vessels on the Seaway. The network, which will be based on the automatic identification system (AIS) technology, will also enable the automated dissemination of waterway status information to transiting vessels. Volpe is responsible for the design and implementation of the AIS-based system.

As part of this effort, Messieurs Kam Chin, Daniel Nim, and Bryan Long of the Center for Navigation participated in a field test on the Saint Lawrence Seaway from September 17 to 21, 2001. The test was the second phase of a three-phase program to measure signal coverage for the traffic management system. Data recording equipment was installed on transiting vessels to determine the coverage area between shore stations in Orleans, New York, and Iroquois, Ontario. Test data will be analyzed to determine the number and location of base stations that will be required for an operational system that will extend from Montreal to Eastern Lake Erie.

On a related matter, Mr. Chin attended a meeting of the Advanced Technology for Navigation and Safety Committee, a joint U.S. – Canadian advisory group. The major focus of this meeting was to strengthen the resolve of U.S. and Canadian agencies to have an interoperable AIS system. A strategy for the implementation of AIS technology on the waterway system was discussed.

In addition, on September 19, 2001, the Volpe team participated in a meeting with the Canadian Coast Guard to discuss strategies for information sharing among agencies and to review the current status of the Seaway AIS network implementation.



*The Center for Navigation is helping to develop a comprehensive vessel communications network for the U.S. and Canadian Saint Lawrence Seaway agencies.*



*The U.S. and Canadian Seaway agencies operate the Seaway's locks and channel. Joint operations to support this binational system include developing the AIS-based traffic control system so that transiting vessels can operate a single transponder to safely navigate throughout the entire Great Lakes – Saint Lawrence Seaway complex.*



### ***Volpe Publishes First Monthly Environmental Streamlining Newsletter (FHWA)***

Environmental streamlining is the term used for a new, cooperative way of doing business that integrates the timely delivery of transportation projects with the protection and enhancement of the environment. It was first enacted into legislation for highway and transit projects with the Transportation Equity Act for the 21st Century (TEA-21). In support of the Federal Highway Administration's (FHWA) efforts to effectively implement streamlining, the Volpe Center is preparing a monthly newsletter, "Successes in Streamlining," for the FHWA Office of National Environmental Policy Act (NEPA) Facilitation. Each edition highlights a transportation project or process that uses successful environmental streamlining practices. Ms. Sara McKinstry, Ms. Cynthia Maloney, Ms. Cassandra Callaway, and Mr. Jonah Soolman of the Economic Analysis Division recently published the first installment of the newsletter.

The first issue featured the Pennsylvania State Route (SR) 119 Improvement Project and the state's effort to streamline their Environmental Impact Statement (EIS) process. This project has been recognized nationally for environmental streamlining excellence. It demonstrates how early agency coordination and creative use of technology can engage the public and yield better environmental results in less time than normal. Completing an EIS in Pennsylvania can take 6 to 10 years and can result in an EIS comparable in length to a telephone book. The SR-119 project team completed their EIS for widening SR-119 South in just 22 months and 172 pages. Best practices from the project are the following:

- Creative use of technology turned what could have been a tedious and bureaucratic EIS into an educational document. An easy-to-understand companion CD-ROM with reader-friendly graphics provided the community and resource agencies with the information they needed to review permits and make decisions.
- Under a revised NEPA coordination process, early and continued input from resource agencies, monthly interagency meetings, and concurrent electronic review accelerated the NEPA process while avoiding and mitigating environmental impacts.

*A new Web-based newsletter makes best practices for environmental streamlining easily accessible to the public as well as to government agencies.*



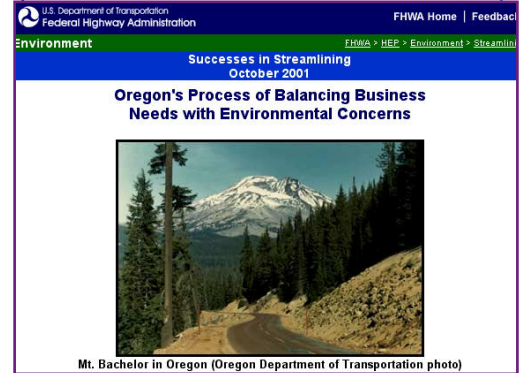
- Enlisting a community advisory council of local citizens and businesses allowed the community to become part of the solution. As a result, bike/pedestrian trails and a Park & Ride facility were added to the project design.
- Pennsylvania has used its environmental streamlining experience and its participation in the Mid-Atlantic Transportation and Environment Streamlining Task Force to help develop regional environmental streamlining approaches.

The newsletter is primarily distributed via the Internet to approximately 400 contacts from various agencies, including the FHWA, Federal Transit Administration, U.S. Army Corps of Engineers, Environmental Protection Agency, Fish and Wildlife Service, National Marine Fisheries Service, Forest Service, Advisory Council on Historic Preservation, the Council on Environmental Quality, national associations, and Congressional staff. Subscribers are notified electronically of each issue, which is available at <http://www.fhwa.dot.gov/environment/streamling/index.htm>. The September edition highlighted Indiana's Streamlined Environmental Impact Procedures, the October issue featured Oregon's Collaborative Environmental and Transportation Agreement for Streamlining, and the November issue features Michigan's Process for Streamlining State Delegated Section 404 Permitting.



### ***Supporting the National Airspace Program (USAF)***

The U.S. Air Force (USAF) Electronic Systems Center National Airspace System (NAS) Program Office has the responsibility for the Department of Defense (DoD) in the implementation of NAS. The Volpe Center is providing Engineering, Integration, and Installation (EI&I) support to this implementation effort, specifically to four major DoD acquisitions: the DoD Advanced Automation System; the Voice Communications Switching System; the Digital Voice Recording System; and the Digital Airport Surveillance Radar. The work involves site surveys and site preparation at up to 60 USAF bases worldwide, and includes supporting the preparation for the installation and cutover of these systems as well as the possible modifications required to the facility infrastructure, such as power, heating/ventilation/air conditioning, floor space, and cable management.



*The October issue of FHWA's on-line environmental streamlining newsletter featured Oregon's Collaborative Environmental and Transportation Agreement for Streamlining.*

*Volpe's EI&I support to the USAF's National Airspace Program is expanding.*

Recently, the NAS program office asked the Center to take on a larger EI&I role for the DoD Advanced Automation System. In addition, Mr. Mike Egan and Mr. Phil King of the Airport Surface Division have been designated by the NAS program office as project leads, or Single Points of Contact (SPOC).

Mr. Steve Bessette, Mr. Michael Egan, and Mr. Philip King, Airport Surface Division, traveled to Eglin Air Force Base, Fort Walton Beach, Florida, the week of October 1, 2001, to attend an informational meeting for the SPOC duties to be undertaken for the NAS Program. These duties will include representing the Electronic Systems Center at Air Force bases worldwide for the implementation and integration of the NAS systems.

## Papers & Presentations

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- In support of the Federal Motor Carrier Safety Administration's (FMCSA) Office of Data Analysis and Information Systems, in September 2001, the Volpe Center's Economic Analysis Division completed the report, "FMCSA Safety Program Performance Measures – Compliance Review Impact Assessment Model." This report documents the methodology and results from an improved model to measure the effectiveness of the compliance review program, one of the FMCSA's key safety programs. Under the technical management of Mr. Donald Wright, the report was written by Mr. Jon Ohman, of the Division, with assistance from Mr. David Madsen of the Division, Mr. Leon Parkin of EG&G Technical Services, Inc. (a Volpe contractor), and Dr. Thomas M. Corsi of the University of Maryland.
- In September 2001, the Volpe Center Highway-Rail Grade Crossing Safety Research Team transmitted a four-volume report to the Federal Railroad Administration (FRA) Office of Research and Development describing advanced signaling and control, obstruction detection, warning device, and barrier system technologies, designed to improve safety at high-speed rail grade crossings, both in the United States and internationally.

### Director's Notes

*Continued from page 1*

The value of information is vastly multiplied when it is shared, and today, Internet data-delivery systems are essential to such sharing. The Volpe Center is in the forefront of the design, development, and operation of Web sites and Web-based tools.

For example, Volpe database specialists have developed safety performance monitoring systems that monitor carriers for performance measures using a variety of parameters and call attention to any deviations from normal patterns. Volpe-developed systems are used by the Department of Defense and Federal Aviation Administration, which monitor air carriers through the Safety Performance Analysis System, and by the Federal Motor Carrier Safety Administration, which uses SafeStat to monitor motor carriers and provide results on line via its Web site.

This issue of *Highlights* presents some of the work we're doing at the Volpe Center to advance the development and sharing of information. Although these projects range widely in topic and scope, they all in some way support informed decision making, which requires reliable, accurate, easily accessible and understandable information. They address our sponsors' needs to collect, analyze, and/or disseminate information. Researchers need high-quality data systems to develop useful solutions; pilots depend on navigation and surveillance systems to transmit information

*Continued on page 12*

## Papers & Presentations

- Dr. Paul Valihura of the Environmental Engineering Division delivered the report “Benefits of a Programmatic NEPA Document” to William C. Withycombe, Regional Administrator, and Barry Brayer, Manager, Executive Resource Staff, FAA Western Pacific Region, and to Howard Nesbitt, FAA Headquarters in Washington, D.C., on August 8, 2001. The FAA and National Park Service will use this document in their decision process to successfully implement the Air Tour Management Plan Program.
- Mr. Adrian Hellman of the Railroad Systems Division attended a California Public Utilities Commission Railroad Grade Crossings Meeting during the week of August 13, 2001, in San Diego, California. Mr. Hellman presented, “School Street Four-Quadrant Gate In-Cab/At Grade Crossing: Preliminary Evaluation” at the Intelligent Transportation Systems Workshop. The School Street Grade Crossing, located in Groton, Connecticut, was the demonstration site for four-quadrant gate technology along Amtrak’s Northeast High-Speed Rail Corridor. Additionally, this new technology includes an inductive loop obstruction detection subsystem that interfaces with Amtrak’s in-cab signaling system. This research was funded by the FRA Office of Research and Development.
- From August 27 to 30, 2001, Mr. Gregg Fleming and Dr. Judith Rochat of the Environmental Measurement and Modeling Division visited The Hague, The Netherlands, to participate in the Thirtieth International Congress and Exposition on Noise Control Engineering (Internoise 2001). Mr. Fleming presented the paper “Lateral Attenuation of Aircraft Sound Levels Over an Acoustically Hard Water Surface: Logan Airport Study.” Dr. Rochat presented the paper “Observations of Highway Traffic Noise Measurements Behind Barriers and Comparisons to FHWA’s [Federal Highway Administration] Traffic Noise Model.”
- In support of the U.S. Coast Guard Research and Development Center’s Marine Environmental Program, Mr. Michael Dyer of the Technology Applications and Deployment Division assessed onboard ballast water treatment systems used to prevent the discharge of aquatic nuisance species from oil tankers and cargo ships into coastal waters. On August 31, 2001, a final report, “Performance Tests of Alternate Ballast Water Treatment Systems,” was delivered to the sponsor.
- Dr. David Jeong of the Vehicle Crashworthiness Division presented “Progress in FRA Rail Integrity Research” at the American Railway Engineering and Maintenance-of-Way Association’s 2001 Annual Conference & Exposition, held in Chicago, Illinois, in September 2001. Dr. Jeong’s paper has been accepted for publication in the conference proceedings.



*Microphones capture highway traffic noise for the FHWA’s Traffic Noise Model validation study.*

## Papers & Presentations

*Continued from page 11*

- Four technical papers authored by Volpe Center staff were presented at the 20th Digital Avionics Systems Conference (DASC) held in Daytona Beach, Florida, October 14 to 18, 2001. The conference – co-sponsored by the Institute of Electrical and Electronics Engineers and the American Institute of Aeronautics and Astronautics – covered a broad range of key engineering disciplines that support transportation applications involving ground vehicles, general aviation, commercial aviation, rotorcraft, commercial space, and the military. The Volpe presenters were Dr. Thomas Seliga and Mr. Patrick Martone of the Surveillance and Sensors Division.

Dr. Seliga presented papers in two different areas that support FAA programs. The first paper, “Potential Enhancements to the Performance of ASDE (Airport Surface Detection Equipment) Radars Derived from Multistatic Radar Principles,” co-authored by Mr. Francis Coyne of the Airport Surface Division, addresses airport surveillance. The other, “Improvements in FAA Systems: Reliability Assessments of the Terminal Doppler Weather Radar,” co-authored with Mr. Edwin Bates of BAE Systems, was developed in support of reliability assessments of a major weather radar system.

Mr. Martone also presented two papers at the DASC conference. The first paper, “Helicopter In-Flight Tracking System (HITS) Test and Evaluation Project in the Gulf of Mexico,” authored by Dr. Michael Geyer of the Surveillance and Sensors Division, describes the NASA-funded HITS program to provide aircraft surveillance in the Gulf of Mexico environment. The second paper, authored by Mr. Martone, is titled “Candidate Requirements for Multilateration and ADS-B (Automated Dependent Surveillance - Broadcast) Systems to Serve as Alternatives to Secondary Surveillance Radar.” This paper introduces the concept of beacon multilateration surveillance, the specific HITS implementation, and some of the challenges associated with evaluating multilateration and contrasting the performance to traditional secondary surveillance radars.

## Director’s Notes

*Continued from page 10*

such as vehicle location, speed, and destination, as well as weather and visibility conditions; managers rely on performance analysis tools to keep critical systems up and running; organizations use knowledge management systems to help improve performance and spark innovation. The Focus article highlights our work for the Bureau of Transportation Statistics in support of its Safety Data Action Plan and Intermodal Transportation Data Base, both designed to improve the consistency, quality, and dissemination of data across all modes.

The results of good statistical analyses coupled with emerging technologies and strategic planning enable proactive approaches to making the nation’s travels safer and more secure and efficient. Data coordination and mining can point to accident precursors and help devise methods to predict safety problems and develop countermeasures to prevent them. The Volpe Center will remain a leader in exploring more effective and innovative ways to use data to improve our transportation system.

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