Research and Special Programs Administration

the VOLPE center

National Transportation Systems Center

HIGHLIGHTS

Cambridge, Massachusetts March/April 2004

Focus

Facilitating Knowledge Exchange

A recent workshop hosted at the Volpe Center addressed a timely and important topic — cleanup and recovery of passenger transportation facilities after a bioattack. Current emergency response plans focus primarily on the ability to detect, identify, and respond to bioattacks so as to manage and mitigate public health impacts. But to thwart the goals of bio-terrorists and saboteurs, it is essential that we prepare and plan for appropriate, cost-effective, and rapid cleanup and remediation of contaminated facilities as well.

The workshop participants discussed how to be better prepared — prepared to anticipate networkwide effects on transportation operations, to minimize economic damages, and to respond to public shock and psychological trauma. Participants gained a better understanding of the need for relevant biodefense research and technology, policy, and programs.

An earlier roundtable forum brought federal and local experts to the Center to discuss existing port security practices in the Boston Harbor region. Subsequent forums will tackle other significant

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Inside

The swift resumption of normal transportation operations after a bioattack would be vital to the nation's economic well being. The Volpe Center recently held a forum where a wide range of experts discussed how the transportation community can clean up and recover passenger transportation facilities after bioattacks. Subsequent forums will address other urgent transportation issues. (Photo © Eric Malema/Getty Images)

Volpe Workshops on Emerging Issues in Transportation Provide a Forum for Experts

Much valuable work is being done across the transportation community to enhance safety, security, and capacity. However, given the evolving challenges confronting the enterprise, the ability to identify trends in requirements and to map research and technology development is critical. Particularly important is the ability to recognize emerging issues that deserve urgent attention. Maintaining its long tradition of facilitating knowledge exchange across the transportation community, the Volpe Center has designed a workshop series titled "New Dimensions in Transportation" that brings together select experts from the public and private sectors to generate fresh approaches to emerging issues.

Restoring Transportation Operations in the Aftermath of a Bioattack

In 2003, the Volpe Center held forums on emergency response planning related to bioterror agents and public health that focused on evacuation and/or quarantine. Complementing and building on these prior efforts, the Center recently hosted "Cleanup and Recovery of Passenger Transportation Facilities After a Bioattack," which addressed how to mitigate the potentially crippling and costly aftereffects of a likely bioattack on a major transportation node. The group of 50 invited attendees represented a cross section of transportation and homeland security stakeholders who share an interest in rapid, cost-effective recovery capabilities for biocontaminated transportation facilities, vehicles, employees, and passengers.

Lessons learned from the remediation of Postal Service and congressional facilities after anthrax attacks in 2001 served as a platform for discussing future needs and challenges. Experts from federal and state agencies, transportation authorities, academia, and industry reviewed:

- State-of-the-art cleanup technologies and methods;
- Programs and plans to enhance biodefense in transportation;
- Key technology, policy, institutional, and resource challenges to rapid decontamination and recovery after a bioattack.

Dr. Aviva Brecher of Volpe's Office of Environmental Preservation and Systems Modernization organized the forum. The workshop summary, resource paper, agenda, and presentations are posted at *http://www.volpe.dot.gov/ourwork/dimensions/workshops.html* along with information about the entire New Dimensions in Transportation series.

Exploring Other Significant Challenges

The first forum of the New Dimensions series addressed Port Security in Boston Harbor. Hosted by the Center in January 2004, it brought together nearly two dozen federal and local experts who offered their views on existing security practices in the harbor region, future plans, and existing gaps and challenges. Dr. Bahar Barami and Mr. Michael Rossetti of Volpe's Transportation Strategic Planning and Analysis Office organized this roundtable in consultation with Mr. Michael Dinning, Acting Deputy Director, Office of Environmental Preservation and System Modernization. In subsequent forums, invited participants will address: Balancing Security and Mobility, Sustainable Transportation, and Trends in Future Demand for Aviation.

Sharing Lessons Learned from Anthrax Attacks

The costly, complex, and lengthy cleanup of several United States Postal Service and congressional buildings contaminated by anthrax spores mailed in the fall of 2001 offers object lessons to the transportation community. Several invited speakers shared lessons from these cleanup efforts. Workshop participants then explored ways to respond to the system-wide economic, operational, logistical, and psychological impacts of a bioattack, for example, how to:

- Determine what institutional relationships are needed for successful cleanup and recovery;
- Ascertain "how clean is clean enough" prior to resuming operations;
- Assure travelers and workers that they are safe once operations resume;
- Compensate for capacity loss and business interruption;
- Plan for continuity of transportation operations;
- Identify next steps at national, state, and local levels.

(Photo courtesy of Mr. Paolo Iscaro, URS Corporation)

A New Role for Dr. Richard R. John

Volpe Center Director 1989 to 2004

Dr. Richard John has accepted a new position at the Volpe Center as Senior Technical Advisor, Office of Traffic and Operations Management. In this role, Dr. John will continue to provide his insight and knowledge to many of the critical programs under development with the Center.

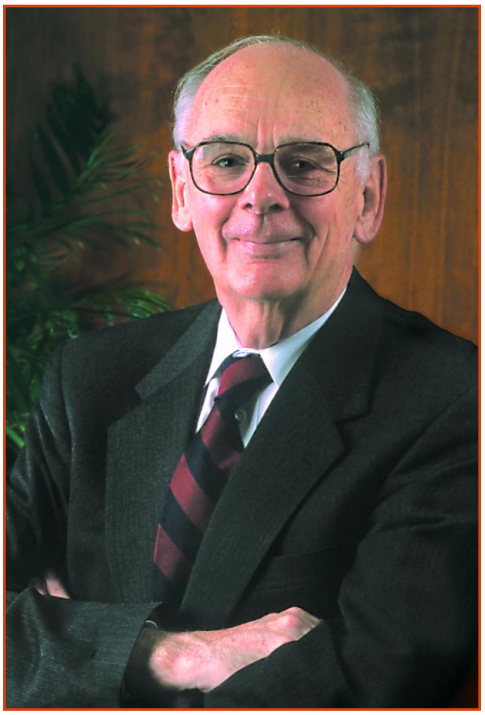
In July 1989, Dr. Richard R. John was named Director of the Volpe Center. He has served with distinction in this high-profile position. As Center Director he promoted a strategic vision of the transportation enterprise together with the highest concept of public service. He emphasized the Volpe Center's critical role in helping the nation achieve its transportation goals in the areas of safety, mobility, global connectivity, environmental stewardship, security, and organizational excellence.

Dr. John was twice awarded the Presidential Distinguished Executive Award, the highest commendation available to Senior Executive Service members of the federal government. This award recognizes "sustained extraordinary accomplishment" and "celebrates career executives who are strong leaders and who consistently demonstrate strength, integrity, industry, and relentless commitment to public service."

In 1992, President George H. W. Bush acknowledged Dr. John for being a "world leader in automotive industry analysis," and for conceiving, planning and implementing a ground transportation engineering capability at the Center, which had been focused solely on advancing electronics research. His leadership enabled the Department of Transportation (DOT) to carry out its role and statutory responsibilities in enforcing congressionally mandated fuel economy relations, in participating in the Chrysler Loan Guarantee Act, and in early assessments of the declining global competitiveness of the U.S. automotive industry.

President Clinton recognized Dr. John in 2000 for his demonstrated creativity and strong personal commitment to promoting the importance of technological innovation in shaping transportation systems to meet America's needs in the next century. Dr. John provided the leadership necessary to direct a world-class transportation systems center while also building coalitions across the diverse transportation community. He reached out to and partnered with state, local, and international governments and non-DOT federal agencies in order to assist them with their transportation challenges.

Dr. John's significant contributions to the Center, the DOT, and to the transportation enterprise span four decades. His tenure at the Center coincides closely with the DOT's own evolution. He is recognized for



Dr. Richard R. John

anticipating and effectively responding to the changing times and shifting priorities of the Department.

During his tenure as Director, the Center solidified its role as an innovative and flexible organization dedicated to addressing critical transportation issues from a systems perspective. Dr. John has fostered a vision of the Center as a key link between the rapidly changing domain of technology and the real-world transportation community to further the goals and achievements of the nation's transportation system. He has achieved this, in part, through his active participation in national scientific committees and sponsorship of symposiums, conferences, and lectures at the Center. He has encouraged Center staff to cultivate an awareness of the interrelationships between transportation and society, understanding that for a change to the transportation system to be an improvement, its development must take into account political, technical, operational, societal, economic, institutional, and environmental issues.

Though Dr. John steps down from his role as Director, he continues to dedicate himself to the Center's work. In his own words, "While I am proud of what this Center has accomplished … we have much more to do. I have no doubt that we will continue to respond to new opportunities, meet future challenges, make a difference and, most important, make the world a better place."

Dr. John will continue in his service to the Volpe Center, the Research and Special Programs Administration, and the Department of Transportation and remains committed to the shared goal of Safer, Simpler, Smarter Transportation Solutions.

Developing Tools to Manage Operator Fatigue

Operator fatigue is a critical safety issue that cuts across all modes and operations in the transportation industry. Fatigue may produce physical and mental decrements in alertness, vigilance, and decision making that can increase the risk of human error and result in fatalities and injuries. However, the incidence of fatigue is underestimated in virtually every transportation mode because it is hard to quantify and measure. Accordingly, a DOT initiative is bringing together the expertise of government, industry, and labor to create tools to aid in understanding and managing operator fatigue.

Every day, transportation operators and managers must cope with unusual and difficult work schedules and the reality of operator fatigue. Recognizing that fatigue management requires major changes in both organizational culture and operator behavior, DOT modal administrations have joined together to start a research initiative focused on these challenges — the DOT Operator Fatigue Management (OFM) Program. The Research and Special Programs Administration (RSPA), the Volpe Center's parent agency, manages the OFM Program under the auspices of the DOT's Human Factors Coordinating Committee. Dr. Stephen Popkin of Volpe's Operator Performance and Safety Analysis Division is co-chair of the OFM Program.

The incidence of fatigue is underestimated in virtually every transportation mode because it is difficult to quantify and measure. New tools will help promote understanding and management of operator fatigue.

The OFM Program executed four public-private partnerships to develop non-prescriptive tools for operator fatigue management, with the intent that these tools are to be used by industry. As described below, the tools are in various stages of development. Representatives of industry and labor are involved in the planning and field-testing stages of development, and many commercial carriers and government agencies are poised to use these tools as they become available. As they are completed, the tools are made available to the public at *http://scitech.dot.gov/research/human/*.

- Work Schedule Representation and Analysis Software (Ximes GmbH) – A software tool to help managers and schedulers design and objectively evaluate ergonomic work schedules that promote on-duty alertness. Version 1 of this tool is complete.
- Business Case Development Tool Suite (Temple University) – A documented methodology, and supporting analytical tools, to help company safety managers build a business case to gain support from senior management for fatigue management activities. This tool is in development.
- Fatigue Model Validation Procedure (SAIC) – A formalized procedure for validating the output of fatigue modeling tools that are being tailored for transportation applications. This ongoing project is currently being evaluated for the railroad industry.
- Fatigue Management Reference Guide (Battelle Memorial Laboratories) – A compendium of current science and practical information on approaches to fatigue management and mitigation in the transportation enterprise. This tool is complete.

The Fatigue Management Reference Guide, the OFM Program's most recently completed tool, was finalized in January 2004 at a special meeting facilitated by Dr. Stephen Popkin of Volpe's Operator Performance and Safety Analysis Division, who worked with project representatives from both the DOT and the Department of Homeland Security. Dr. Donald Sussman, Chief of the Division, also contributed to this project. The first such cross-modal program developed specifically for human fatigue in transportation, it incorporates input from more than 23 industry stakeholders, and included

a 50 percent cost-share from the awardees and the industry that will use these tools.

Supporting the Hours-of-Service Rule with Vital Information Systems (FMCSA)

The mission of the Federal Motor Carrier Safety Administration (FMCSA) is to reduce crashes, injuries, and fatalities involving large trucks and buses. In support of its safety mandate, FMCSA develops and employs information technology (IT) data collection and analysis systems to enable data-driven enforcement of federal safety regulations. These systems allow the agency to focus on higher risk carriers when enforcing the safety regulations; partner with state and commercial stakeholders; and provide factual and educational messages to carriers, commercial drivers, and the public. Volpe's Surface Transportation Information Systems Division is the FMCSA's primary IT strategic partner. The Division aids the FMCSA in the development, enhancement, and operation (including user technical support) of safety information systems that support its safety mandate.

The recent revision of the new hours-of-service regulations (see sidebar) provides an excellent example of the Division's ongoing support to FMCSA. The success of FMCSA's enforcement and education operations for the new rule depends in large part on reliable, up-to-date, safety information systems. In the months preceding the compliance date of January 4, 2004, a team from the Division worked with FMCSA to ensure a smooth implementation of the new regulations into existing FMCSA IT systems.

Three information systems that the Volpe Center operates and maintains for FMCSA required upgrading to accurately capture and reflect this new motor carrier-related safety data: the Enforcement Management

Information System, the Motor Carrier Management Information System, and the FMCSA Safety Network system. In the fall of 2003, Volpe began planning the implementation of changes necessary to enable these systems to accept and process information related to the new regulations, and to upload it to other systems. The rapid implementation of the new requirements was particularly challenging because all related systems had to be able to distinguish between different regulation-specific violations with the same identifiers, a situation never encountered before. Nevertheless, the systems were ready and deployed in time for use on the compliance date.

The Volpe team was led by Mr. Bob Berk and Mr. Buck Baley of the Surface Transportation Information Systems Division, and supported by staff from Computer Science Corp., a Volpe Center on-site contractor.

Driver fatigue can contribute to commercial motor vehicle crashes. The Volpe Center supports the FMCSA's enforcement of the new Hours-of-Service rule, which will help ensure that commercial drivers get an appropriate amount of rest.

Revised Hours-of-Service Regulations

In 1995, Congress, concerned about the effect of fatigue as a contributing factor in commercial motor vehicle crashes, directed the FMCSA to begin a rulemaking to increase driver alertness and reduce fatigue-related incidents. During the rulemaking process, the FMCSA analyzed the scientific research, convened expert panels, held hearings and roundtable discussions, and reviewed more than 53,000 individual comments submitted. In April 2003, FMCSA issued the first significant revision to the hours-of-service regulations in more than 60 years; the new regulation went into effect on January 4, 2004. The new regulations provide an increased opportunity for drivers to obtain necessary rest and restorative sleep, and at the same time reflect operational realities of motor carrier transportation. (Source: *http://www.fmcsa.dot.gov/Home_Files/revised_hos.asp*)

Recruiting Capable, Proven Talent Through Student Employment

Understanding that its core resource is its people, the Volpe Center is committed to finding, developing, and retaining a diverse group of innovative professionals. One important source of talent for both technical and administrative positions at the Center is the Student Career Experience Program (SCEP), which provides federal employment opportunities to degree-seeking students, allowing them to gain valuable work experience in their field of interest. The relative ease with which SCEP students can be hired and, upon graduation, can be converted to term or permanent positions, makes the program a popular recruiting option at the Center. In FY 2003, for example, nearly 70 percent of the Center's entry-level hires were handled in this manner.

Fifty-seven students are currently employed at Volpe while pursuing either undergraduate or advanced degrees. The program benefits both the Center and the participating student. A manager working with a student intern can assess the student's potential contribution to the Center, while the student can experience Volpe's public-service mission, organizational culture, and project work.

A recent report by the Partnership for Public Service titled "Tapping America's Potential: Expanding Student Employment and Internship Opportunities in the Federal Government" calls on federal agencies to take advantage of the pool of "talented and motivated young people." The report also cites findings by the Merit System Protection Board on the benefits of internship programs. Students entering organizations through SCEP are highly motivated, and they bring fresh perspectives that contribute to organizational problem solving.

Volpe Contributes to TRB Annual Meeting

The Transportation Research Board's (TRB) 2004 Annual Meeting drew nearly 9,000 transportation professionals from around the world to Washington, D.C. from January 11–15, 2004. The Volpe Center was well represented in this diverse group of researchers, academics, administrators,

and others from government and industry. Volpe staff participated in more than 20 sessions or meetings, presided over 13 sessions or meetings, delivered 13 papers or presentations, and developed and staffed the Volpe Center exhibit, DOT's Small Business Innovation Research Program exhibit, RSPA's University Transportation Center's exhibit, and DOT's Technology and Innovation exhibit.

The TRB meeting may be the world's largest transportation forum. With every mode of transportation represented, it is an ideal venue for the Volpe Center to share its knowledge and perspective. Volpe participants covered a broad range of topics, including safety, mobility, environmental stewardship, performance measurement, railroad systems, transportation economics, and transportation planning.

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Safety

- Dr. Joyce Ranney of the Operator Performance and Safety Analysis Division co-delivered the paper "Impacts of Participatory Safety Rules Revision in the U.S. Railroad Industry: An Exploratory Study" with Dr. Christopher Nelson of the RAND Institute. The purpose of the presentation was to report on an assessment of a participatory rules revision, an intervention developed by industry safety executives in collaboration with a rules revision expert, as an instrument of safety improvement in the U.S. railroad industry. The Federal Railroad Administration's Human Factors R&D Program sponsored the study, which found the intervention worthy of future activity because of promising impacts that include the potential to improve injury rates, reduce liability related costs, and improve organizational safety culture.
- Ms. Anya Carroll of the Railroad Systems Division, chair of the Committee on Highway-Railroad Grade Crossings (AHB60), presided over the annual committee meeting as well as the session titled "Highway-Rail Grade Crossings, Part 2: Lessons Learned Using Advanced Technologies."
- Dr. Donald Sussman, Chief of the Operator Performance and Safety Analysis Division, presided over the session "Cultural, Organizational, and Behavioral Aspects of Railroad Safety" and chaired the meeting of the Subcommittee on Railroad Operational Safety (AND10-1).
- Mr. Arthur Flores of the Environmental Measurement and Modeling Division presented "Breath Test Technology" at the session "Technology Advances in Traffic Safety in Alcohol Enforcement and Programs."
- Mr. Greg Ayres of the Accident Prevention Division presented the paper "A Vehicle Movement Identification Method for Analysis of Field Operational Test Data," coauthored by Dr. Bruce Wilson and Mr. Jon LeBlanc, also of the Division. The paper describes a reliable and accurate method of finding steering maneuvers (e.g., turns, curves, lane changes) in a large file of numeric vehicle data. The method was tested

on pilot test data and found to be accurate (between 65% and 100%), reliable, and robust. The authors will use this method in carrying out the Volpe Center's role as independent evaluator for an upcoming field operational test involving a state-of-the-art Roadway Departure Crash Warning system.

Mobility

- Dr. Eugene Gilbo of the Automation Applications Division organized the session "Air Traffic Flow Management Decision Support."
- Dr. David Yang of the Accident Prevention Division, co-chair of the Joint Subcommittee on Advanced Traveler Information Systems (ATIS), presided over the Subcommittee's annual meeting. In addition, Dr. Yang moderated the session titled "ATIS Research Studies and Implemented Projects."
- Mr. Sean Peirce of the Economic and Industry Analysis Division presented "Why Don't More People Use Advanced Traveler Information? Evidence from the Seattle Area." The paper is based on research conducted by Mr. Peirce and Ms. Jane Lappin, also of the Division, as part of a research program sponsored by the ITS Joint Program Office that is designed to understand the market for ATIS, user responses to information, and the range of benefits of ATIS usage.
- Ms. Margaret Petrella of the Economic and Industry Analysis Division presented "Los Angeles and Seattle: A Comparative Analysis of Customer Response to Online Traffic Information," coauthored by Ms. Jane Lappin, also of the Division.

Environmental Stewardship

- Dr. Judith Rochat of Volpe's Environmental Measurement and Modeling Division organized and chaired the Subcommittee on Highway Noise and Vibration.
- Mr. William Lyons of the Planning and Policy Analysis Division presented the results of the recently finalized Volpe Center report "State and Local Transportation Planning for Climate Change." The report, sponsored by the U.S. DOT Center for Climate Change and Environmental Forecasting, can be found at *http://climate.volpe.dot.gov/papers.html.* Mr. Lyons participated on the panel titled "Climate, the City, and Transportation," which was chaired by Emil Frankel, Assistant Secretary for Transportation Policy and chairman of the U.S. DOT Climate Center's Steering Committee.

Performance Measures

- Dr. Joyce Ranney of the Operator Performance and Safety Analysis Division co-led the workshop titled "Program Evaluation Tools and Methods in Transportation Research." The workshop presented concepts and methods for evaluating research programs as a way to

respond to the President's Management Agenda concerning performance measurement for agency programs. The workshop presented a basic introduction to program evaluation and its relationship to research, program planning, and decision making. Participants included representatives from the Federal Railroad Administration, Federal Highway Administration, State Departments of Transportation, and National Transportation Safety Board, as well as railroad management and labor.

Railroad Systems

- Mr. Robert Dorer of the Railroad Systems Division, chair of the Committee on Guided Intercity Passenger Transportation, presided over the committee's annual meeting.
- Dr. Theodore Sussmann of the Structures and Dynamics Division presided over the workshop "Advances in Railway Design, Construction, and Maintenance."
- Dr. Andrew Kish of the Structures and Dynamics Division presided over the session "Better Wayside Detection Technologies and their Applications."

Transportation Economics

- Mr. Don Pickrell of the Office of System and Economic Assessment presented "Economic Alternatives to Meeting Projected Demand," which was co-authored by Dr. Douglass Lee of the Economic and Industry Analysis Division.
- Dr. Douglass Lee of the Economic and Industry Analysis Division presented "Fundamentals of Cost-Benefit Analysis as Applied to Road Pricing." Dr. Lee also assumed the Chair of the Committee on Transportation Economics. He emphasized that the function of the committee is cross-cutting, and its mission should be to find ways to apply economic analysis to the work of other committees, including those in the environmental, social, and engineering areas.

Transportation Planning

- Ms. Melissa Laube of the Service and Operations Assessment Division presented a technical paper, "Planning for Tour Bus Management in Washington, D.C.," co-authored by Mr. David Spiller of the Division. The paper examines the characteristics of tour bus operations; associated impacts on parking, traffic, and neighborhoods; and potential tour bus management strategies. In addition, Ms. Laube substituted for Mr. Gary Ritter, Acting Chief of the Division, as co-chair of the session titled "Alternative Transportation Needs of National Parks and Public Lands."

Awards

- **Railroad Noise Measurement and Evaluation.** On February 11, 2004, Mr. Eric Boeker of the Environmental Measurement and Modeling Division received a team award for his contribution to the recent Federal Railroad Administration Occupational Noise Exposure Notice of Proposed Rule Making, concerning the measurement and evaluation of noise in locomotive cabs.

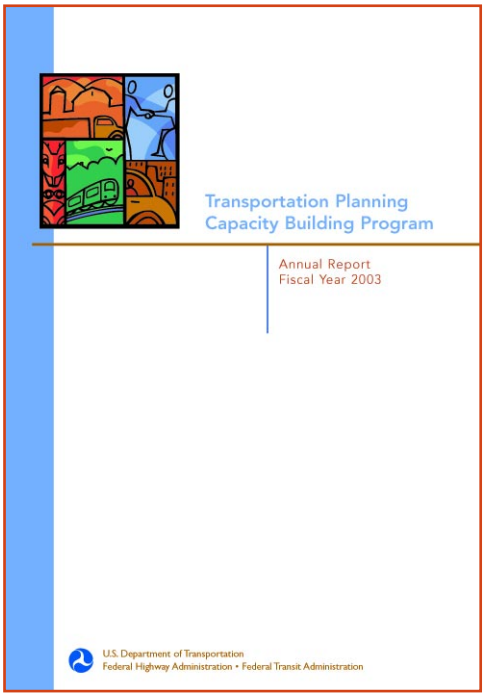
Published & Presented

- **Transportation Planning Capacity Building.** Volpe's Planning and Policy Analysis Division provides ongoing support to the FHWA/FTA Transportation Planning Capacity Building (TPCB) Program. The program provides products and services designed to help decisionmakers, transportation officials, and staff resolve the increasingly complex issues they face when addressing transportation needs in their communities. Recently, Volpe developed "Transportation Planning Capacity Building Program: Annual Report Fiscal Year 2003," which was released in January. The Volpe team, led by Mr. John Boiney of the Division, included Ms. Elizabeth Machek and Ms. Kristin Lovejoy of EG&G Technical Services, a Volpe Center on-site contractor.

- **Runway Visual Range Systems Performance.** Mr. Thomas Seliga of Volpe's Surveillance and Assessment Division presented "Temporal and Spatial Behavior of Visibility Obtained from Runway Visual Range (RVR) Sensors during Snowfall Events at Several Major Airports" at the 20th International Conference on Interactive Information Processing Systems for Meteorology, Oceanography, and Hydrology, 84th American Meteorological Society Annual Meeting, held in Seattle, Washington, January 11–16, 2004. The paper was co-authored by Mr. David Hazen of Titan/System Resources Corporation and Mr. Stephen Burnley of the Federal Aviation Administration. It can be found at *http://ams.confex.com/ams/pdfpapers/72244.pdf.*

- **Handbook of Transportation Engineering.** The Volpe Center supports noise mitigation programs of the Federal Aviation Administration, Federal Highway Administration, Federal Railroad Administration, and various state and local agencies in the measurement and modeling of techniques pertaining to the mitigation of transportation-related noise. Dr. Judith Rochat of the Environmental Measurement and Modeling Division has contributed the chapter "Transportation Noise Issues" to the latest edition of the *Handbook of Transportation Engineering* (McGraw-Hill, 2004, Myer Kutz, Editor).

- **Electronic Payment Systems.** On January 13, 2004, the Volpe Center published "ORANGES Evaluation Phase I Risk Assessment Report: Phase I of the U.S. DOT Sponsored Evaluation of the ORANGES Electronic Payment Systems Field Operational Test" for the Federal Highway Administration Joint Program Office. It can be found at *http://www.itsdocs.fhwa.dot.gov//JPODOCS/REPTS_TE//13966.html.*



- **GPS Integrity.** Ms. Karen VanDyke of the Volpe Center's Center for Navigation presented "Status Update on GPS Integrity Failure Modes and Effects Analysis" at the 2004 National Technical Meeting of the Institute of Navigation, held in San Diego, California, January 26–28, 2004. Co-presenters included Mr. Karl Kovach of ARINC and Mr. John Lavrakas and Mr. Brian Carroll of Overlook Systems.
- **Columbia Space Shuttle Accident.** Dr. James Hallock, Chief of Volpe's Aviation Safety Division, recently presented two lectures on the Columbia Space Shuttle Accident. On January 27, 2004, Dr. Hallock lectured on the forensic analysis of the accident to the Boston University student chapter of the American Institute of Aeronautics and Astronautics. Forensic analysis consists of a failure causation analysis; in the case of the Columbia Shuttle, this task included investigating the physical failures that led to its destruction. On January 28, 2004, at the invitation of the Office of the Secretary of Energy, Dr. Hallock presented a "Review of the Columbia Accident" at the Department of Energy (DOE) Senior Leadership Conference in Alexandria, Virginia. The lessons learned from the accident were of particular interest to many groups in the DOE that deal with high levels of risk.
- **Information Systems Security.** Mr. David Sawin of the Volpe Center's Infrastructure Protection and Operations Division delivered "Security Awareness Virtual Initiative — Hands-on Demonstration" at the National Information Systems Security Conference and Exposition, held February 9–13, 2004, in Jacksonville, Florida. The Division developed and maintains the Security Awareness Virtual Initiative (SAVI) for the Federal Aviation Administration. SAVI, a new Web-based learning tool, is an "at-the-desk" alternative to more traditional methods of promoting a security-aware workforce.
- **In-Vehicle Technologies.** Mr. Marco DaSilva of the Volpe Center's Accident Prevention Division presented, "In-Vehicle Technologies: Automated Collision Notification and Event Data Recorders," to the Massachusetts Division of the Federal Highway Administration on January 8, 2004. His presentation covered event data recorders (EDRs), or black boxes, supplied by the original equipment manufacturers or available in the aftermarket. In addition, Mr. DaSilva assessed automated collision notification (ACN) systems currently available to vehicle owners and discussed the legal issues surrounding the crash data obtained by the EDR and ACN systems. His presentation was based on the results of a task currently being conducted by the Volpe Center in support of the light vehicle platform under the U.S. DOT's Intelligent Vehicle Initiative/Intelligent Transportation System program.

Focus

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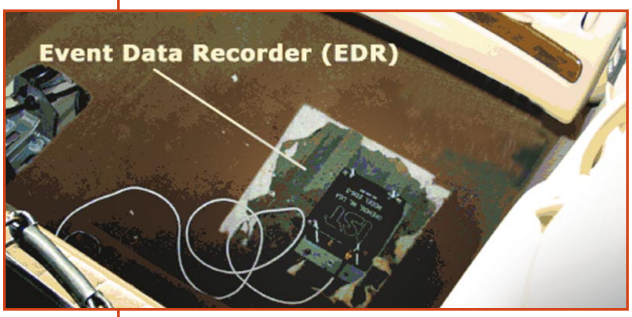
challenges to the transportation community as it works to improve mobility and capacity while ensuring safety and security.

On a much larger scale, the Transportation Research Board's annual meeting provides ample opportunity for knowledge sharing, and the Center's participation exemplifies our diverse support to the DOT across all modes and strategic goals. The contributions of Volpe staff members are summarized in this issue of *Highlights*.

This issue also continues coverage of the Center's ongoing pursuit of organizational excellence. As the need for highly qualified federal employees continues to grow, the Volpe Center is able to recruit talented students from local communities, which further enhances the Center's ability to provide its clients with creative solutions to complex problems.



An electronic data recorder, or "black box," installed under the front seat of an automobile collects and stores information about crashes—such as vehicle speed, braking, and passenger seat belt use—that can be used in the investigation of accidents.

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