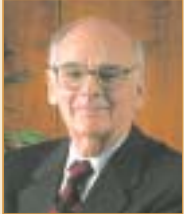




National Transportation Systems Center



Richard R. John

Director's Notes

Comprehensive Expertise in Transportation Systems

Each year, the Transportation Research Board's Annual Meeting provides an excellent showcase of the Center's diverse support to the DOT across all modes and strategic goals. Volpe's participation at TRB also exemplifies the Center's continuing involvement in facilitating knowledge exchange. Volpe provides a variety of services to enable knowledge sharing, education, and technology transfer across the transportation community, as well as for other federal agencies. This issue of *Highlights* presents a range of this work.

Conferences and workshops provide forums for professionals to exchange information and perspectives; Volpe develops large-scale and small-scale meetings involving regional, national, and international participants. A recent meeting held at the Center was the first in a series with the Canadian ministry of transport on railroad grade crossing systems in North America. On a broader scale, in

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Inside

- Investigating the cause of the **Shuttle Columbia** accident
- Making motor-carrier safety **information and analysis** available
- Exchanging rail research** information with Canadian counterparts
- Facilitating collaboration** on the prevention of head injury

HIGHLIGHTS

Cambridge, Massachusetts

March/April 2003

Focus

Volpe Center's Multimodal Traffic Management Work: Deploying Systems that Enhance Mobility



Highway-Rail Grade Crossing Safety Research



Navigating the Saint Lawrence Seaway with the Automatic Identification System



Parking Management System for the National Park Service

Major themes of the recent TRB meeting included Congestion, Security, and Safety. In response to these themes, the Volpe Center's exhibit – Deploying Systems that Enhance Mobility – focused on the Center's work in traffic management, including rail traffic management research for the Federal Railroad Administration, vessel traffic control on the Saint Lawrence Seaway, and parking management for the National Park Service.

Volpe Contributes to TRB Annual Meeting

The Transportation Research Board's (TRB) 2003 annual meeting drew approximately 8,000 transportation professionals from around the world to Washington, D.C. The Center was well represented in this diverse group of researchers, academics, administrators, and others from government and industry. Volpe staff participated in nearly 20 sessions or meetings, delivered 12 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 Technology and Innovation 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 and human performance, environmental impacts of transportation, intelligent

transportation systems, transportation economics, performance measurement, transportation network modeling, railroad-highway grade crossings, railroad track structure and maintenance, high-speed rail planning, and traveler information systems.

Safety and Human Performance

- Dr. Stephen M. Popkin of the Operator Performance and Safety Analysis Division presided over a Volpe-developed human factors workshop on fatigue-management software.
- In support of the Maritime Administration, Dr. Joyce Ranney of the Operator Performance and Safety Analysis Division co-developed and co-presided over a human factors workshop titled “What Is Safety Culture in Transportation and How Can It Be Improved?”
- Dr. Lawrence C. Barr and Dr. C. Y. David Yang of the Accident Prevention Division presented “An Exploratory Analysis of Truck Driver Distraction Using Naturalistic Driving Data.”

Railroad Safety

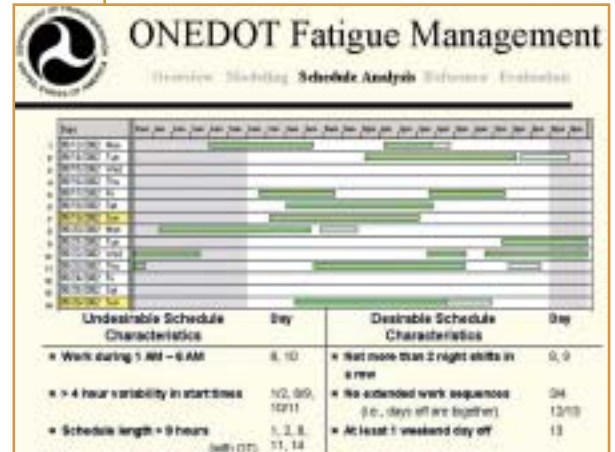
- Mr. Jeffrey E. Gordon of the Structures and Dynamics Division presented “What Do Federal Railroad Administration Safety Statistics Tell Us?”
- Dr. David Jeong of the Vehicle Crashworthiness Division presented “Risk Assessment Applied to Rail Defect Detection Scheduling.”
- Dr. Theodore R. Sussmann and Dr. Andrew Kish of the Structures and Dynamics Division presented “Investigation of Influence of Track Maintenance on the Lateral Resistance of Concrete Tie Track.”
- Ms. Judith Warren, of the Information Integration Division, presented the paper “Closure of U.S. Highway-Rail Crossings: a Status Report.”

Environmental Impacts

- Dr. Aviva Brecher of the Office of Environmental Preservation and Systems Modernization presented the invited paper “Transportation Perspectives on Adverse Health Impacts of Air Toxics” (co-authored with Ms. Nicole Rossbach of the Environmental Engineering Division). Dr. Brecher also served as a panelist in the session “Air Toxics: The Next Poison Pill for Transportation?”

Mobility

- Mr. Sean Peirce and Ms. Jane E. Lappin of the Economic and Industry Analysis Division presented “Evolving Awareness, Use, and Opinions of Seattle Region Commuters Concerning Traveler Information: Findings from the Puget Sound Transportation Panel Survey, 1997 and 2000.”
- Dr. Donald Sussman, Chief of the Operator Performance and Safety Analysis Division, and Dr. Mary Donahue Stearns and Mr. David



Fatigue resulting from round-the-clock and irregularly scheduled operations can adversely affect the performance of transportation employees. A Volpe-developed workshop for those concerned with scheduling and fatigue management provided hands-on training in two DOT-funded software tools.

Skinner, also of the Division, presented the paper “Quantifying the Relationship: Aging, Driving Cessation, Health and Costs” in conjunction with Mr. Donald Trilling, U.S. DOT Office of the Secretary. The paper was developed in collaboration with the National Highway Traffic Safety Administration.

Performance Measures

- Ms. Rachel Winkeller of the Planning and Policy Analysis Division and Mr. Bob Pray of the Technology Application and Deployment Division, with Capt. Doug Lane of the U.S. Coast Guard, presented “Using Performance Measures to Improve Cutter Readiness in the U.S. Coast Guard.”
- Mr. Donald G. Wright of the Motor Carrier Safety Assessment Division presented “Means to Measure Program Effectiveness of Federal Motor Carrier Safety Programs.”

Volpe Center Exhibit: Deploying Systems that Enhance Mobility

Major themes of the TRB meeting included Congestion, Security, and Safety. In response to these themes, the Volpe Center’s exhibit focused on the Center’s work in Traffic Management, highlighting support to three federal agencies.

The National Park Service is developing traffic monitoring and management systems for national parks with the support of the Volpe Center. The exhibit illustrated a low-cost, real-time parking management system deployed at the Sandy Hook Unit of Gateway National Recreation Area in New Jersey during the summer of 2002 to monitor and predict parking availability; traffic information systems are planned at other national parks.

The Highway Grade Crossing Safety display highlighted Volpe’s support to the Federal Railroad Administration in the rail traffic management arena with an emphasis on safety, mobility, and security. This display included an interactive driving simulator, overviews of current field operational tests related to infrastructure security and safety, risk assessment studies, human factors research, and support to federal rulemaking and industry standards.

For the Saint Lawrence Seaway Development Corporation, the Center developed and implemented a new vessel-traffic management system that identifies and tracks all commercial vessels on the Seaway. The network, based on the automatic identification system, also enables the automated dissemination of waterway status information to transiting vessels. The system contributes to improved mobility as well as safety.

Volpe staff presented a methodology to help quantify the loss to a person, community, and society when an individual loses outside-the-home mobility for age-related reasons.



A portable transponder aboard each ship on the Seaway provides accurate navigation information to the Vessel Traffic Control Center.



Volpe Staff Member Named to the Columbia Accident Investigation Board (NASA)

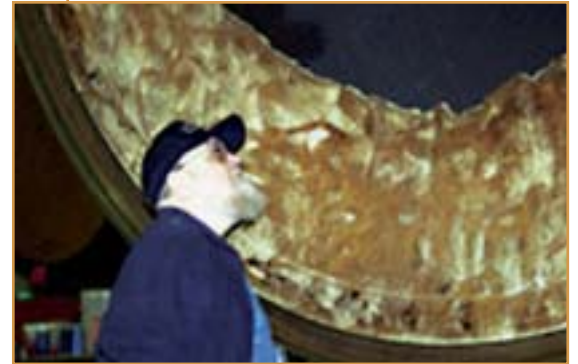
Since 1996, Dr. James Hallock, Chief of the Aviation Safety Division, has been a member of the National Aeronautics and Space Administration (NASA) Space Shuttle and Space Station Interagency Mishap Board, which NASA established to provide rapid investigatory response in the event of a space shuttle or station mishap. Board members are always on call during any shuttle mission. After the recent Columbia Space Shuttle accident, Dr. Hallock was selected to serve on the Columbia Accident Investigation Board (CAIB). This independent board is charged with determining what caused the destruction of the Space Shuttle Columbia and the loss of its seven-member crew on February 1, 2003, during reentry, as well as recommending preventive and other appropriate actions to preclude recurrence of a similar mishap. For information about the CAIB and its investigation, visit <http://www.caib.us/>.

In 1966, Dr. Hallock joined NASA's Electronics Research Center in Cambridge, Massachusetts, where his work involved the development of a holographic spacecraft attitude system and optical spatial filtering techniques. In 1970, he joined the DOT's Transportation Systems Center (since renamed for former DOT Secretary John A. Volpe). Dr. Hallock's work at the Volpe Center has included developing and testing optical guidance systems for aircraft, the study of aircraft wake vortices, the development of flight procedures, the conduct of safety analyses in support of rulemaking, and the development of aviation regulations and aviation safety information systems.

Dr. Hallock is a senior member of American Institute for Aeronautics and Astronautics and a member of the MIT Educational Council. He serves on review boards for the Canadian government and the Federal Aviation Administration as well as the NASA Space Shuttle program. He has authored or co-authored two patents and more than 125 papers and reports.

Making Safety Analysis and Information Available (FMCSA)

A Volpe Center team is providing analytical support to two Federal Motor Carrier Safety Administration (FMCSA) projects that provide Web-based access to safety information about motor carriers and FMCSA safety programs. The first project provides more frequent and enhanced updates to SafeStat, an automated, data-driven analysis system that



At the Kennedy Space Center (KSC), Dr. James Hallock looks over a portion of the solid rocket booster that launched the Shuttle Columbia. As a member of the Columbia Accident Investigation Board he has visited sites at KSC to become familiar with the Shuttle launch process and elements. (Photo courtesy of the John F. Kennedy Space Center Multimedia Gallery)

determines the relative safety status of individual motor carriers. Developed by Volpe's Motor Carrier Safety Assessment Division, SafeStat is an important tool used in key federal and state safety-enforcement programs to identify and prioritize carriers with safety deficiencies for safety audits and roadside inspections nationwide. SafeStat results are also used extensively by the motor carrier industry, insurance companies, shippers, and truck-leasing companies. Until recently, SafeStat results were updated semi-annually. The Division and FMCSA launched "Monthly SafeStat," providing users with more timely safety analysis. The Volpe-developed SafeStat Web site will include the previously posted, semi-annual historical results as well as the new monthly results. The Volpe team is led by Mr. Don Wright and includes Mr. Dave Madsen, Ms. Beth Deysher, and Ms. Julie Nixon, all of the Division.

Lessons learned from Volpe's development of earlier safety performance monitoring systems formed the foundation for SafeStat. Soon after a deadly air charter accident in 1985, the Department of Defense (DoD) asked the Volpe Center to develop an automated safety monitoring system for charter air carriers used by the DoD. The resulting Air Carrier Analysis Support (ACAS) system was designed to monitor a number of performance measures and call attention to an air carrier deviating from a normal pattern. In 1993, a Volpe team including a key member of the ACAS development team began work on a new safety profiling system for motor carriers based on ACAS. SafeStat and its Internet-based information delivery system now set the standard for motor carrier safety measurement and information distribution at all levels of government and in the private sector.

A new project will provide the general public with safety information about commercial motor coach passenger carriers. Ms. Nancy Kennedy and Mr. Doug Rickenback of Volpe's Motor Carrier Safety Assessment Division initiated this project with FMCSA's Commercial Passenger Carrier Safety Division. The Volpe team will develop the requirements for a methodology to assess the safety of commercial motor coach passenger carriers and disseminate the analysis, safety data, and statistics to the general public via a new, customer-oriented module in the Analysis and Information (A&I) Online Web site. Currently, the A&I Web site disseminates safety data and statistics on all motor carriers that operate in the United States, including passenger carriers. The new module will support organizations such as schools in making safety-conscious decisions when hiring bus, minivan, or motor coach companies for tours, school field trips, or other events.



After increasing through the 1990s, truck-related crashes and fatalities have declined in the U.S. since SafeStat's introduction. SafeStat results are available on the Volpe-developed Web site (<http://www.ai.volpe.dot.gov>).

Exchanging Research Information with Canadian Counterparts (FRA)

In order to benefit from technical research efforts in the United States and Canada, the Federal Railroad Administration (FRA) and Transport Canada (the Canadian ministry of transportation) signed a Memorandum of Cooperation in May 2002 regarding highway-rail grade crossing safety and trespass prevention research. The memorandum enables the two agencies to share information and cooperate on projects with no monetary exchanges.

The objective of this international partnership is to provide options for increasing the safety and cost-effectiveness of grade crossing systems through technological, operational, and human factors research. It aims to develop a better understanding of the factors contributing to grade crossing and trespassing incidents and to enhance the effectiveness and range of countermeasures.

A multidisciplinary Volpe team recently hosted the first in a series of meetings on grade crossing research in North America. The meeting, held at the Center, provided a forum for the technical exchange of research on railroad horn systems. Representatives from Transport Canada, the Volpe Center, and the Federal Railroad Administration (FRA) concluded that the efforts on both sides of the border were complementary, and identified further collaborative efforts: acoustic warning systems, driver and pedestrian behavior, motor carrier safety rating, trespass prevention, second-train warning systems, low-cost, active-warning systems, and LED technology studies.

The Volpe team consisted of Ms. Anya A. Carroll and Ms. Suzanne Sposato of the Railroad Systems Division, Ms. Amanda Rapoza of the Environmental Measurement and Modeling Division, Dr. Jordan Multer of the Operator Performance and Safety Analysis Division, and Mr. Jonathan Mozenter of EG&G Technical Services, Inc. (a Volpe Center contractor).

Facilitating Collaboration on the Prevention of Head Injury (U.S. Army)

The Volpe Center held the International Conference on Closed Head Trauma with the U.S. Army Medical Research and Materiel Command, in collaboration with the U.S. Consumer Products Safety Commission. The conference was held in San Juan, Puerto Rico, and was chaired by Dr. Faris Bandak of the Volpe Center and Col. John Crowley of the U.S. Army Aeromedical Research Laboratory. It brought together researchers in the physical and medical sciences who are interested in the



The agreement between the United States and Canada to exchange information about grade crossing research will avoid duplication of effort.

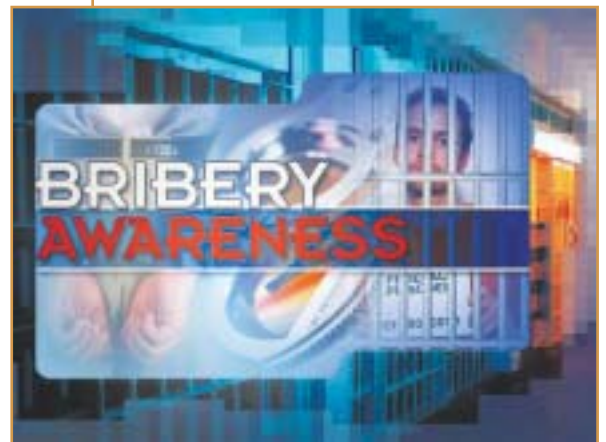
prevention of head injury. The Volpe Center was responsible for developing the scientific program. International experts presented the latest in epidemiology, biomechanics and neuroimaging of traumatic brain injury (TBI) as well as neuropsychological and cognitive assessment methods for mild traumatic brain injury (MTBI), neuropathology, and helmet standards and technologies.

The scientific program was directly related to ongoing biomechanics research at the Volpe Center and provided Volpe staff opportunities for international collaboration with researchers from industry and governments both domestically and internationally. The conference also provided an opportunity for Volpe staff to meet with research collaborators from the U.S. Army and the U.S. Navy on injury biomechanics. The conference also served as a forum where previous Volpe work such as Injury Measures for Rotational Head Loading and SIMon (Simulated Injury Monitor), the head injury assessment tool developed by the Volpe Center for the National Highway Traffic Safety Administration (NHTSA), were cited and discussed amongst the participants.

Volpe Receives Awards for Videos on Ethics and Safety

Recently, two videos produced by the Volpe Center won Awards of Distinction in the 2002 Communicator Awards, an international competition honoring excellence in visual communications. Ms. Ann DiMare of the Aviation Safety Division and Mr. Richard Gopen of Planners Collaborative (a Volpe Center contractor) received an award for the video titled "Bribery Awareness." Developed for the Office of Inspector General, this video demonstrates how to detect and prevent contract and grant fraud. The centerpiece for nationwide ethics training for all U.S. DOT employees, the video is also used to educate other federal, state, and local government officials, as well as contractors and grantees.

The second award went to a series of training videos for the U.S. Army on using and maintaining a firefighting system that was recently installed on many of its ships – the FM-200 Shipboard Firefighting System. Mr. Mark Gentile and Mr. Robert Pray, both of the Technology Applications and Deployment Division, and Mr. Gopen of Planners Collaborative contributed to the video production. Mr. Gentile and Mr. Pray also oversaw the design, installation, and training for the FM-200 system.



A high priority of the DOT Office of Inspector General is to ensure that taxpayer dollars being spent on transportation projects are safeguarded from waste, fraud, and abuse. An excerpt of the OIG Bribery Awareness video can be viewed through http://www.oig.dot.gov/bribery_video.php.



Developing the Lowell National Historical Park Historic Trolley Plan (LNHP)

The Lowell National Historical Park (LNHP) commemorates the history of America's Industrial Revolution. This National Park Service (NPS) unit is located in Lowell, Massachusetts, once the largest industrial center in the United States and the site of the first planned industrial park. Since 1978, the LNHP has been one of many components of the city's well-planned revitalization, which is based on Lowell's architectural and cultural heritage. The park includes historic cotton textile mills, worker housing, and 5.6 miles of canals, as well as an historic light rail trolley (circa 1925) that transports visitors through the Park.

As part of the Volpe Center's support to LNHP, a Volpe team, led by Mr. Terry Sheehan of the Service and Operations Assessment Division, completed the LNHP Historic Trolley Planning Study. The Plan was developed to help the LNHP, the City of Lowell, and other partners assess opportunities for implementing a light rail system reminiscent of late 19th/early 20th Century trolley lines. The proposed system, which uses the LNHP's existing line as a backbone for the new service, is designed to improve mobility in downtown Lowell, where streets are narrow and automobile congestion is common. The system will connect sites operated by the LNHP and will provide access to Lowell's major activity centers, each of which has been influential in the city's economic turnaround: the Gallagher Intermodal Transportation Center, the Paul E. Tsongas Arena, LeLacheur Park, and the University of Massachusetts-Lowell campus.

The plan goes beyond simply identifying potential routes – it identifies how these routes coordinate with existing transit service, and what stop locations would best serve riders. The proposed system will re-create the historic trolley experience while providing regular transit service to work, shopping, and recreation. Approximately 28,000 people live within a quarter-mile of the proposed trolley route, which will include six streets that previously had trolley service. It is anticipated that annual ridership will range between 1 and 2 million riders, depending on fares and frequency of service. Benefits of the proposed service include:

- Addressing the transportation objectives of the LNHP;
- Servicing areas identified by the City for redevelopment and investment;
- Addressing traffic and parking issues that constrain economic growth;
- Establishing new attractions for visitors to Lowell; and
- Enhancing transportation links to other NPS sites in Massachusetts.



Historic trolleys transport visitors through the Lowell National Historical Park. The Volpe-developed planning study proposes to implement a light rail system that serves the city as well as the Park and employs trolleys similar to that shown above. (Photo by Kevin Harkins, courtesy of Lowell National Historical Park.)

An integral component of the plan is the construction of a combined operations and maintenance facility/National Street Car Museum in Lowell. The museum will house vehicles and artifacts from the Seashore Trolley Museum collection in Kennebunkport, Maine, and possibly transit artifacts from other streetcar museums nationwide. Lowell would benefit from having additional cars for their expansion program, and the Museum would benefit from increased public exposure, a possible new home for their extensive archives, and better access to federal funding to assist with overall institutional goals.

The next steps in this process will include an Environmental Assessment and possibly an Alternatives Analysis. The Volpe Center expects to be at the forefront of these activities. For the complete Volpe Center study, visit <http://www.heritagetrolley.org/existLowellStudy02.htm>.

Volpe Provides Quick-Response Analysis (DOT Transportation Policy Office)

The recent announcement of plans to close or sell major portions of Coach USA, the largest bus operator in the United States, prompted concern about the economic impact of such an action. After significant losses in the past two years, the parent company of Coach USA, Stagecoach PLC of Perth, Scotland, announced plans to reduce exposure to charter and leisure-related businesses and to concentrate on large business units and predictable revenue streams, including commuter and contract services in the northeastern United States.

In need of quick and accurate information, DOT's Transportation Policy Office within the Office of the Secretary contacted the Volpe Center. By mid-morning of the day of the announcement, Mr. Ed Ramsdell and Dr. Piyali Talukdar of the Economic and Industry Analysis Division had supplied a quick-response analysis of the potential impact on transit and long-distance bus transportation in the United States.

This analysis is related to an ongoing project the Center is performing for the Transportation Policy Office – a comprehensive study of the over-the-road-bus industry in the United States. Over-the-road buses (OTRB) are used in fixed-route, intercity, charter, or tour operations. OTRB intercity service is an especially important element of the nation's transportation system. A majority of intercity passengers are either rural or inner-city residents with low incomes and few if any other travel choices.

The proposed system will provide access to major activity centers in Lowell such as the Gallagher Intermodal Transportation Center, the Paul E. Tsongas Arena, LeLacheur Park, and the University of Massachusetts.

Volpe Findings Presented as Part of DOT's Professional Capacity Building Program (FHWA)

The Federal Highway Administration's (FHWA) Office of Operations provides national leadership for the management and operation of the surface transportation system. To provide input to the Congressional reauthorization process, and to enhance its ongoing dialogue on improving highway operations, the Office asked the Volpe Center to study how local operations activities compete for funding in the existing transportation decision-making process. The Volpe team interviewed more than 260 individuals representing 140 municipal and county public works agencies, metropolitan planning organizations (MPOs), transit agencies, and state departments of transportation (DOTs). The purpose of the study was to identify the extent to which state and local transportation officials are using federal funds for operations activities.

The study team, led by Mr. Allan DeBlasio of the Planning and Policy Analysis Division, found that, with some exceptions, local and state officials do not use federal funds for operations activities because traditional operations activities are considered a state or local function. When the officials did use federal funds, they usually used funds from congestion mitigation/air quality improvement programs. The Volpe team developed the following recommendations.

1. Increase the awareness of local and state highway managers and public officials regarding the need for operations activities and how to sustain them
2. Encourage operations planning at the local level
3. Encourage the development of performance measures and management systems
4. Clarify streamlined federal requirements for projects that are exempt from the National Environmental Protection Act
5. Increase understanding among state DOTs, MPOs, and local staff about eligibility of federal funds for operations
6. Use MPOs to help educate locals on funding operations
7. Aid MPOs in establishing project evaluation criteria to be used in the planning process

The findings of this study were presented to representatives of FHWA divisions and state DOTs from more than 15 states. Mr. David Jackson, also of the Planning and Policy Analysis Division, made the presentation as part of the DOT's Professional Capacity Building (PCB) Program, which provides training, education, technical assistance, and information resources to transportation professionals. The PCB Program is supported by a Volpe team led by Ms. Suzanne Sloan, also of the Division.



Results of a recent Volpe study were presented via Technical Training by Telephone, which has proven to be a successful distance-learning tool.

The team's support includes conducting an ongoing nationwide needs assessment; supporting a Web site for "one-stop shopping" for training and education information about Intelligent Transportation Systems (ITS) (<http://www.pcb.its.dot.gov>); assessing the needs of future transportation professionals at universities and colleges; developing a program for evaluating the effectiveness of new ITS training courses; and assisting the ITS Joint Program Office in developing ITS curricula for transportation professionals to use as a guide to their own development.

Mr. Jackson made his presentation via Technical Training by Telephone (T3), a new component of the PCB Distance Learning program. T3 sessions are interactive, audio teleconferences in which a subject-matter expert presents material supported by an accompanying slide presentation. Typically, the sessions last one hour and are followed by 30 minutes of question and answer. Students, regardless of their location, can access the slides on their own computers and follow along as they listen by phone. A quick, low-cost training option that combines familiar technologies, T3 has proven to be remarkably successful when used to address timely topics.

Papers & Presentations

- The Volpe Center co-sponsored, with the American Society of Civil Engineers, the 7th International Conference on Applications of Advanced Technology in Transportation, held in Cambridge, Massachusetts, August 5 through 7, 2002. In addition to the Volpe participation described in the November/ December 2002 edition of Volpe Highlights, Mr. Harvey A. Brand, Information Integration Division, presented the paper, "NASR - The FAA's System for Managing Aeronautical Information." The Center supports the Federal Aviation Administration (FAA) National Flight Data Center, and was integrally involved in the definition, development, and implementation of the National Airspace System Resources System.
- As part of the Volpe Center's Outreach and Education Activity, Dr. Aviva Brecher of the Office of Environmental Preservation and Systems Modernization presented the invited lecture "Bringing Magnetic Levitation Trains to the USA: Technology and Policy Challenges" at a meeting of the Magnetics Society of the Institute of Electrical and Electronics Engineers Central New England Council on December 4, 2002, in Shrewsbury, Massachusetts.
- On December 11, 2002, Mr. William Chernicoff of the Service and Operations Assessment Division participated in the Electric Vehicle Association of the Americas' Electric Transportation Industry Conference in Hollywood Beach, Florida. He served as a panelist and delivered a presentation titled "Transportation-Stationary Fuel Cell Synergies? A Systems Perspective." The Volpe Center is providing technical support in this area to a number of



Magnetic levitation (maglev) is an advanced transportation technology in which magnetic forces lift, propel, and guide a vehicle over a specially designed guideway. The Volpe Center supports the FRA's Maglev Deployment Program.

sponsors, including the Department of Defense, the National Park Service, and the Federal Transit Administration.

- Dr. James Hallock, Chief of the Aviation Safety Division, presented a paper at the American Institute of Aeronautics and Astronautics 41st Aerospace Sciences Meeting held in Reno, Nevada on January 6 and 7, 2003. The paper, "Wake Vortex Effects on Parallel Runway Operations," was coauthored by researchers at the Volpe Center and Deutsche Flugsicherung GmbH (DFS, the German Air Navigation organization).
- Mr. Jack Perkins of the Knowledge Engineering Division gave a presentation at the third NASA Ames Virtual Airspace Modeling and Simulation Technical Interchange Meeting on January 14, 2003. His presentation "A Methodology for Defining VAMS Scenario Requirements" described the analytic approach he developed to define operational scenario requirements for fast-time modeling national airspace operations.
- Dr. Tom Seliga, Surveillance and Assessment Division, presented two papers at the 19th International Conference on Interactive Information and Processing Systems for Meteorology, Oceanography, and Hydrology held in Long Beach, California, from February 10 through 13. The first paper, "Spatial-Temporal Behavior of RVR Visibility of ILS Runways at Select Major Airports," was coauthored with David A. Hazen and Leo G. Jacobs of Titan/System Resources Corporation, Billerica, Mass. and Deborah B. Lawrence of the FAA and addresses the natural variability of visibility that occurs along runways and throughout airports. The second paper, "Thunderstorm Characterizations Derived from Cloud to Ground Lightning Flash Data Based on Intercomparisons of Hovmöller Diagrams and Spatial Density Data," was coauthored with David A. Hazen of Titan/System Resources Corporation and Cynthia Schauland of the FAA and illustrates novel ways of displaying lightning data that provide valuable insights into the behavior of thunderstorms.

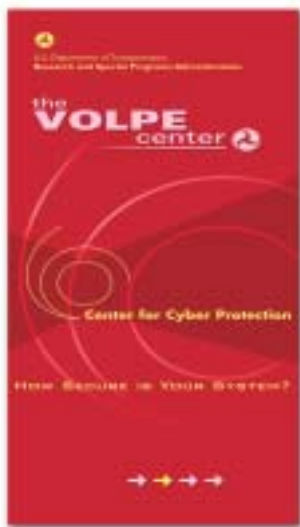
Director's Notes

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conjunction with the U.S. Army, the Center co-chaired an international conference on the prevention of closed head injury attended by leading engineers and researchers in the physical and medical sciences.

Education, training, and information management are vital components of any successful organization. A Volpe team supports the design and implementation of a comprehensive, nationwide DOT program to train transportation professionals in intelligent transportation systems. Other Center staff have developed award-winning training videos for the DOT and the U.S. Army. In addition, Volpe helps many clients manage information with the right technology, developing tools from databases to Web-based data analysis systems.

Volpe experts are often called on to address particularly critical issues. Some assignments are short term, such as the quick-response analysis recently provided to the DOT Transportation Policy Office. Others may be of indefinite length. Dr. James Hallock, Chief of Volpe's Aviation Safety Division, serves on the NASA Space Shuttle Program's review board. Since the Shuttle Columbia's accident, Dr. Hallock has been serving as a member of the Columbia Accident Investigation Board. His focus is analysis of the data on the shuttle from its launch through its disintegration. We are very proud of Dr. Hallock, and of the entire Volpe workforce, which enables the Center to continue to provide creative solutions to complex problems.



The Center for Cyber Protection

Since the 1980s, the Volpe Center has been helping its clients, including large federal agencies such as the Department of Defense and Federal Aviation Administration, to implement cyber security programs. As part of the Volpe Center's Infrastructure Protection and Operations Division, the Center for Cyber Protection has evolved into a center of excellence for cyber security needs. Experts at the Center for Cyber Protection have a robust understanding of both the cyber and physical components of transportation infrastructure.

A new brochure describes how the Center helps clients throughout the risk-management cycle of designing, assessing, implementing, and operating information security systems. To receive this brochure or other information about the Volpe Center, please use the contact information below.

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