



HIGHLIGHTS

Cambridge, Massachusetts

March/April 2006

National Transportation Systems Center



Curtis J. Tompkins

Letter from the Director

Volpe Center Team Response

The Volpe Center responds to the changing requirements of the transportation enterprise—supporting each modal administration of the Department of Transportation. Flexibility, adaptation, and response have, therefore, become part of the Volpe Center culture. Our staff has always recognized and welcomed opportunities to provide targeted support where and when it is required.

The Center staff comprises many technical experts who have become national authorities on specific transportation problems and solutions. However, Center leadership has always encouraged a multifunctional approach, and many senior staff members have a breadth of knowledge and capability that spans technical specialties and transportation modes.

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Inside

A Multidimensional Approach to **Integrated Vehicle Safety Research** for NHTSA

Predicting Transportation **Disease Migration** for CDC

Managing **Hazardous Materials** in the U.S. Mail for USPS

Focus



A critical lesson learned from the hurricanes that hit the Gulf Coast in September 2005 is the importance of robust transportation systems for disaster response and recovery. Demonstrating its wide range of capabilities, the Volpe Center provided FEMA with immediate emergency assistance and long-term transportation recovery planning support in the wakes of Hurricanes Katrina and Rita. Volpe planners also helped FEMA identify needs and plan transportation services to meet the needs of temporary housing-site residents. Other Volpe Center staff are helping to ensure that federal, state, and local agencies in all regions are prepared for emergency evacuations. Above, infrastructure damage from Hurricane Katrina. (©iStockphoto)

Hurricane Preparedness, Response, and Recovery: the Volpe Center's Expertise

During a disaster, emergency evacuation and logistic support can reduce the number of casualties and ameliorate suffering. In the aftermath, damaged transportation links must be restored as people rebuild their lives and their businesses. Moreover, comprehensive planning is needed to ensure that the transportation infrastructure is rebuilt to meet future needs—both normal and disaster related. As a multimodal transportation systems center, the Volpe Center understands the interrelated system components needed to restore the vitality of a region hit by disaster and protect it from future catastrophes.

The Center demonstrated this ability in response to Hurricanes Katrina and Rita. Representing DOT in support of the Federal Emergency

Management Agency (FEMA), Volpe Center experts in transportation and logistics provided key support in the following areas.

- Logistics management and emergency evacuations: planning and coordinating
- Transportation for displaced residents: implementing an emergency bus service between Baton Rouge and New Orleans
- Transit service planning: identifying and optimizing transit routes for temporary housing residents by using geographic information systems and innovative transit planning methods
- Participation in Louisiana Long-term Community Recovery: coordinating the roles of DOT agencies in support of state and local transportation planners
- Sharing lessons learned from the hurricane recovery effort with colleagues at the state and local levels

The Volpe Center was ideal for this role because of its multimodal expertise in transportation planning and operations, including emergency preparedness and response; experience with all levels of government and industry; and ability to foster collaborative working relationships among diverse partners. Addressing a range of problems in the Gulf region, Volpe teams demonstrated initiative in solving problems as they arose. From the days immediately preceding Hurricane Katrina landfall in late August 2005, through June 2006, more than 40 Volpe Center staff members utilized their expertise and extensive professional networks to summon transportation specialists in other agencies as needed, engaging and deploying a substantial number of transportation specialists to help in the response

National Response Plan: the Roles of FEMA and DOT

The National Response Plan provides a core operational plan for all national incident management. The plan, as revised in 2004, establishes a comprehensive approach and specifies how the resources of the federal government will work with state, local, and tribal governments and the private sector to respond to emergency or disaster situations. A Presidential Disaster Declaration of an emergency triggers financial and physical assistance through FEMA to support state and local governments in providing relief to their citizens. FEMA coordinates government-wide relief efforts—the DOT is a signatory of the National Response Plan and a partner of FEMA in disaster response and recovery.

The plan incorporates best practices and procedures from incident management disciplines in the public and private sector. The plan also groups capabilities and resources into 15 emergency response functions, such as transportation, communications, public health and firefighting, which are activated in a time of crisis. The plan establishes multi-agency coordinating structures at the field, regional, and headquarters levels. In the event of a potential emergency, FEMA can activate these organizations.

Within DOT's Office of the Secretary, the Regional Emergency Transportation Coordinator is responsible for transportation operational response activities through the Emergency Support Function-1 (ESF-1). As an integral part of the overall DOT emergency response and recovery planning capability, the Volpe Center has supported FEMA in two Emergency Support Functions: Transportation (ESF-1) and Long-Term Community Recovery (ESF-14).

and recovery effort. (Volpe Center staff members involved in the FEMA emergency response and recovery effort are listed at the end of this article.)

Immediate Response: Hurricane Katrina

Logistic Management of Evacuation and Emergency Supply Delivery

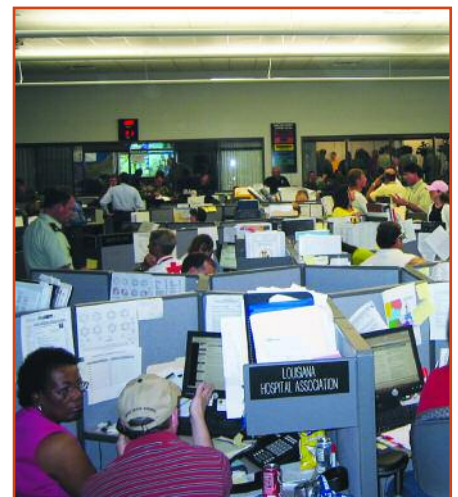
Mr. Terry Sheehan of the Center's Service and Operations Planning Division is the Regional Emergency Transportation Representative (RETREP) for DOT Regions I and II. On August 30, Mr. Sheehan was deployed to Barksdale Air Force Base near Shreveport, Louisiana, to help organize the Hurricane Katrina response and recovery effort. Shortly thereafter, he helped establish the FEMA Joint Field Office in Baton Rouge, where he "stood up" transportation operations. He worked closely with the DOT Region VI RETREP and related management to provide situational awareness for key decisionmakers, coordinated and tracked FEMA mission assignments, and compiled personnel and commodity movements.

As part of the DOT Regional Emergency Transportation Coordinator (RETCO) program, Mr. Sheehan played a major role in coordinating Hurricane Katrina evacuation activities among FEMA, Louisiana state agencies, parishes, cities, and towns. The scale of the disaster required an unprecedented response: in the first few days, 25,000 people were evacuated on 132 flights to locations all over the country, and 200,000 people were evacuated by bus, mainly to shelters in Louisiana and surrounding states. Mr. Sheehan also provided managerial and logistic support for 11,300 trucks, 40 helicopters, 7 jet aircraft, 1,355 buses, 7 Maritime Administration (MARAD) berthing ships, 2 Amtrak passenger trains, and 60 urban transit buses from around the country. By September 14, the emergency response team had delivered 19.6 million meals, ready-to-eat; 24 million liters of water; 13.8 million pounds of ice; 2,000 mobile homes; 5,400 travel trailers; and 150,000 rolls of plastic sheeting.

The Volpe Center's ability to react quickly and effectively also was demonstrated by the response to the DOT Chief of Staff's request for staff to assist FEMA in emergency relief activities. Nine Center staff members answered the call and were sent to a number of Gulf Coast sites during the weeks following landfall of Hurricanes Katrina and Rita. Their efforts were directed toward immediate emergency relief, and included matching hurricane victims to housing and other social services, as well as providing technical assistance in setting up computer networks and databases.

Hurricane Rita: Evacuation Plan Works

The Hurricane Katrina evacuation made it clear that more effective coordination was needed among federal emergency response agencies and the Louisiana Department of Transportation and Development (LADOTD). As



Staff from government agencies and private organizations worked around the clock at the Louisiana Emergency Operations Center (shown above) and the FEMA Joint Field Office to evacuate and shelter displaced residents and provide emergency supplies. A Volpe Center team was responsible for logistic management of evacuation and emergency supply delivery.

the DOT RETCO's representative, Mr. Sheehan played a lead role in effecting improved emergency evacuation procedures before Hurricane Rita's storm surge hit coastal areas of Louisiana. Mr. Sheehan laid the groundwork by meeting with LADOTD officials as soon as it was evident that another hurricane was approaching. A comprehensive evacuation plan was prepared and guidance distributed to all the parishes that might be affected. As a result, despite some initial delays, 250,000 people were evacuated ahead of Rita's storm surge and no lives were lost in Louisiana.



After the Hurricanes

Rebuilding Lives and Restoring Livelihoods: LA Swift

People who were evacuated from the New Orleans area to Baton Rouge were displaced not only from their homes, but also from their jobs. At the same time, recovery efforts in New Orleans needed workers, but the devastated city lacked housing. Volpe Center staff—in concert with the Federal Transit Administration (FTA)—collaborated with FEMA, LADOTD, and the public transit system operators in Baton Rouge and New Orleans to plan and implement “LA Swift,” a bus service to transport displaced residents between Baton Rouge and New Orleans and points between. As a result, many displaced New Orleans residents were able to access job opportunities associated with the reconstruction effort in the New Orleans area despite their temporary relocation to Baton Rouge. Total LA Swift ridership to date exceeds 70,000.

The Volpe Center collaborated with FEMA and the local transit systems to plan and implement LA Swift, an emergency bus service between Baton Rouge and New Orleans designed to help displaced New Orleans-area residents look for work, get to work, and attend to other recovery-related matters.

Providing Access to Essential Services: LA Moves

Many displaced Louisiana residents initially were evacuated to evacuation centers or hotels before being relocated to one of more than 450 FEMA temporary housing sites established throughout Louisiana. For the most part, temporary housing sites are located in areas not adequately served by transit. To help FEMA provide access to essential services for evacuees living in temporary housing, Volpe Center transportation planners, under the leadership of Mr. Matthew Rabkin of the Planning and Policy Analysis Division, working in conjunction with FTA regional staff, assisted in the design of a transportation service known as “LA Moves.” The Center staff worked quickly to establish an overall concept of operations and demonstrate a proposed service and route planning methodology in one of the most devastated parishes within 30 days. Based on the initial results, FEMA requested that the Center develop more than 100 routes across the state. Within 45 days, the Center developed and verified data about temporary housing populations and corresponding essential service locations (supermarkets, pharmacies, and banks) into planning deliberations and developed an overall acquisition management plan, including service require-

ments, performance measures, cost estimates, proposal evaluation criteria, a contractor selection plan, and a contract monitoring plan. The Volpe Center team helped develop a plan that allows FEMA to provide essential transportation service to temporary housing residents for a fraction of the \$225 million estimated initially by a logistics contractor.

Long-Term Community Recovery Planning

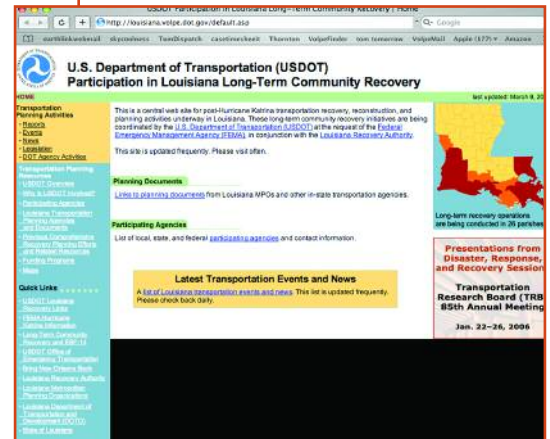
The most recent version of the National Response Plan outlined a new emergency support function: Long-Term Community Recovery. After Hurricanes Katrina and Rita, FEMA activated this function for the first time to create the structure under which federal agencies would work with Louisiana’s hardest-hit parishes on long-term recovery planning.

Eight federal agencies, including DOT, participated in the recovery planning effort. Mr. Eric Plosky of the Volpe Center’s Service and Operations Planning Division served as DOT’s overall coordinator; reporting to the DOT modal administrations and to the Office of Intelligence, Security, and Emergency Response, he led a combined field and support team that included Volpe staff and personnel from the Federal Highway Administration (FHWA), Federal Aviation Administration (FAA), MARAD, and Pipeline and Hazardous Materials Safety Administration (PHMSA).

The Volpe Center team served as a liaison for DOT, FEMA, and the other federal agencies participating in the recovery planning effort; coordinated with DOT’s modal administrations; and facilitated communications with the Louisiana Recovery Authority, the Louisiana Department of Transportation and Development, transit agencies, and port and airport authorities. The team quickly developed a website and other outreach materials that enhanced communications. In February 2006, a two-day meeting was conducted in Baton Rouge and in Lake Charles to bring together FEMA planners from 19 Louisiana parishes and staff from seven DOT administrations—FHWA, FAA, MARAD, PHMSA, FTA, the Federal Railroad Administration, and the Research and Innovative Technology Administration. The team worked closely with parish planning teams, helping them to determine their transportation needs, issues, and opportunities; working to ensure consistency with DOT programs, planning processes, and project criteria; making connections between local, state, and federal transportation stakeholders; and scoping the implementation of projects and the realization of their recovery priorities.

Sharing Lessons Learned

The scale of the 2005 hurricanes, and the ensuing suffering, loss of life, and loss of property, have led all levels of government to reexamine their disaster response and recovery plans and procedures. At the federal level, the White House issued a report in February 2006 on lessons learned from



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the response to Hurricane Katrina. (Find *The Federal Response to Hurricane Katrina: Lessons Learned* at <http://www.whitehouse.gov/reports/katrina-lessons-learned.pdf>.) The report concludes that there can be immediate improvements, but that a long-term, sustained commitment is required to transform the disaster response and recovery process and minimize the impact of future disasters on lives, property, and the economy. Key recommendations are to institutionalize a comprehensive National Preparedness System that includes integrated plans, procedures, training, and capabilities at all levels of government and incorporates the private sector, non-governmental organizations, faith-based and other grassroots groups, communities, and individual citizens; and to foster a new Culture of Preparedness emphasizing that the entire nation shares common goals and responsibilities for homeland security.

The report also recommends that the DOT, in coordination with other appropriate federal agencies, must be prepared to conduct mass evacuations when natural disasters or emergencies overwhelm or incapacitate state and local governments. As the DOT RETREP for Regions I and II, the Volpe Center's Terry Sheehan is working to develop, manage, and train a multimodal response cadre to carry out the DOT emergency response mission throughout New England, New York, and New Jersey.

At the local level, cities and states are reevaluating their emergency preparedness plans, and the Volpe Center is sharing lessons learned from Hurricanes Katrina and Rita. Mr. Sheehan recently spoke to the Massachusetts Emergency Management Agency. Discussing the White House report, he highlighted some of its recommendations pertaining to transportation in emergency evacuation: local transit officials should review emergency plans and existing infrastructure to identify and address deficiencies; local transit staff should be trained and exercised regularly in emergency procedures and evacuation plans; and the public and private sectors should collaborate to develop comprehensive urban evacuation plans.

Presenting lessons learned from his experience in Louisiana and discussing how to apply them to other localities, Mr. Sheehan covered three topics: planning and management, general operations, and site-specific operations. He stressed the importance of involving all appropriate sectors, agencies, and personnel in evacuation decisionmaking and management to ensure coordination among federal, state, and local evacuation plans; developing procedures for managing operations during evacuations; and developing effective protocols for communicating evacuation decisions to evacuees. For site-specific situations, responders must try to determine the scale of the evacuation and who needs transport. Evacuation plans should encompass all available transportation modes; designate evacuation routes and shelters; have security provided at all stages; provide guidelines for

"... we will continue to be partners every step of the way in making sure that the Gulf region has a transportation system that meets the needs of the local community and of the nation."

— DOT Secretary
Norman Y. Mineta
October 6, 2005

what people can bring with them; account for companion animals and pets; accommodate people with special needs and/or who are transit dependent; and include plans for orderly re-entry into the evacuated area.

The National Hurricane Center is predicting an above-normal tropical storm season for this year, with major hurricanes likely, and a similar pattern for several more years. The Volpe Center is confident of its ability to provide experienced support to prepare for or respond to future storms.



A Multidimensional Approach to Integrated Vehicle Safety Research (NHTSA)

As highway fatality rates level off, researchers must augment and revitalize traditional approaches to address emerging technical, demographic, and societal trends. Accordingly, the DOT’s Intelligent Transportation Systems (ITS) Program focuses in part on solving traffic safety problems through the development and deployment of advanced-technology safety systems. The Volpe Center’s vehicle safety research in ITS provides a foundation upon which industry can design and deploy safe and effective products that help drivers avoid hazards and mitigate the severity of motor vehicle crashes. Recently, at the invitation of the Society of Automotive Engineers (SAE), Dr. Wassim Najm of the Advanced Safety Technology Division presented a multidimensional perspective on this work—which includes crash-problem definition and safety-benefits estimation.

The Volpe Center has been conducting research for the National Highway Traffic Safety Administration’s (NHTSA) Office of Vehicle Safety Research since 1999. Through rigorous analysis of crash scenarios, Volpe researchers have gained a thorough understanding of collision types and causes, and have identified four collision types with the greatest potential for prevention—rear-end, lane-change, crossing-path, and single-vehicle road departures. After developing countermeasure concepts for a crash type, Volpe Center teams determine high-level functional requirements for a potential crash-avoidance system and assess existing technologies. Industry then designs and builds new systems based on these requirements. As an independent evaluator, the Volpe Center assesses industry prototypes for safety benefits, driver acceptance, system capability, and deployment potential.

At the 2006 SAE Automotive Dynamics Stability and Controls Conference in Novi, Michigan, Dr. Najm presented “Multi-Dimensional Approach to Integrated Vehicle Safety Research,” proposing a framework based on a

Hurricane Katrina and Rita Volpe Center Emergency Response Teams, Long-Term Recovery Teams, and Volunteers

Project Management and On-site Representatives

<i>Gary Ritter</i>	<i>Matthew Rabkin</i>
<i>Terry Sheehan</i>	<i>Eric Plosky</i>

Technical Team

<i>Natasha Arnopolskaya</i>	<i>Tonya Miller</i>
<i>Aviva Brecher</i>	<i>Tashi Ngamdung</i>
<i>Frances Fisher</i>	<i>Steve Peck</i>
<i>Gerry Flood</i>	<i>Theresa Perrone</i>
<i>Bob Hallett</i>	<i>Lauren Piccolo</i>
<i>Matthew Isaacs</i>	<i>Carson Poe</i>
<i>David Jackson</i>	<i>Ben Rasmussen</i>
<i>Melissa Laube</i>	<i>Dave Rutyna</i>
<i>Maureen Lynch</i>	<i>Scott Smith</i>
<i>Eli Machek</i>	<i>David Spiller</i>

Acquisition, Legal, and Administrative Support

<i>Jeffrey Berenson</i>	<i>Mark Plecinoga</i>
<i>Eva Dykstra</i>	<i>Ana Troncoso</i>
<i>Mirna Gustave</i>	<i>Steve Walkinshaw</i>
<i>Katie Kelly</i>	<i>Gregory Zevitas</i>
<i>Maria McCarthy</i>	

Volpe Center Volunteers

<i>John Brewer</i>	<i>Michele Priante</i>
<i>Linda Byrne</i>	<i>Matthew Rabkin</i>
<i>McCharles Craven</i>	<i>Alison Shedd</i>
<i>Ryan Cummings</i>	<i>Bill Sullivan</i>
<i>Jonathan Jerome</i>	<i>Courtney Zamora</i>

relational Haddon matrix that integrates advanced technology systems to improve motor vehicle safety. The Haddon matrix breaks the motor vehicle crash into separate pre-event, event, and post-event areas, which are cross-correlated with human, vehicle, and environmental factors. Dr. Najm's application of the Haddon matrix links the three areas by driver-vehicle response to each area, and provides sequential intervention opportunities to avoid crashes, prevent injuries, and/or mitigate injury severity. This approach will maximize the potential safety benefits of today's countermeasure technologies, not only integrating systems in each area, but also integrating systems across the three areas.



Predicting Transportation Disease Migration (CDC/AFMIC)

Transportation has always been a factor in the spread of disease, but the scope of today's aviation system compounds the challenge of tracking and preventing disease migration for agencies such as the Centers for Disease Control (CDC) and the Armed Forces Medical Intelligence Center (AFMIC). The Volpe Center recently delivered prototype software to these agencies that improves the analysis of air traffic patterns contributing to disease transmission. CDC's Division of Global Migration and Quarantine is using the Transportation Disease Migration Operational Prototype to prepare for potential pandemic events and to respond to disease outbreaks.

The software is designed to enable users to estimate air passenger movements to improve understanding of and response to potential and actual disease migration. It includes a web interface for querying an aircraft flight database by flight, city, country, or continent regions, and for maintaining CDC's Travelers' Health Notices. Batch processing software populates the database with both historic and current flight data in conjunction with extensive geographic, airport, and aircraft reference tables. The historic and current data were supplied by two Volpe Center divisions from systems they developed for the Federal Aviation Administration (FAA) (with the permission of the sponsors). The Environmental Measurement and Modeling Division provided the historic data from FAA's System for Assessing Aviation Global Emissions, and the Automation Applications Division provided the current data from FAA's Enhanced Traffic Management System. The software was designed and developed by the Program Manager, Ms. Ruth Hunter, National Expert in Logistics and Emergency Management, of the Safety Information Systems Division, and

Integrated Vehicle Safety Research

Goal

Facilitate the development and deployment of advanced technology safety systems

Objectives

- Define the crash problem to support the development of countermeasure concepts, performance specifications, system build, and test procedures
- Estimate safety benefits to aid deployment decision
- Identify data needs to enhance crash problem definition and safety benefits estimation

Mr. Richard Wright, National Expert in Traffic Management and Information Systems, of the Environmental Measurement and Modeling Division, supported by Ms. Judy Hou and Mr. Ben Lu of the TRIPS on-site Technical Support Contract led by Computer Sciences Corporation.

Managing HAZMAT in the Mail (USPS)

One of the greatest challenges facing the United States Postal Service (USPS) is the control of hazardous materials (HAZMAT), both declared and undeclared, in the mail stream. For several years, the Volpe Center has been supporting the USPS Aviation Security Group's HAZMAT Program in keeping the mail safe from potential impacts of HAZMAT and other restricted materials. Many potentially hazardous or restricted materials are common household items, such as cosmetics, cleaning supplies, aerosols, and alcoholic beverages. Accordingly, efforts include promoting HAZMAT awareness among USPS customers as well as USPS personnel in all functional areas of acceptance, handling and processing, tendering, dispatch, and delivery. A significant portion of the Volpe Center's support includes developing and conducting HAZMAT awareness training, and preparing instructional materials and standard operating procedures.

The Volpe Center team designs training to instruct postal employees in proper procedures for both accepting and handling mailable HAZMAT, as well as procedures to identify and handle restricted and undeclared non-mailable HAZMAT that is improperly commingled in the mail stream. Training materials and approaches are tailored to the requirements of each functional area. Dissemination approaches range from conducting end-user and train-the-trainer classes to employing training videos and web-based classes. More than 1.5 million hours of training have been presented to more than 1 million USPS personnel since FY2000.

HAZMAT training is updated and reissued on a regular basis. This fiscal year, new function-specific training was developed and is being disseminated to approximately 500,000 processing, delivery, and retail personnel using a tiered approach. In this approach, the Volpe Center trains designated postal employees who in turn train groups of employees. In 2006, the Center has conducted a 16-hour, train-the-trainer class to 500 USPS processing employees; an 8-hour coordinator training class to 180 USPS delivery/retail operations coordinators; and additional training to 120 USPS Mail Recovery Center employees. Additional web-based training classes are being developed for dissemination in FY2007.

Mr. Mark Raney of the Environmental Engineering Division is the Volpe Center project manager; he is supported by Mr. Paul Kudarauskas, also of the Division.

A Volpe Center team designs training for USPS employees in identifying and handling both declared and undeclared HAZMAT in the mail stream.

Volpe Contributes to Annual TRB Meeting

The Transportation Research Board's 2006 Annual Meeting took place in Washington, D.C., January 22 – 26, 2006. The Volpe Center was well represented in this diverse group of researchers, academics, administrators, and others from government and industry. The theme for 2006 was "Transportation 2025: Getting There from Here." Also highlighted: "The Interstate Highway Systems 50th Anniversary—What Have We Learned?" and "SAFETEA-LU: What it Means for Research and the Transportation Community." Volpe Center staff presided over conference sessions, committee meetings, and workshops, and gave several presentations. Papers from this conference are on the 2006 TRB 85th Annual Meeting: Compendium of Papers CD-ROM, available for purchase at <http://www.trb.org/meeting/default.asp>.

Sessions Chaired

- Ms. Anya Carroll of the Rail and Transit Systems Division chaired the following sessions: **Pedestrian Issues at Highway-Rail Grade Crossings** sponsored by the Highway/Rail Grade Crossings Committee, and **Highway-Rail Grade Crossings Methodologies** sponsored by the Highway/Rail Grade Crossings Committee.
- Dr. Eugene Gilbo of the Traffic Flow Management Division organized and chaired **From Deterministic to Stochastic Air Traffic Flow Management** sponsored by the Airfield and Airspace Capacity and Delay Committee.
- Mr. Adrian D. Hellman of the Rail and Transit Systems Division presided over **Positive Train Control Regulations and Developments** sponsored by the Railroad Operating Technologies Committee.

Papers Presented

- Mr. Gregg G. Fleming, Chief of the Environmental Measurement and Modeling Division, presented "**Development of Integrated Air Quality and Noise Model.**"
- Dr. Eugene Gilbo of the Traffic Flow Management Division and Dr. Scott Smith of the Service and Operations Planning Division presented "**Improving Air Traffic Demand Predictions for Traffic Flow Management Decision Making.**"
- Mr. Jeffrey E. Gordon of the Structures and Dynamics Division presented "**Towards the Prevention of Broken Rail Derailments.**"
- Dr. Brian Y. Kim, Dr. Roger Wayson, and Mr. Gregg G. Fleming, all of the Environmental Measurement and Modeling Division, presented "**Development of the Traffic Air Quality Simulation Model (TRAQSIM).**"
- Ms. Annalynn Lacombe of the Economic and Industry Analysis Division and Ms. Lydia E. Mercado of the Research and Innovative Technology Administration

presented **“U.S. Department of Transportation Research Program Performance: Planning and Accountability.”**

- Ms. Jane Lappin of the Economic and Industry Analysis Division presented **“Overview of Private-Sector Advanced Traveler Information Service Deployments.”**
- Ms. Melissa M. Laube, Service and Operations Planning Division, and Mr. James H. Evans of the U.S. National Park Service presented **“Financial Planning for Transit Services in the National Parks.”**
- Ms. Margaret Petrella and Ms. Jane Lappin of the Economic and Industry Analysis Division, Ms. Stacy Bricker of NuStats, and Dr. Michael Patrick Hunter of the Georgia Institute of Technology presented **“Driver Satisfaction with Urban Arterial After Installation of Adaptive Signal System.”**
- Mr. Eric Plosky and Mr. Gary T. Ritter of the Service and Operations Planning Division, and Ms. Elizabeth Bent, formerly of EG&G Technical Services, Inc. (an on-site Volpe Center contractor), presented **“Intelligent Transportation Systems and the National Park Service: Current Status and Potential Applications.”**
- Dr. Joyce Ranney of the Human Factors Division and Dr. Michael Coplen of the Federal Railroad Administration presented **“Efficacy of Behavior-Based Safety in the Railroad Industry: Amtrak EAGLES Project.”**
- Dr. Alan Rao of the Rail and Transit Systems Division presented **“Rapid Developments of Rail Transit Systems in Asia.”**
- Ms. Suzanne Sposato of the Rail and Transit Systems Division presented **“Public Education and Enforcement Research Study.”** (See photo)
- Ms. Ann Steffes of the Planning and Policy Analysis Division co-authored **“Summary of Recommendations from Travel Model Improvement Program Peer Review Program,”** which was presented by Mr. Michael Culp of the FHWA.
- Mr. David Tyrell of the Structures and Dynamics Division presented **“Recent Developments in Rail Passenger Car Crashworthiness.”**

Workshops

- Ms. Jane Lappin of the Economic and Industry Analysis Division participated in a panel addressing measurement of signal system operations, discussing the **measurement implications of driver satisfaction with signal-system performance**, as part of the Signal Systems Committee Workshop.
- Dr. Stephen Popkin, Chief of the Human Factors Division, and Dr. Richard Hanowski of Virginia Tech Transportation Institute presided over **“Fatigue in Transportation: Issues and Countermeasures for Operators of Trucks, Trains, and Automobiles.”**
- Dr. Joyce Ranney of the Human Factors Division and Dr. Mark K. Ricci of the Brotherhood of Locomotive Engineers presided over **“Danger: People Working—Multimodal Lessons on Improving Safety Through Work Process Observations and Process Improvement Methods.”**



Public Education and Enforcement Research Study. Using video data collection, the Volpe Center monitored three highway-rail intersections in Illinois as education and enforcement campaigns to reduce grade-crossing violations were conducted in the community, and analyzed the effect of the programs on motorist and pedestrian behavior. An overall reduction in violations occurred, particularly among pedestrians. Above, a video image of enforcement efforts at a study site.

- Dr. Judith Rochat, Environmental Measurement and Modeling Division, presented “**Influence of Concrete Pavement Texture on the FHWA Traffic Noise Model Predictions**” during “Quiet Concrete Pavements: Taking Knowledge to Solutions.”

Committee Meetings

- Ms. Anya A. Carroll of the Rail and Transit Systems Division chaired the full committee session of the **Highway/Rail Grade Crossings Committee**.
- Ms. Jane Lappin of the Economic and Industry Analysis Division chaired a meeting of the ITS International **Benefits, Evaluation, and Costs Working Group**, a subcommittee of the TRB ITS Committee and an independent international working group.
- Dr. Douglass B. Lee of the Economic and Industry Analysis Division chaired the full committee session of the **Transportation Economics Committee** and the Transportation Economics Conference Planning Subcommittee.
- Dr. Judith L. Rochat of the Environmental Measurement and Modeling Division chaired a meeting of the Transportation-Related Noise and Vibration Committee: **Highway Noise and Vibration Subcommittee**.

Poster Sessions

Dr. Douglass B. Lee of the Economic and Industry Analysis Division presided over the poster session “**Transportation Economics**.”

Published & Presented

- **Investigating Loran-C as a Backup to GPS.** Dr. James Carroll of the Advanced Communication, Navigation, and Surveillance (CNS) Technologies Division presented “Performance Analysis of an Integrated GPS/Loran-C Tracking System” at the National Technical Meeting of the Institute of Navigation held in Monterey, California, January 17 – 20, 2006.
- **Aviation Range and Aerospace Meteorology.** Dr. Thomas Seliga of the Advanced Communication, Navigation, and Surveillance (CNS) Technologies Division co-authored two papers presented at the 12th Conference on Aviation Range and Aerospace Meteorology held in Atlanta, Georgia, January 28 – 30, 2006.
“Demonstration of the Use of Runway Visual Range (RVR) Visibility Sensors for Estimating Snowfall Rates throughout the Airport Domain,” was co-authored by Mr. David Hazen of Titan/System Resources Corporation and Mr. Stephen Burley of the Federal Aviation Administration (<http://ams.confex.com/ams/pdfpapers/104640.pdf>).
“Evaluation of Wind Algorithms for Reporting Wind Speed and Gust for Use in Air Traffic Control Towers,” was co-authored by Mr. Hazen (<http://ams.confex.com/ams/pdfpapers/104665.pdf>).

Letter from the Director

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This philosophy was particularly relevant following the Gulf Coast hurricanes of 2005, when many of our staff members provided immediate support to emergency logistics and transportation requirements. Within the framework of the National Response Plan, FEMA can call on other federal agencies to provide support in an emergency. Our flexible organization enabled us to free up key individuals with the right capabilities to provide both immediate and long-term assistance—without disrupting our services to other agencies. The Focus article in this issue of *Highlights* provides an overview of our response.

Our support would not have been possible without the dedication to public service exhibited by our staff members, who demonstrated the willingness and commitment to relocate for several months to help the nation respond in time of crisis.

This kind of dedicated public service is also characteristic of our senior staff. I would like to acknowledge Dr. James “Jim” Hallock, Chief of the Center’s Safety Information Systems Division, on his appointment as a Senior Technical Expert (ST) for Air and Space Transportation Safety Risk Management. Only a select few individuals government-wide achieve an ST position; this appointment recognizes Dr. Hallock’s extensive technical credentials and record of scientific accomplishments. An internationally known researcher, he served as a member of the space shuttle Columbia Accident Investigation Board.

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