



HIGHLIGHTS

Cambridge, Massachusetts

Jan/Feb 2002

National Transportation Systems Center

Focus

Volpe Contributes to the TRB's 81st Annual Meeting

Offering an exceptional environment for knowledge sharing in transportation research, policy, and practice, the Transportation Research Board's (TRB) annual meeting drew approximately 8,000 transportation professionals from around the world to Washington, D.C., from January 13 through 17, 2002. The Center was well represented in this diverse group of researchers, academics, administrators, and others from government and industry. Volpe staff presided over 15 sessions or meetings, participated in nearly 40 sessions or meetings, delivered 15 papers or presentations, and developed and staffed the Volpe Center exhibit, DOT's Small Business Innovation Research Program exhibit, RSPA's University Transportation Centers 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 environmental impacts of transportation, ferry market analysis, educating transportation



At the recent TRB annual meeting, the Center's exhibit showcased Volpe's expertise in Motor Vehicle Crash Avoidance, Motor Vehicle Crashworthiness, and Rail Equipment Crashworthiness.



Richard R. John

Director's Notes

Supporting the President's Homeland Security Mission

Threats to national security, especially through our transportation system, have become a reality that to most U.S. citizens was unthinkable before September 11, 2001. The feelings of shock and vulnerability of that day have turned to vigilance and determination to do everything possible to protect our homeland. As President Bush said in his recent State of the Union address, the government intends to do everything possible to protect our citizens and strengthen our nation against the ongoing threat of another attack. The Volpe Center is dedicated to actively supporting the President's efforts to improve homeland security.

The Center has a 30-year history of supporting the government in addressing security for the nation's transportation system, the military, and other critical facilities and operations.

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Inside

Maintaining and enhancing SPAS, the FAA's **decision-support tool for monitoring safety performance**

Improving **motor carrier safety** with data management support to the FMCSA

Providing **sustainable restoration of navigation capabilities** in Nicaragua

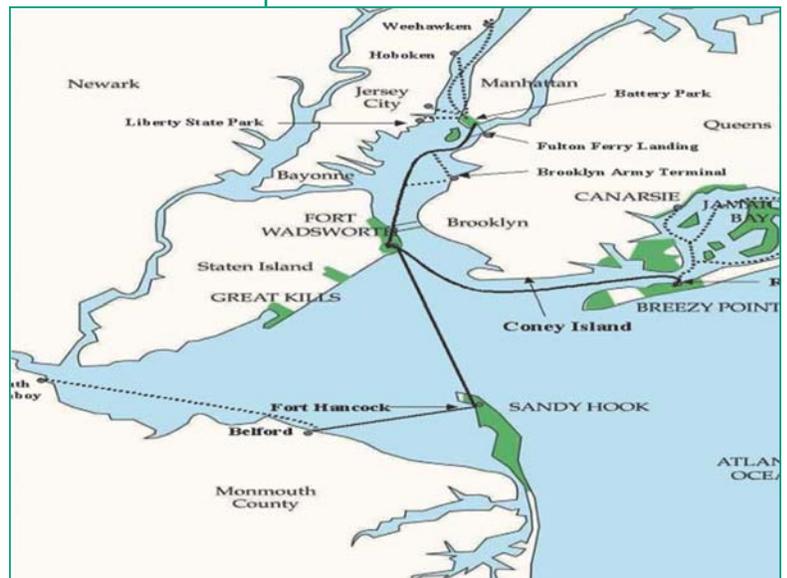
Supporting development of the DoD's **ionospheric research facility** in Alaska

professionals, intelligent transportation systems, transportation economics, transportation networks, railroad-highway grade crossings, transportation and sustainability, airport capacity management, collision avoidance systems, railroad track structure and maintenance, rail equipment crashworthiness, and critical infrastructure protection.

Volpe Participants

- Ms. Anya Carroll, Railroad Systems Division, presented the paper "North Carolina Sealed Corridor Phase I Study Assessment" at the session titled "Railroad-Highway Crossing for 2002, Part 1." The session was sponsored by the Committee on Railroad-Highway Grade Crossings. She serves as secretary of the Rail-Highway Grade Crossings Committee meeting, and will assume the chair of the committee in 2003.
- Mr. Allan DeBlasio, Planning and Policy Analysis Division, presented findings from the review "Local Funding of ITS and Operations Activities" at the workshop titled "The Truth About the Costs of Intelligent Transportation Systems: Implications for Improving Planning and Operations in Traffic Management." The Committee on Intelligent Transportation Systems sponsored the workshop.
- Mr. Robert Dorer, Chief of the Railroad Systems Division, organized and presided over the session titled "Progress in Passenger Guided Ground Systems Safety and Efficiency," which was sponsored by the Committee on Guided Intercity Passenger Transportation. As chair of this committee, he organized and chaired the annual meeting.
- Mr. Michael Dyer, Technology Applications and Deployment Division, and Ms. Melissa Laube, Service and Operations Assessment Division, presented "Ferry Market Analysis: National Parks of New York Harbor" at the session titled "Ferry Planning and Market Analysis" sponsored by the Committee on Ferry Transportation.

At TRB's 81st Annual Meeting, Volpe staff presided over 15 sessions or meetings, participated in nearly 40 sessions or meetings, and delivered 15 papers or presentations.



"Ferry Market Analysis: National Parks of New York Harbor" noted potential ferry routes in the Gateway National Recreation Area. The park covers 26,000 acres in the heart of the New York metropolitan area and extends through three New York City boroughs and into northern New Jersey.

- Mr. Gregg Fleming, Chief of the Environmental Measurement and Modeling Division, organized and chaired the Committee on Transportation-Related Noise and Vibration; he also organized the session on Highway Noise Modeling and the session on Transportation-Related Noise Issues.
- Dr. Eugene Gilbo of the Automation Applications Division organized and presided over a session titled “New Approaches for Airport Capacity and Demand Management,” during which he also presented the paper “Airport Capacity Management: Arrival and Departure Interactions.” Dr. Gilbo made a second presentation titled “Airport Arrival/Departure Tradeoff Optimization Tool for Strategic TFM [Traffic Flow Management]” at a session titled “Airport Benchmarking: New Performance Metrics,” sponsored by the Committee on Airfield and Airspace Capacity and Delay and the Committee on Aviation Economics and Forecasting. Dr. Gilbo demonstrated the current version of the decision support tool that is being developed at the Volpe Center for air traffic management specialists.
- Mr. Adrian Hellman, Railroad Systems Division, presented "Preliminary Evaluation of the School Street Four-Quadrant Gate Highway-Railroad Grade Crossing" at the session titled "Railroad-Highway Grade Crossings for 2002, Part 1." The session was sponsored by the Committee on Railroad-Highway Grade Crossings. The paper was co-authored by the principal investigator for this research, Ms. Anya Carroll of the Division, as well as Mr. Michael Lee and Ms. Marsha Haines of EG&G Technical Services, a Volpe Center contractor.
- Mr. Thomas F. Humphrey, Office of System and Economic Assessment, presided over the session "Educating the Transportation Planning Professionals of the Future." The session was sponsored by the Committee on Intergovernmental Relations and Policy Processes, the Committee on Statewide Multimodal Transportation Planning, the Committee on Transportation Education and Training, the Committee on Transit Management and Performance, and the Committee on Rail Transit Systems.

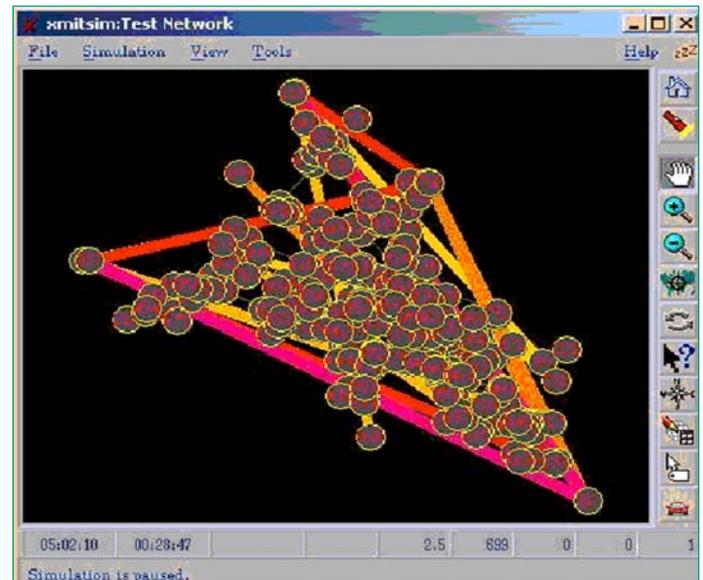
Airport Capacity Management

The Volpe presentation "Airport Capacity Management: Arrival and Departure Interactions" presented a new approach that allows for additional airport operational resources by employing the interdependence of airport arrival and departure capacity.



Four-quadrant gates at the School Street Grade Crossing in Groton, Connecticut, the demonstration site for four-quadrant gate technology along Amtrak's Northeast High-Speed Rail Corridor. When all four arms of the gate are down, as shown above, vehicles are effectively blocked from entering the crossing.

- Dr. Haris Koutsopoulos, Service and Operations Assessment Division, presented "Operational Planning with Simulation-Based Dynamic Traffic Assignment: Mesoscopic Supply Simulation" at the session titled "State of the Art in Dynamic Traffic Assignment Modeling for Network Operations Planning, Part 1," sponsored by the Committee on Traffic Flow Theory and Characteristics. He also presented "Evaluation of Traffic Estimation and Prediction Capabilities" at the session titled "State of the Art in Dynamic Traffic Assignment Modeling for Network Operations Planning, Part 2." At the poster session "Modeling Transportation Networks," he presented a poster titled "Network State Estimation and Prediction for Real-Time Transportation Management Applications."
- Dr. Douglass Lee, Economic and Industry Analysis Division, presented "Defining and Measuring Equity Impacts of Congestion Pricing" at the session titled "Equity Implications of Congestion Pricing." He also presided over the session titled "Economic Analysis of Pricing and Social Issues in Transportation." Both sessions were sponsored by the Committee on Transportation Economics, of which Dr. Lee is a member. He also presented the paper "Fundamentals of Life-Cycle Cost Analysis" at the session titled "Asset Valuation Issues" sponsored by the Task Force on Transportation Asset Management.
- Mr. William Lyons, Planning and Policy Analysis Division, represented the core team of the US DOT Center for Climate Change and Environmental Forecasting at the meeting of the Task Force on Transportation and Sustainability and the Joint Subcommittee on Sustainable Transportation Evaluation and Indicators of Sustainability. He presented an update on the Center and the Volpe project "Integration of Greenhouse Gas Reduction Goals in Statewide and Local Transportation Planning."
- Dr. Judith Rochat of the Environmental Measurement and Modeling Division presided over the session "Highway Noise Modeling," which was sponsored by the Committee on Transportation-Related Noise and Vibration.
- Mr. David Skinner, Operator Performance and Safety Analysis Division, co-chaired the Committee on Safe Mobility of Older Persons – Driving Cessation Discussion.



Simulation programs such as DynaMIT and MITSIMLab (shown above) were discussed in the Volpe presentation "Evaluation of Traffic Estimation and Prediction Capabilities" and in "Calibration and Evaluation of MITSIMLab in Stockholm," co-authored by Volpe staff.

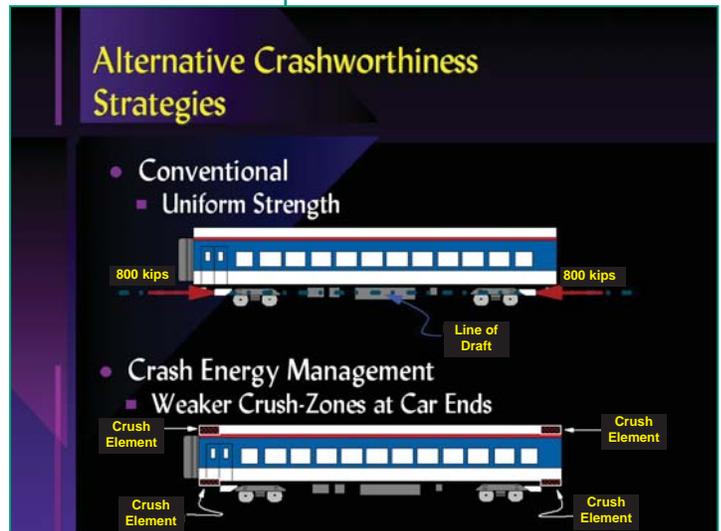
Highway Noise Modeling

The Acoustics Facility of the Environmental Measurement and Modeling Division has been engaged in all aspects of transportation-related noise and vibration for more than 30 years. Highway noise work includes the development and ongoing evaluation of FHWA's Traffic Noise Model, which is used by 500 entities in 12 countries.

- Dr. Mary Stearns, Operator Performance and Safety Analysis Division, presented "Approach to User Acceptance of New Technology" in the session titled "Vehicle-Highway Automated Systems: In-Vehicle and Collision Avoidance Systems." Mr. Wassim Najm and Ms. Linda Boyle of the Accident Prevention Division co-authored the paper. The session was sponsored by the Committee on Vehicle-Highway Automation.
- Dr. Donald Sussman, Chief of the Operator Performance and Safety Analysis Division, chaired the Subcommittee on Railroad Operational Safety and co-chaired the Committee on Safe Mobility of Older Persons – Driving Cessation Discussion.
- Dr. Theodore Sussmann, Structures and Dynamics Division, served as co-organizer and co-presiding officer for the session titled "Track Structure Modeling and Maintenance Planning." The session was sponsored by the Committee on Railroad Track Structure System Design and the Committee on Railway Maintenance. Dr. Sussman is a member of both committees.
- Mr. Eloy Martinez, Structures and Dynamics Division, presented "Evaluation of Passenger Rail Equipment Crashworthiness Strategies," authored by Mr. David Tyrell of the Division. The paper was presented at the session "Progress in Passenger Guided Ground System Safety and Efficiency," sponsored by the Committee on Guided Intercity Passenger Transportation.
- Ms. Judith Warren, Information Integration Division, presented a paper titled "The Use of Photo Enforcement at Highway-Rail Grade Crossings in the U.S." at the session titled "Railroad-Highway Crossing for 2002, Part 1." The session was sponsored by the Committee on Railroad-Highway Grade Crossings. The paper was co-authored by Ms. Anya Carroll of the Railroad Systems Division.
- Dr. C. Y. David Yang, Accident Prevention Division, served as meeting co-chair for the Subcommittee on Advanced Traveler Information Systems.

Operator Performance and Safety Analysis Division

This Volpe division resolves problems across all transportation modes by analyzing the relationship between human behavior and transportation safety and productivity.



"Evaluation of Passenger Rail Equipment Crashworthiness Strategies" compared two alternative strategies: conventional, wherein rail cars are of uniform strength, and crash energy management (CEM), wherein rail cars have weaker crush zones at each end. Volpe's evaluation concluded that CEM provides a significant increase in crashworthiness over the conventional approach.

Volpe Exhibit

The Volpe Center exhibit, "Preventing Injuries, Saving Lives," presented recent work in Motor Vehicle Crash Avoidance, Motor Vehicle Crashworthiness, and Rail Equipment Crashworthiness. Volpe's support to the National Highway Traffic Safety Administration, Federal Railroad Administration, Federal Motor Carrier Safety Administration, and Federal Highway Administration was highlighted. The Crash Avoidance display featured Volpe's evaluation of an intelligent cruise control system, videos of the Volpe-designed characterization tests of the Volvo-Eaton/VORAD Crash Warning System, and a demonstration of a PC-based, multimedia, data-analysis tool to be used in Volpe's evaluation of the GM Rear-End Crash Warning System. The Motor Vehicle Crashworthiness display featured computer animations of vehicle crash simulations, including full-vehicle, finite element, and occupant models in frontal and side impacts. This display also presented Volpe's Fleet Systems Model, which is used to evaluate the impact of vehicle design changes and the introduction of new safety systems on the U.S. automobile fleet. The Rail Equipment Crashworthiness display included overviews of ongoing, full-scale, impact testing; field investigations of occupant injury in passenger train accidents; and support to federal rule-making and development of industry standards.



Evaluating Locomotive Horn Sound Levels (FRA)

For the past several years, the Volpe Center has supported the Federal Railroad Administration's (FRA) Office of Research and Development and Office of Safety Enforcement in evaluating locomotive horn systems. This work was prompted by concerns about the audibility of locomotive horns at highway-rail grade crossings in modern sound-insulated highway vehicles, as well as by complaints of abutting residents who have protested excessive exposure to the sound of these horns.

Recent work responds to comments on the FRA Proposed Rule for the Use of Locomotive Horns at Highway-Rail Grade Crossings. Many comments were received on a particular provision within the rule

Supporting FRA Rulemaking

Volpe's painstaking research into the safety implications of the positioning of horns on locomotives will support FRA rulemaking.

stating that the sound level generated by the horn, when measured at the side of the locomotive, shall not exceed the sound level measured in front of the locomotive. In the late 1980s, it became the de facto standard to install horns on the top/center portion of the locomotive. This position was chosen in an attempt to reduce the noise exposure for the locomotive cab occupants. However, it resulted in measured sound levels to the side of the locomotive that were often higher than levels in front of the locomotive, and which increased noise level exposure to residences along the railway right-of-way. Consequently, this provision in the FRA's Proposed Rule may force railroad operators to relocate many installed horns.

The Environmental Measurement and Modeling Division performed a measurement study with the primary objective of documenting precisely the effect of installation location on the railroad horn sound level output at distances around the locomotive and inside the locomotive cab. The Volpe study recommended horn locations as far forward and high as possible in order to meet requirements that limit sound directed to the side while minimizing noise levels inside the cab.

At the 7th International Workshop on Railway Noise, held in Portland, Maine, from October 24 to 27, 2001, Ms. Amanda Rapoza presented "Analysis of Railroad Horn Detectability," based on this study.

Ongoing analyses will use the data measured as a part of this study to assess both the change in effect on community noise level and the change in effect on motorist warning. It is anticipated that, together, these analyses will provide the FRA with the empirical information necessary to write a final rule.

Enhancing the Safety Performance Analysis System (FAA)

The Federal Aviation Administration's (FAA) Flight Standards Service is responsible for certifying air operators, air agencies, and air personnel, and for implementing and enforcing the federal regulations that oversee the safety of passengers using commercial air operators. Flight Standards aviation safety inspectors use the automated Safety Performance Analysis System (SPAS) to monitor the performance of certificate holders and to identify those that pose a greater-than-normal safety risk. Volpe's Aviation Safety Division supports development of SPAS based on user needs and technological advances. Two recent upgrade releases incorporate improved capabilities for this decision support system that include enhanced: National Transportation Safety Board query and browse capability, aircraft profiles, operator performance measures, engine profiles, aircraft performance measures, and enhanced printing and display of query and browse result lists.



Four horn installation locations were chosen for the study as representative of those either currently in service or being considered for service. Note that all horns were centered over the width of the locomotive.

SPAS monitors performance measures and calls attention to deviations from normal patterns. Volpe maintains and enhances this decision-support tool in collaboration with FAA users.

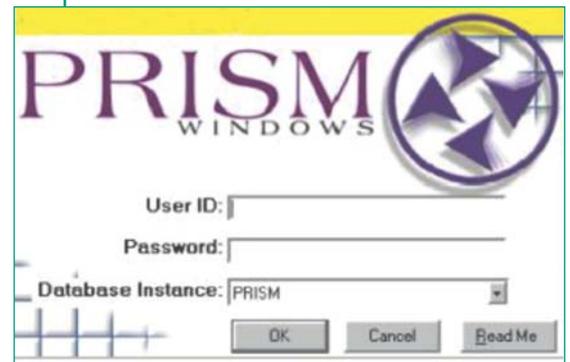
Improving Motor Carrier Safety with Data Management (FMCSA)

The Federal Motor Carrier Safety Administration's (FMCSA) strategic approach to improving motor carrier safety encompasses many objectives, one of which is to increase the safety performance of the carriers that are the worst offenders. A key component of this objective is the Performance and Registration Information Systems Management (PRISM) Program, a federal-state partnership that links federal safety performance ratings with state motor vehicle registrations.

While the registration systems of the partner states form the framework, PRISM's two major processes – registration and enforcement – work in parallel to identify motor carriers and hold them responsible for the safety of their operation. For a vehicle to be registered, the responsible carrier must be identified; and all interstate carriers must receive a US DOT number. Carriers with bad safety performance ratings are targeted for compliance reviews by FMCSA safety investigators and may incur sanctions up to and including being put out of service. Performance is improved through a comprehensive system of identification, education, awareness, safety monitoring, and treatment; this approach is highly effective from a cost as well as a safety perspective.

The Volpe Center has been actively involved in PRISM operations over the past several years, including analytical and development support for SafeStat, a critical element of the PRISM improvement process. SafeStat is an automated performance analysis system that identifies carriers with potential safety problems and prioritizes them for an on-site review. Currently, the Center provides technology management of SafeStat and technical support to the FMCSA and its partner states in the operation and maintenance of the PRISM information system. Since April of 2001, the PRISM system has been housed in the Volpe Center Data Center. Twenty states are in various stages of PRISM implementation, and others are expected to join the program.

On November 27 and 28, 2001, Mr. Bob Berk and Ms. Rosemarie Kelly of Volpe's Computer Center hosted a PRISM Data Systems Meeting for the FMCSA. Attendees included FMCSA headquarters and field personnel, state motor vehicle registration and information technology staff, and state contractor personnel. The intent of the meeting was to resolve numerous technical issues arising from the inclusion of additional states in PRISM; to disseminate up-to-date information on PRISM, including new system specifications developed by the Volpe Center; and to answer questions and concerns from the user community.



The Volpe Center provides operation and maintenance support to PRISM's information system, which is housed at the Volpe Data Center.

PRISM began in 1995 as a 5-state pilot; now 20 states are in various stages of implementation. The Volpe Computer Center works to ensure that the continuing development and operation of PRISM meets user needs.



Building Back Better: Navigation Restoration in Central America (RSPA)

The navigational capabilities of ports in Honduras and Nicaragua were ravaged by Hurricane Mitch in November 1998. In response, the DOT initiated a humanitarian program to install advanced navigation systems at the three maritime ports that suffered the most damage, that is, to "build back better" their navigational capabilities. The U.S. Agency for International Development, through the Research and Special Programs Administration, funded the project.



This sustainable restoration project capitalized on experience that Volpe staff acquired during the development of advanced navigation systems for the Saint Lawrence Seaway and the Panama Canal. The ports in Honduras and Nicaragua were equipped with systems that employ signals from the Global Positioning System (GPS). Once signals are acquired from GPS satellites, they are further refined by a technique called differential GPS (DGPS), which provides users with very accurate position reports. The DGPS system has transmitters that use a radio beacon to broadcast special GPS correction signals to vessels transiting the ports. Mobile navigation units were developed for maritime pilots. Each mobile unit has a GPS receiver, a radio-beacon antenna, and a laptop computer. The on-board systems allow harbor pilots to accurately determine the position and progress of their own ships as they navigate narrow inland waterways.

Volpe's Center for Navigation designed and developed a DGPS-based navigation system for the Port of Corinto, Nicaragua, whose navigational capabilities were destroyed by Hurricane Mitch in 1998.

On December 3, 2001, Mr. David Phinney and Mr. Henry Wychorski of Volpe's Center for Navigation traveled to Corinto, Nicaragua, to ascertain the readiness of the DGPS transmitter for full operational use for the Port of Corinto. On December 6, 2001, they participated in an official ceremony at the port during which the ownership of the DGPS transmitter station was transferred from the United States to Nicaragua. Attendees included the President of Nicaragua and the U.S. Ambassador to Nicaragua.



Volpe team members attended the official ceremony that transferred ownership of a DGPS transmitter from the United States to Nicaragua. From left to right: Mr. David Phinney of the Center for Navigation, Nicaraguan President Arnoldo Alemán, and Mr. Henry Wychorski, also of the Center for Navigation.

The Volpe Center was responsible for the design and development of the DGPS installation, which will support 24-hour navigation in the port in all weather conditions. A similar DGPS system was installed at the Port of San Lorenzo in Honduras last year. Since the inauguration of DGPS operations, San Lorenzo has reported a marked enhancement in safety and a considerable improvement in the efficiency and economics of port operations.



Providing Environmental Support to DoD Facilities Construction (USAF/DON)

The Volpe Center is supporting construction and environmental compliance monitoring for the High Frequency Active Auroral Research Program (HAARP) of the U.S. Air Force and U.S. Navy. The goal of this congressionally mandated program is to provide a state-of-the-art research facility to study the properties and behavior of the ionosphere, a conductive upper layer of the Earth's atmosphere. Particular emphasis will be placed on understanding and using the ionosphere to enhance communications and surveillance systems for both civilian and defense purposes. The HAARP research will be directly applicable to the communication and navigation necessary for the successful operation of all modes of transport.

The proposed research requires the construction of an ionospheric research facility in Gakona, Alaska, which will be the most powerful and versatile high-frequency radio wave generator in the world. The main part of the facility, a large radio wave transmitter called the Ionospheric Research Instrument, will consist of 180 crossed dipole antenna elements arranged in a grid pattern of 12 rows and 15 columns covering 35 acres. Construction has reached the demonstration prototype level, consisting of 13 acres of antennas. The facility is expected to be complete in 2005.

Since 1999, the Environmental Engineering Division has provided environmental support that includes 404 wetland fill permitting, construction monitoring and compliance, and air emissions permitting, as well as addressing concerns related to hazardous materials and other environmental issues. Once construction is complete, additional environmental oversight support will be provided during operation of the facility.

Dr. Paul Valihura of the Environmental Engineering Division is the Environmental Compliance Officer for the project. On October 6 and 7, 2001, he participated in a meeting with Air Force and Navy personnel at Hanscom Air Force Base, Bedford, Massachusetts, to define the tasks required for a contractor to take over the daily operation of the HAARP Site. Dr. Valihura is also Vice-Chairman of the Radio Frequency

Volpe's role in the development of this DoD facility includes helping to ensure that the electromagnetic frequency waves produced by the HAARP project do not interfere with radio communication and navigation.

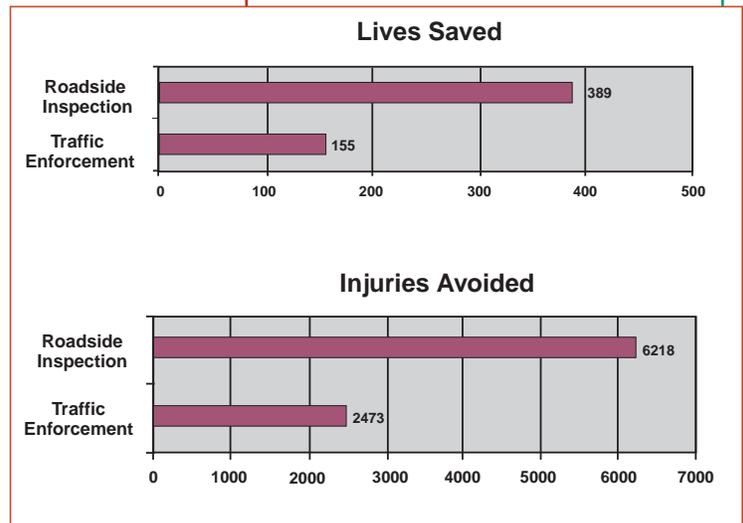


HAARP's Ionospheric Research Instrument Demonstration Prototype, which consists of 13 acres of antennas, has already been used successfully in scientific research.

Interference Resolution Committee, which was established to monitor and fine-tune the electromagnetic frequency waves produced by the HAARP project to ensure that the project does not induce interference with radio communication and navigation during operation.

Papers & Presentations

- In support of the Federal Motor Carrier Safety Administration's (FMCSA) Office of Data Analysis and Information Systems, the Safety Assessment Division completed the report, "FMCSA Safety Program Performance Measures - Intervention Model: Roadside Inspection and Traffic Enforcement Effectiveness Assessment," on October 26, 2001. The report documents the methodology and results from an improved model to measure the effectiveness of two of the FMCSA's key safety programs: Roadside Inspection and Traffic Enforcement. Program effectiveness was determined by how successful a program was in preventing crashes involving large commercial motor vehicles and, ultimately, in reducing related fatalities and/or injuries. Mr. Donald Wright of the Division provided technical management and wrote the report with Mr. Dennis Piccolo and Mr. Emmett Harris of EG&G Technical Services (a Volpe Center contractor) and with assistance from Dr. Thomas M. Corsi of the University of Maryland.
- Mr. Bill Wood, Deputy Director of the Office of Traffic and Operations Management, attended the Fifth World Conference of the Global Aviation Information Network in Miami, Florida, on December 5 and 6, 2001. The conference theme was "Safety Information Sharing: Collaboration, Innovation, and Implementation." Mr. Wood gave an address titled "Implementing Near-Real Time Airline Sharing Systems."
- Dr. Eugene Gilbo of the Automation Applications Division contributed a chapter to the book titled *Air Transportation Systems Engineering* published by the American Institute of Aeronautics and Astronautics (AIAA) as Volume 193 of the AIAA series *Progress in Astronautics and Aeronautics*. The chapter, "Collaborative Optimization of Arrival and Departure Traffic Flow Management Strategies at Airports," was co-authored by Mr. Kenneth Howard of Arcon Corp., a Volpe contractor.

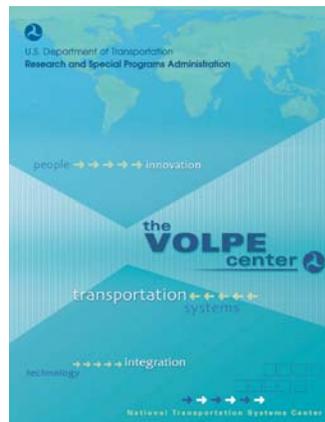
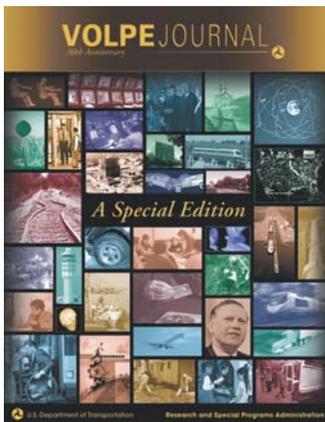


A Volpe study evaluated the effectiveness of two key FMCSA safety programs. As shown above, in 1998, the Roadside Inspection Program saved an estimated 389 lives while the Traffic Enforcement Program saved 155 lives; and Roadside Inspection helped avoid 6,218 injuries, while Traffic Enforcement helped avoid 2,473 injuries.

Papers & Presentations

Continued from page 11

- Mr. Gregg Fleming, Chief of the Environmental Measurement and Modeling Division, participated in the 141st Meeting of the Acoustical Society of America, held in Fort Lauderdale, Florida. On December 6, 2001, he presented the papers "Lateral Attenuation of Aircraft Sound Levels due to Engine Installation Effects" and "Highway Traffic Noise Measurements Compared to Predictions from FHWA's Traffic Noise Model."
- A Final Draft Programmatic Environmental Assessment (EA), addressing the potential environmental impact of new rules to improve the US-Mexico cross-border safety of commercial motor vehicles (both trucks and buses), was delivered to the Federal Motor Carrier Safety Administration on December 10, 2001. The EA was prepared by members of the Environmental Engineering Division and the Environmental Measurement and Modeling Division, and led by Dr. Paul Valihura of the Environmental Engineering Division.



A Special Edition of the [Volpe Journal](http://www.volpe.dot.gov) commemorates the Volpe Center's 30th Anniversary with an historical overview of the Center that presents selected accomplishments in research, analysis, engineering, and deployment performed in support of DOT and other sponsors. Our work is discussed in terms of the DOT's strategic goals: Safety, Mobility, Economic Growth, Human and Natural Environment, and National Security. The new Volpe brochure highlights the Center's continuing role in fostering innovation in the transportation community and our ongoing support in these strategic areas. The Journal is available on the Volpe web site, www.volpe.dot.gov.

Director's Notes

Continued from page 1

In this time of heightened awareness, we are leveraging our expertise in physical and information security to address continuing and emerging threats.

The Center's systems perspective is particularly suited to the intricate nature of security work. Our approach incorporates advanced technologies into physical and information security networks. Process engineering, human factors, and training are also critical elements in the development and deployment of integrated security systems, such as our ongoing work at the U.S. Capitol Complex. We apply a systems approach whether we are conducting a vulnerability analysis of the National Airspace System, deploying communications and tracking systems for the Department of Defense, training U.S. Postal Service employees in identifying and handling hazardous materials, or designing systems that protect our nation's borders.

We are especially proud that the Center is a member of the Technical Support Working Group (TSWG), the U.S. national forum that identifies, prioritizes, and coordinates interagency and international research and development requirements for combating terrorism. The TSWG rapidly develops technologies and equipment to meet the high-priority needs of those combating terrorism, and addresses joint international operational requirements through cooperative R&D with major allies. The Center will continue to serve when and where we are needed to help safeguard national security.

Volpe National Transportation Systems Center

55 Broadway
Cambridge, MA 02142-1093

FOR MORE INFORMATION

Call: 617.494.2224
Fax: 617.494.2370

e-mail: MurrayL@volpe.dot.gov

www.volpe.dot.gov