



Volpe Center Highlights

Director's

Notes



Dr. Richard R. John

The Volpe Center: Its Value as a Federal Resource

This year the Volpe Center is celebrating its 30th anniversary. Originally founded as the U.S. Department of Transportation's Transportation Systems Center, it was established, in large part, because of an awareness of a need to improve the nation's transportation system. There was a growing understanding that to do so successfully would require the application of a wide range of technical disciplines and that the required expertise existed in only a few specific areas in the then-new DOT. The Center's name reflected the fact that the founders clearly understood two critical factors: (1) the focus was to be on the application (transportation), rather than on any one specific discipline; and (2) the Center would embody a broad, system-level perspective with research as only one of its activities.

The occasion of this anniversary provides us with the opportunity to reflect on the history of the Volpe

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Official Delegation from China Visits Volpe (FAA)

On April 13, 2000, the Volpe Center hosted a delegation from China for an official visit. Members of the Center's staff along with eight representatives from the People's Republic of China, five representatives from the Federal Aviation Administration (FAA), and two representatives from the Department of Defense (DoD), were in attendance. Dr. Frank Tung, Deputy Director of the Volpe Center, was the official host for the Volpe Center.

The Chinese delegation was headed by Mr. Zhang Yaokuan, Deputy Director of the Office of State Air Traffic Control Commission. Mr. Mao Shunping, Deputy Director General of the Air Traffic Management Bureau (ATMB), General Administration of Civil Aviation of China (CAAC); and Sr. Col. Li Zhongli, Deputy Director of the Air Traffic Control Department, People's Liberation Army Air Force headquarters, served as Deputy Heads of the delegation. The U.S. delegation was headed by Mr. John Hancock, Deputy Director of the FAA Office of International Aviation; and Mr. Neal Planzer, Executive Director, DoD Policy Board on Federal Aviation.



Dr. Richard R. John, Director of the Volpe Center, greets Mr. Zhang Yaokuan, Deputy Director of the Office of State Air Traffic Control Commission and head of the Chinese delegation
(Photo courtesy of Dr. Frank Tung)

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The trip was one in a series of exchange visits between the United States and China as part of a Sino/U.S. Civil Military Air Traffic Control Cooperation Program. On the April 13th visit, the Chinese delegation visited the Volpe Center to discuss the Center's work in air traffic control and, in particular, to learn about the Enhanced Traffic Management System (ETMS). ETMS is the real-time, operational computer system developed by the Volpe Center that the FAA uses to predict, detect, and handle airspace congestion problems. The Chinese government has identified the need for a similar system in China.

Dr. Richard R. John, Director of the Volpe Center, greeted the delegation. Dr. Tung then presented an overview of the Volpe Center, highlighting the role of the Center as a catalyst for innovation within the transportation community and describing the Center's work on the Communications Tracking and Navigation Program in the Panama Canal. Volpe staff then gave several presentations related to air traffic control.

Mr. Richard Bair, Chief of the Automation Applications Division, presented information to acquaint the delegation with the Volpe Center's role in supporting the FAA's Air Traffic Management Mission, emphasizing the partnership that exists between Volpe and the FAA and describing the Center's multi-dimensional role. Mr. Rick Oiesen of the Automation Applications Division next presented information on Collaborative Decision Making (CDM) and Traffic Flow Management. The CDM Program is an effort by the FAA, the airlines, the Volpe Center, and others to improve traffic flow management by increasing collaboration and information sharing between the airlines and the FAA's Air Traffic organization.

Following Mr. Oiesen's presentation, Ms. Cynthia Lee of the Safety and Environmental Technology Division described the work of the Volpe Center's Acoustics Facility, which specializes in all aspects of transportation-related noise and emissions. She discussed the FAA's Integrated Noise Model and described the Center's work for the FAA in noise-related measurement programs within U.S. national parks, particularly the Grand Canyon and the national parks in southern Florida (i.e., Big Cypress National Preserve, Biscayne National Park, Crocodile Lake National Wildlife Refuge, and Everglades National Park).

In the afternoon session, Mr. Michael Geyer of the Surveillance and Sensors Division discussed interference mitigation for the Global Positioning System (GPS). Ms. Karen Van Dyke of the Center for Navigation presented information on the GPS Aviation Outage Prediction and Reporting Systems that were developed at the Volpe Center for the U.S. Air Force and the FAA as well as for Airservices Australia; DFS Deutsche Flugsicherung, the organization responsible for air traffic control for Germany; and Direccion General de Aeronautica Civil, the Chilean Aviation Authority.

Mr. Richard Wright of the Office of Traffic and Operations Management gave the final presentation of the day, which was a demonstration of the ETMS. Mr. Wright's talk was followed by a demonstration of CDM and a visit to the Volpe Center's ETMS computer room.



Promote public health and safety by working toward the elimination of transportation-related deaths, injuries, and property damage.

The visit by the Chinese delegation to the Volpe Center was part of a five-day trip to Boston. In addition to the Center, the delegation also visited Raytheon; Lincoln Laboratory, a federally funded research and development center affiliated with the Massachusetts Institute of Technology; and Mitre Corporation.

Hazardous Materials Training Provided at U.S. Postal Service Airmail Facilities (USPS)

Mr. Glenn Goulet of the Environmental Engineering Division and Mr. Terry Sheehan of the Service Assessment Division currently are conducting hazardous materials training sessions for selected employees at U.S. Postal Service (USPS) airmail facilities. These "Train-the-Trainer" courses instruct postal personnel on how to educate mail handlers in proper procedures

for managing hazardous materials in order to protect the traveling public. The courses were designed by the Volpe Center to support the Postal Services' efforts to improve the Hazardous Materials Program for their Aviation Mail Security Group. The first courses were held in Dallas, Texas, and Charlotte, North Carolina, in April 2000, with an additional sixteen locations scheduled around the country. By the completion of the project, which is targeted for September 2000, it is estimated that 360 postal personnel will have been trained throughout the United States, Guam, and Puerto Rico.

Volpe Continues Work on FAA Safe Flight 21 Program (FAA)

The Volpe Center's Airport Surface Division provides support to the Federal Aviation Administration's (FAA) Integrated Product Team for Advanced Technology in their efforts to manage the Safe Flight 21 Program (SF21). SF21 is a joint cooperative effort between government and industry to develop and demonstrate a set of free flight operational enhancement capabilities that are derived from evolving communications, navigation, and surveillance technologies. The underlying core concept of SF21 is the sharing of real-time traffic and weather information between the pilot and the air traffic controller to provide enhanced operational capabilities.

Building on work accomplished during previous efforts by the Volpe Center at the Atlanta and Dallas/Fort Worth airports, the Airport Surface Division will build and install a Surveillance Server at the Memphis International Airport in Memphis, Tennessee. The Surveillance Server acquires surface vehicle information from a variety of airport sensors, processes this information, and produces a clear and accurate real-time image of airport surface traffic. As part of SF21, this information will be available to aircraft via a computer uplink and displayed in the Memphis Air Traffic Control Tower and in both the Federal Express and Northwest Airlines Ramp Control Towers.

During the week of April 3, 2000, Mr. Joe Ruggiero of the Airport Surface Division traveled to the Memphis International Airport to brief representatives from the Memphis Airport, Federal Express, and Northwest Airlines on the Volpe Center's role in the FAA's SF21 effort. During this visit, a site survey also was performed in the Air Traffic Control Tower Equipment Room to determine the best location for the installation of the equipment.

Helping FAA Transition to MCI Worldcom Telecommunications Services (FAA)

During the week of April 3, 2000, Ms. Kathleen McGann of the Telecommunications Division represented the Volpe Center at the General Services Administration/Federal Technology Services (FTS) Forum and Exposition 2000 that was held in Dallas, Texas. The purpose of the Forum was to acquaint federal agencies with FTS2001 services, telecommunications technology changes and enhancements, and management and process updates.

The Volpe Center's Telecommunications Division supports the operation and enhancement of the Federal Aviation Administration's (FAA) Telecommunications Information Management System (TIMS). This system is used to manage the ordering, circuit inventory, and billing reconciliation for both administrative and National Airspace System (NAS) operational circuits.

Approximately one year ago, DOT and FAA selected MCI WorldCom (MCIW) as their FTS2001 vendor. The transition to this new vendor ultimately will involve approximately 15,000 to 20,000 circuits that support, among other things, the FAA's nationwide long distance service, weather information, and the Administrative Data Transmission Network.

During the Forum, Ms. McGann; Mr. David Lantzy, FAA's Deputy Director for NAS Operations (Telecommunications); FTS Program Managers; the TIMS Program Manager; and representatives from various FAA regions met with MCIW and the Defense Information Technology Contracting Office (DITCO), which is the telecommunications contracting agency for the FAA, to discuss the requirements, mechanism, and time frame for the transition of existing services to MCIW. During the Forum, the FAA announced an accelerated transition schedule that calls for sending all orders to the vendor by August 30, 2000.

At the conclusion of the Forum, the FAA agreed to a proposal made by Ms. McGann that will require modifying the Telecommunications Management System (TELMS), the current FAA ordering system, which also was developed at the Volpe Center. This proposal would satisfy DITCO and MCIW requirements with minimal impact on the FAA. Over the last few weeks, the Volpe Center has fine-tuned the requirements, developed the design, and implemented the modifications to TELMS.

At the request of the FAA, representatives from the Volpe Center's Telecommunications Division attended a national transition-planning meeting in Palm Coast, Florida, during the week of April 17, 2000. That meeting was convened to develop action plans, resource estimates, and schedules to meet the FAA's cutover goal for transition to MCIW. The meeting resulted in additional requirements for substantial Volpe Center support over the next four months to work with FAA regional staff, MCIW, and DITCO to streamline ordering methods and processes, and to develop new interfaces that would enable the transition of services within the time frame mandated. As part of this effort, the Volpe Center recently achieved a significant milestone by completing the development of a bulk ordering process that meets the required transition schedule.

Volpe Participates in Transit Safety Task Force (FTA)

Mr. Robert Adduci and Mr. James Harrison, both of the Infrastructure Protection and Operations Division, played key roles in the Federal Transit Administration's (FTA) Safety Task Force. The first phase of this project began in April 1999, when FTA Administrator Gordon Linton requested that a Safety Task Force be convened to: (1) evaluate FTA's current safety program, (2) identify safety issues, (3) benchmark "best practices," and (4) recommend ways to meet the transit industry's safety needs for the 21st Century. Task Force members were recruited from throughout DOT and split into four subgroups to develop recommendations in the areas of best practices, human factors, design standards, and data collection and analysis. Mr. Adduci played a central role in planning, implementing, and coordinating Task Force activities in support of Chairperson Rhonda Crawley of FTA's Office of Research, Demonstration, and Innovation. In addition, Mr. Adduci directed the production of the draft final report, "Redefining FTA's Future Role in Transit Safety," which was presented to FTA Acting Administrator Nuria Fernandez.

Phase II, which began in January 2000, involved the production of the "FTA Safety Action Plan." Developed by FTA's Office of Safety and Security, the Plan was designed to implement the Task Force's findings. Both Mr. Harrison and Mr. Adduci provided planning, technical analysis, and production in support of this effort. On February 23, 2000, Mr. Harrison met with Ms. Judy Meade, Director of FTA's Office of Safety and Security, and Ms. Fernandez to present the "FTA Safety Action Plan." The Plan was approved and presented at the American Public Transit Association's (APTA) 25th Annual Legislative Conference on March 13, 2000, by Ms. Fernandez and DOT Deputy Secretary Mortimer Downey.



Ensure that the transportation system is accessible, integrated and efficient, and offers flexibility of choices.

Developing a New ITS Data Management Course for the Transit Community (FTA)

DOT's Professional Capacity Building (PCB) Program is a joint Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) effort directed by DOT's Intelligent Transportation Systems Joint Program Office (ITS/JPO). It was established to assist in the deployment of ITS by enhancing knowledge and developing the appropriate skills within federal, state, and local government agencies, as well as the transportation industry. The Volpe Center serves as program manager for FTA's ITS PCB program. In that role, the Center develops awareness and provides training on the application of ITS to public transportation. In an effort to help transit professionals make maximum use of

data available after ITS deployment, a new training course is being developed. Mr. Joseph LoVecchio, Dr. Sylvia Harris, and Ms. Justyne Johnson of the Telecommunications Division participated in a curriculum committee workshop from April 25 to 26, 2000. Facilitated by Dr. Harris, the workshop was aimed at obtaining guidance and input from the transit community on the content, format, and target audience for this new training course. After the workshop, the Volpe Center staff briefed Mr. Walt Kulyk, the FTA sponsor, on the workshop findings and discussed the next steps. One key finding was that ITS data should be seen within the context of all other types of data that transit agencies manage. It also was determined that the training should focus initially on senior management, while an additional course might be needed for other levels of personnel within the transit organization.

Building Linkages for Transportation, Distribution, and Logistics (RSPA)

In fiscal year 1996, the Department of Education launched an exciting new initiative called "Building Linkages through Career Clusters in High Technology Industries." This initiative was launched to promote linkages between state academic standards and industry-recognized skill standards for broad groups of occupations and industries that are based on a common core of competencies called career clusters. One of the career cluster areas is Transportation, Distribution, and Logistics.

A partnership was formed with the Departments of Education, Labor, Transportation, and the Illinois State Board of Education to develop a road map for career entry, progression, and educational requirements for the Transportation, Distribution, and Logistics career cluster. Through this partnership, curriculum materials for secondary to post-secondary levels will be developed and pilot tested at local school sites throughout the United States.

The partnership is designed to build on the success of DOT Secretary Rodney E. Slater's Garrett A. Morgan Technology and Transportation Futures Program, and other national and state initiatives. The Research and Special Programs Administration's (RSPA) Administrator Kelley S. Coyner is leading the Garrett A. Morgan Technology and Transportation Futures Program and representing DOT on the Building Linkages Project.

The Volpe Center is supporting Ms. Coyner by consulting in the development and dissemination of the Transportation, Distribution, and Logistics career cluster framework, curriculum materials, and execution of the project, as well as Internet Web site support. Ms. Olive Lesueur of the Intermodal Logistics Systems Planning and Integration Division is a member of the Building Linkages Management team. Mr. Russell Furtado of the Technology and Knowledge Engineering Division is providing Internet Web site support.

From April 25 to 26, 2000, Ms. Lesueur and Mr. Furtado participated in the Transportation, Distribution, and Logistics Building Linkages State Liaison Meeting, Executive Committee Meeting, and Advisory Consortium Meeting held at the White House Conference Center in Washington, D.C. Participants included representatives from the federal government, states' departments of education, academia, transportation industry, and labor unions. These meetings provided participants with the opportunity to discuss the scope of the Transportation, Distribution, and Logistics career cluster framework and plans for selecting and executing the pilot test sites, as well as related topics. Ms. Lesueur provided suggestions for categorizing transportation careers within the career cluster framework, and Mr. Furtado briefed the participants on the Garrett A. Morgan Technology and Transportation Futures Program Web site (<http://education.dot.gov>) and the Transportation, Distribution, and Logistics Building Linkages Web site (<http://education.dot.gov/translinkage>).

Coast Guard and FAA Receive Training in CMPlus and SPAS Systems (USCG/FAA)

During the week of March 13, 2000, Ms. Carrie Darling-Brown and Mr. John Fiorillo of the Information Integration Division conducted a training session on the new Windows version of the Configuration Management Plus software (CMPlus 4 NT) for the U.S. Coast Guard's (USCG) Office of Logistics Systems personnel and the Electronic Support Detachment. This training also provided the Coast Guard personnel with the knowledge and

capability to become an integral part of the CMPlus installation process along with Volpe staff during fiscal year 2000, and ultimately to provide ongoing operational support throughout the life of the CMPlus application. The Volpe Center developed the CMPlus software to help the Coast Guard operate and maintain its fleet of Coast Guard Cutters. CMPlus is a unit-level system, so the data and functionality is self-contained aboard each ship and now is installed at more than 150 units.

At the request of Ms. Barbara Wright, the Program Manager for the Safety Performance Analysis System (SPAS) at the Federal Aviation Administration's (FAA) Flight Standards Service, Ms. Ann DiMare of the Aviation Safety Division attended a SPAS training dry run at the FAA Academy in Oklahoma City, Oklahoma, to assess the readiness of the FAA instructors to provide SPAS training courses to FAA inspectors. Ms. DiMare evaluated the instructors in terms of their overall presentation, interaction with students, classroom management, learning environment, laboratory equipment, and testing environment. Ms. DiMare also met with Mr. James Wade of the FAA, Manager of the Regulatory Standards Division, to discuss the future of SPAS delivery and potential opportunities for the FAA Academy and the Volpe Center to work together. The training was held from February 14 to 18, 2000.

A Review of Traffic and Transit Internet Sites Generates Media Interest (ITS/JPO)

Recently, Mr. Jonah Soolman and Ms. Sari Radin of the Economic Analysis Division released a paper entitled "Features of Traffic and Transit Internet Sites." The paper, which reviews the functionality of transportation Web sites in large metropolitan areas, has generated substantial interest and publicity from the media, including an article that ran recently in *Inside ITS*, a biweekly publication that covers the use of information technology in the Intelligent Transportation Systems (ITS) field in North America. Organizations that would use the data in the paper include transit authorities and companies that develop Web sites. This paper was the first time that the quality of traffic and transit Web sites had been reviewed.

To research the paper, Mr. Soolman examined 85 traffic sites (45 from public agencies and 40 from private sector firms) and 120 transit sites (99 public and 21 private). The selected sites were based on lists drawn from the 1999 metropolitan ITS deployment tracking database, and links on the American Public Transportation Association (APTA) and the Intelligent Transportation Society of America (ITS America) Web sites. Mr. Soolman analyzed each site to determine whether it contained the features that were considered most desirable by customers. These features were based on two customer satisfaction studies that were conducted last year as part of the metropolitan model deployment initiatives in Phoenix, Arizona, and Puget Sound, Washington. The paper concluded that many of the traffic and transit features that are desired by customers are not available on the sites.

The paper was released at the Advanced Traveler Information Systems (ATIS) Workshop, which was held from February 9 to 10, 2000, in Phoenix, Arizona. The purpose of the ATIS Workshop, which was sponsored by the Federal Highway Administration and hosted by ITS America, was for members of the public and private sectors to discuss service and data gaps affecting both users of ATIS and providers of ATIS data, respectively. The ITS Joint Program Office (ITS/JPO) plans to use the paper as well as other reports and proceedings from the ATIS Workshop to develop a road map for ATIS.

Originally, the paper was published with a set of resource materials sent to pre-registrants of the ATIS Workshop. It also is available as an electronic file in the ITS/JPO Electronic Document Library (www.its.dot.gov/welcome.htm), document number 12263. The ITS Cooperative Deployment Network also is featuring a description of and link to the paper along with Web-enabled data tables. This Web page was created by the National Associations Working Group for ITS, a cooperative effort of organizations whose members are spearheading ITS deployment in the United States. A description of the paper is at www.nawgits.com/icdn/atissstudy_tran.html and the Web-enabled tables are located at www.nawgits.com/icdn/atissstudy_tran.html and www.nawgits.com/icdn/atissstudy_traf.html.

At the request of Mr. Joe Peters of the ITS/JPO, the sponsor of the Volpe Center's research for this paper, the authors will begin a more complete review of transit agency Web sites, including all agencies that submit information to the National Transit Database. The five-month study will review the sites and develop a Web-based searchable database for the improvement of transit Internet sites. Database development will be performed by Mr. Doug Rickenback of the Economic Analysis Division.

Quick Response Provided in Over-The-Road Bus Project (OST)

Mr. Robert Church and Mr. Edward Ramsdell of the Economic Analysis Division provided quick response support to DOT's Office of the Secretary's (OST) Economic and Regulatory Team in reviewing the report of a research project on over-the-road buses that was conducted by the Transportation Research Board's (TRB) Transit Cooperative Research Program (TCRP). Mr. Church and Mr. Ramsdell provided a memorandum reviewing the research project in time for OST to meet a two-week turnaround for comment to TRB.

The TCRP project's objective was to perform an analysis of the capital needs for meeting accessibility requirements for over-the-road-buses mandated under the Americans with Disabilities Act (ADA). A federal subsidy is included in the Transportation Equity Act for the 21st Century to partially offset the impact on individual carriers. At the request of OST, the Volpe Center currently is assisting the TCRP contractor in estimating the size and industry characteristics of the current over-the-road bus fleet size.

The Economic Analysis Division performed the Regulatory Assessment for the 1998 Rulemaking. Through this rulemaking, DOT implemented the ADA requirements, enabling persons with disabilities to use intercity bus travel in a manner similar to that enjoyed by non-disabled persons and furthering DOT's strategic goal of enhanced mobility.

Proposed Projects Evaluated for Advanced Vehicle Technology Program Funding (FTA)

Recently, Mr. David Spiewak of the Advanced Vehicle Technologies Division participated in the evaluation and ranking of 136 white papers describing proposed advanced vehicle projects. The papers were submitted to the Advanced Vehicle Technology Program (AVP) for consideration of funding in fiscal year 2001. The U.S. Congress has authorized up to \$50 million per year in funding for AVP projects under the Transportation Equity Act for the 21st Century from fiscal years 1999 to 2003.

The AVP is a DOT program for the development and demonstration of a range of advanced technologies for medium- and heavy-duty vehicles. It focuses on commercial vehicles with the objective of significantly reducing emissions, including greenhouse gases, while improving fuel efficiency and industry competitiveness. Specific activities address lightweight materials, crashworthiness, energy conversion and storage, emission control, and advanced manufacturing technologies.

The evaluation and ranking of the white papers was conducted at System Planning Corporation in Arlington, Virginia, by a Review



Advanced vehicles include technologies such as the Compressed Natural Gas (CNG)/electric hybrid composite bus shown here.

Committee comprised of Mr. Spiewak; Mr. Hsiung and Ms. Christina Gikakis both of the Federal Transit Administration's (FTA) Office of Research, Demonstration, and Innovation; Mr. Ryan Gallagher of System Planning Corporation; and Mr. Danny Jordan of Maritime Applied Physics Corporation. Dr. Robert Rosenfeld, the Defense Advanced Research Projects Agency (DARPA) Program Manager, participated in the review in an advisory capacity. DARPA formerly managed the Electric and Hybrid Vehicle Technologies Program, the precursor to the AVP.

Each of the seven AVP Consortia that are authorized by statute to participate in the AVP had several white papers that scored favorably. The seven Consortia, which represent private industry and other non-federal government organizations, include: Sacramento Electric Transportation Consortium; Northeast Advanced Vehicle Consortium; CALSTART-WESTART; ELECTRICORE, Inc.; Mid-Atlantic Regional Consortium for Advanced Vehicles; Hawaii Electric Vehicle Demonstration Project; and Southern Coalition for Advanced Transportation.

Full proposals based on the favorably ranked white papers were requested by the AVP Program Office. So far, 53 proposals have been received. Mr. Spiewak again will participate on the Review Committee to evaluate, grade, and rank these proposals and to provide technical assistance to Mr. Hsiung. Based on the outcome of these scores, the Research and Special Programs Administration Contracting Officer, Mr. Tom Scott, will negotiate contracts with the Consortia in accordance with established procedures.

Human and Natural Environment



Protect and enhance communities and the natural environment affected by transportation.

Vessel Monitoring System Software Developed for the National Marine Fisheries Service (NOAA)

The Volpe Center is supporting the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS), also referred to as NOAA Fisheries, in the development of a comprehensive Vessel Monitoring System (VMS) to ensure compliance with the NMFS fishing regulations and international agreements on protection of controlled fish stocks. The VMS is a satellite-based tracking and communications system that will provide operational capabilities to the Office of Law Enforcement headquarters and the four NMFS regions in the Northeast, Alaska, Hawaii, and the Southeast.

The Volpe Center contracted with Racal Tracs Limited of Somerset, England, to purchase a commercial off-the-shelf software program for use with the VMS system. The VMS software allows law enforcement officials at NMFS to monitor vessel positions via satellite with respect to user-designated closed fishing zones. Recently, testing of the VMS software to ensure compliance with contract requirements was successfully completed at the Center. The NMFS sponsor and other designated NMFS personnel were on hand to witness the tests. Mr. Joe Koziol and Mr. Graham Watson of the Technology Applications and Deployment Division directed the tests, entered the results into a logbook, collected comments made during the testing, and prepared a report on the results.



The VMS is a satellite-based tracking and communications system.

(Graphic courtesy of Mr. Joe Koziol)

The tests consisted of checks on 255 line-by-line contract requirements and only one test partially failed. A solution was proposed by Racal and will be incorporated into the next version of the VMS software. In addition, the software will be enhanced to include fish catch report capability. Network assurance testing is scheduled to take place after the system is fully integrated and just before the initial operating capability.

Economic Growth and Trade



Advance America's economic growth and competitiveness domestically and internationally through efficient and flexible transportation.

DOT/SBIR Program Administered by Volpe (OST)

Mr. Joseph Henebury of the Communications and Technology Outreach Division attended several events in February and March to present the DOT's Small Business Innovation Research (SBIR) program to the small business community. Mr. Henebury is the Program Director for the DOT's SBIR program, which is managed by the Volpe Center in support of the DOT's Office of Small and Disadvantaged Business Utilization. SBIR was established by the U.S. Congress to stimulate technology innovation, use small businesses to meet federal Research and Development (R&D) needs, encourage participation by minority and disadvantaged businesses in technological innovation, and increase private sector commercialization of innovations derived from federal R&D.

To publicize the DOT's SBIR program, Mr. Henebury recently attended SBIR/Small Business Technology Transfer Program Workshops in Puerto Rico (at the University of Puerto Rico at Mayaguez) and in Florida (sponsored by the Gulf Coast Alliance for Technology Transfer). Along with representatives from other federal agencies with SBIR Programs, Mr. Henebury explained how the SBIR program helps small businesses develop and commercialize their products. He also discussed other high-tech contracting opportunities within DOT. In City of Industry, California, Mr. Henebury, along with Ms. Susan Sandler of EG&G Technical Services, Inc. (a Volpe Center contractor), represented DOT at the National Aeronautics and Space Administration/Jet Propulsion Lab 2000 High-Tech Small Business Conference.

Mr. Henebury also focused on science education during his trip to Puerto Rico. He met with the Chancellor of the University at Mayaguez, Ms. Zulma Toro-Ramos, to discuss educational initiatives and with Dr. Daniel R. Altschuler, the Director of the National Astronomy and Ionosphere Center's Arecibo Observatory, and his staff to discuss methods of improving secondary science education.



Advance the Nation's vital security interests by ensuring that the transportation system is secure and available for defense mobility and that our borders are safe from illegal intrusion.

Distribution of Air Traffic Movement Data Presented to NORAD (NORAD/FAA)

Dr. Larry Vance of the Automation Applications Division, participated in the North American Aerospace Command (NORAD)/Federal Aviation Administration (FAA) Air Movement Data Conference that was held from February 29 to March 2, 2000, at the FAA's William J. Hughes Technical Center in Atlantic City, New Jersey. Dr. Vance presented a briefing on the Volpe Center's role in the distribution of air traffic movement data to NORAD, including the extraction of NORAD data from the FAA's Traffic Management System (TMS) Hub site, which is maintained and operated at the Volpe Center. The TMS is a real-time, operational computer system that was developed by the Volpe Center for the FAA to use to predict, detect, and otherwise handle airspace congestion problems. Prior to his presentation, Dr. Vance coordinated with Mr. Tim Grovac, the Manager of Automation Activities at the FAA's Air Traffic Control System Command Center, to ensure that a unified DOT position was presented at this meeting.

Replacement of Watercraft Fire Suppression System Improves Safety and Offers Environmental Benefits (U.S. Army)

The U.S. Army's Watercraft Program focuses on improving the safety as well as the operational effectiveness of Army vessels, and on reducing the adverse environmental impacts of the Army's watercraft systems. The Technology Applications and Deployment Division along with the U.S. Navy and the U.S. Coast Guard's Office of Marine Safety, Security, and Environmental Protection has been actively engaged in research and fire testing of a suitable replacement for the Halon 1301 fire suppression system. Halon 1301 was identified as an ozone-depleting substance, and the United States supports the Montreal Protocol in discontinuing use of these substances. The replacement system that was chosen uses a fire suppression chemical called FM-200™. This chemical has no adverse impacts on the ozone layer. For additional protection and at the recommendation of the Center, the FM-200™ systems have been augmented with a simple overhead water mist system. The Center completed engineering designs, installations, and testing of five prototypes of the new system in 1999. Five classes of Army watercraft, totaling approximately 60 vessels, will eventually be retrofitted worldwide.

Since completion of the prototype installations, two additional watercraft installations have been completed in Hythe, England. Some of the challenges involved in installing these systems have been to minimize the engineering change impacts to the follow-on vessels, and to maintain the strict design requirements imposed by both the International Maritime Organization and the National Fire Protection Association. Two new engineers at the Volpe Center, Mr. Chris Murray and Mr. Mario Caputo both of the Technology Applications and Deployment Division have been helping to support this program. In addition to learning about fire suppression systems, Mr. Murray and Mr. Caputo have been applying their knowledge from working onboard Navy and military sealift ships. The Center also has been developing training videos and classroom training plans, and is serving as the instructor for initial onboard crew training.

On April 4, 2000, the Volpe Center awarded a competitive commercial contract to install the FM-200™ fire suppression systems on board two additional vessels located in Honolulu, Hawaii. In addition to providing engineering and contract management services, the Center will conduct the initial onboard training class, and provide documentation and approval of the systems. Prior to awarding this contract, Ms. Kathy Regan-Finn of the Acquisition Division and Mr. Caputo conducted a pre-proposal conference in Honolulu for prospective contractors to view the vessels and ask questions. An additional five FM-200™ conversions are on the horizon.



The replacement fire suppression system uses a chemical that has no adverse impacts on the ozone layer.

(Photo courtesy of Mr. Mark Gentile)

Center and the way its work has evolved. While staying true to its original charter, it has grown and changed in response to the nation's needs, and to the needs of our new international clients. The projects highlighted in this issue reflect the diversity of our current clients and the variety of work undertaken here at the Center. Our focus article, describing a visit by a Chinese delegation, captures the Center's new role as an ambassador for innovation.

Creating the Volpe Center was a bold experiment. There were no equivalent models in the federal government. The Center's official charter was drawn in such a way that a broad range of work could be performed, and a wide range of clients could be served. The Center also began life with the understanding that after the initial year, all funding was to be obtained from the sponsoring agencies (clients) for specific projects, with no direct appropriation or long-term Departmental commitment for support of Center operations. The Center's broad charter, and the necessity to pay its own way, combined to produce a highly entrepreneurial and market-driven organization, continually evolving to provide unique capabilities responsive to changing national needs and priorities, particularly as reflected in Departmental budgets.

The Volpe Center's uniqueness, and hence its value to its customers and the nation, is a result of the way it successfully brings together three elements: (1) a broad understanding of the nature and workings of transportation in general and the U.S. transportation system in particular; (2) extensive professional knowledge and experience concerning the technologies and disciplines now used or potentially relevant to transportation system applications; and (3) full understanding of the federal involvement, perspective, and objectives in transportation and their manifestations in particular agencies.

The Volpe Center's special niche and adaptability were created, and are maintained and continually expanded by conducting a broad mix of projects, involving all modes, many agencies, and a wide range of topics. The Center continues to be directly involved with the real-world transportation community—those who use and provide services and equipment, as well as public agencies—and with organizations developing and applying innovative technologies and operational or managerial strategies. The lessons learned, and the contributions to the national transportation enterprise, in carrying out large and complex activities or implementing and deploying innovative technologies or operational strategies are fully as valuable as the research and analysis that underlie the work.

The Volpe Center, as a federal entity, differs from the private sector in that it has no vested interest in outcomes other than knowing it has provided good, solid analysis and successfully posed useful options. Its focus is on defining and solving transportation-related problems and providing the customer with objectivity. The Center's customers receive advice and technical expertise but may go elsewhere for additional services or the provision of equipment. The Center's relationship to its customers is that of an honest broker and trusted colleague. In many instances, professional relationships span decades. For many public agencies, the Center is a source of continuity, stability, and oftentimes corporate memory.

When the Volpe Center was first formed in 1970, its customers were limited to the modal administrations within DOT. In 1986, the Center expanded its client base to include the Department of Defense. Additional work then began to be requested by other federal agencies having transportation and logistics responsibilities, including the Departments of Energy, State, Commerce, and Treasury; the Environmental Protection Agency; and the U.S. Postal Service. International entities such as the Panama Canal Commission also have called upon the Center for its expertise. All customers of the Volpe Center benefit from lessons learned elsewhere that then are applied to their particular situation. This synergy enables the Center to leverage its considerable resources to the benefit of the customer.

The Volpe Center also serves as a facilitator and catalyst for partnerships. As a national resource—an information broker, a partner in innovation—the Center can foster and support these partnerships. State and local government agencies now are taking advantage of what the Center has to offer. When these agencies call upon the Center, they tap into three decades of technical know-how, a network of public and private enterprise, and solid advice. Volpe Center efforts are helping state and local agencies to apply lessons learned across the country to their specific problems, completing the range of governmental organizations benefiting from this expertise.



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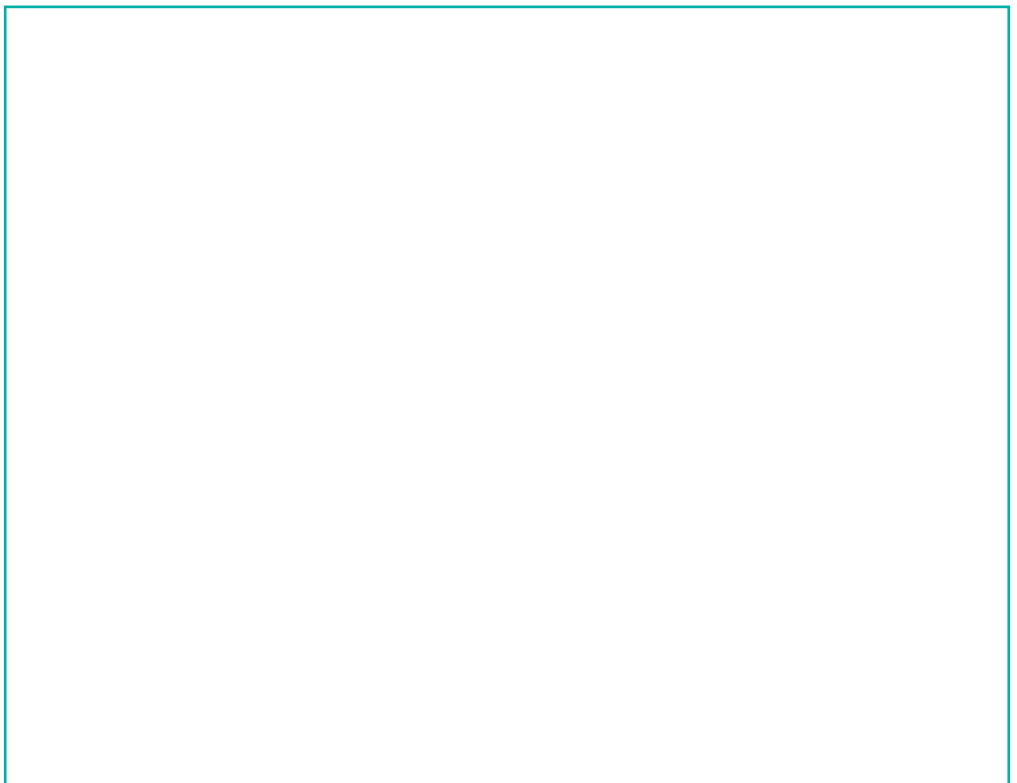
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