

U.S. Department of Transportation
Norman Y. Mineta, *Secretary*

**U.S. DOT Research and Innovative
Technology Administration**
Dr. Ashok Kaveeshwar
Administrator

**John A. Volpe National
Transportation Systems Center**
Dr. Curtis J. Tompkins, *Director*

Editor
Lynn C. Murray
*Chief, Communications and Technology
Outreach, Volpe Center*

**Publications Director/
Managing Editor**
Sian E. Steward

Lead Writers
Deirdre Hering
Dr. John Hopkins
Sian E. Steward

Contributing Writers
Richard Gopen
Robert Gaumer
Scott Hamwey

Contributing Editors
Nathan Grace
Cassandra L. Oxley
Diane H. Wells

Art Director
Philip Thornton

Illustration
Dan Morin

Production Manager
Robert B. Park

The Volpe Journal is published by the Volpe National Transportation Systems Center, and is distributed free of charge. To be placed on the mailing list, contact Lynn C. Murray at (617) 494-2224 or send email to: murrayL@volpe.dot.gov.

We wish to thank the following people for their technical reviews and guidance:

Robert J. Adduci, Bernard E. Blood, Dr. John Brewer, Dr. Kim Cardosi, Anya Carroll, Michael Coltman, Stephen Creaghan, Allan J. DeBlasio, Frank P. DiMasi, Robert Dorer, Bill Gay, Dr. Michael Geyer, Dr. Daniel Hannon, Dr. Sylvia Harris, Dr. John Hopkins, George Humphrey, Karina Jacobsen, Alexandra C. Kuchar, Annalynn Lacombe, Marisol Madri, Ann Markman, Stephanie H. Markos, Philip Mattson, Dr. Jordan Multer, Dr. Wassim Najm, Dr. Stephen Popkin, Michael Redington, Terry Sheehan, David Skinner, David Tyrell, Donald Wright, Hailing Yu, Dr. Michael Zuschlag.

This document is disseminated under the sponsorship of the Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its content or use thereof. The United States Government does not endorse products or manufacturers. Trade or manufacturers' names appear herein solely because they are considered essential to the objective of this document.

Prepared by: CASE, LLC



U.S. Department of Transportation
Research and Innovative Technology Administration

John A. Volpe National Transportation Systems Center
55 Broadway
Cambridge, MA 02142-1093
(617) 494-2000
<http://www.volpe.dot.gov>

ISSN 1526-5188

DR. ASHOK KAVEESHWAR

Administrator
Research and Innovative Technology Administration

As Administrator of the Research and Innovative Technology Administration, I am pleased to introduce this special issue of the Volpe Journal, which focuses on the Volpe Center's safety work. This journal is the first to be published since the passage of



Photo: U.S. DOT

the Norman Y. Mineta Research and Special Programs Improvement Act, which dissolved the Center's parent organization—the Research and Special Programs Administration—and created two separate administrations: the Pipeline and Hazardous Materials Safety Administration and the Research and Innovative Technology Administration (RITA).

RITA was created to coordinate DOT's research and development investment with the objective of identifying and facilitating cross-modal solutions to America's transportation challenges. The establishment of RITA will enable the Department to more effectively manage its research portfolio and advance the development and implementation of innovative technologies. Volpe is an integral part of RITA.

In addition to safety, the Volpe Center has a vital role in fulfilling the Department's goals in areas such as security, mobility and global connectivity, economic growth, environmental stewardship, and ultimately in delivering a better-integrated transportation system. The wealth of the Center's contributions to transportation safety are shown in the content of this journal, which also reflects the Center's forward direction—where it consistently questions the premises of the past to arrive at better solutions to the safety challenges of today and tomorrow.

The nation needs an effective and safe transportation system, and all levels of government recognize this priority. In the words of President George W. Bush, "*America's transportation system takes us where we need to go, keeps our economy moving, and strengthens our nation's security. We...renew our commitment to increasing transportation safety and to keeping our transportation system on the leading edge of technology.*"

For the last 35 years, the Volpe Center has been playing a central role in improving transportation safety and keeping our transportation system on the leading edge of technology. I am proud to join with the talented, hard-working professionals at Volpe to introduce this special issue of the Volpe Journal.