



INTERNATIONAL

FHWA Issues European Commercial Vehicle Safety Report

FHWA's Office of International Programs has released a new report titled *Commercial Vehicle Safety Technology and Practice in Europe*. The report was developed with the former Office of Motor Carriers—now the Federal Motor Carrier Safety Administration. The report identifies many emerging safety systems, technologies, and issues; and offers recommendations for enhancing commercial vehicle safety in the United States in the areas of human factors, equipment, infrastructure, and organizational structures.

The United States and Europe share common commercial vehicle safety issues, such as an increase in truck ton-kilometers by 2010, rapidly growing passenger traffic, and flat infrastructure investments. Other common issues include a debate over access for longer combination vehicles; a shortage



Drivers in Sweden take a 10-week course to qualify for a commercial vehicle license. Training involves a combination of computers, including extranets, simulators, and behind-the-wheel training.



of commercial vehicle drivers; the need to integrate emerging public and private information technology systems; emerging technologies and developments in areas of safety systems that necessitate new standards; and the emergence of rules/regulations from a centralized government with a decentralized enforcement approach.

To explore ways to improve commercial vehicle safety on America's roadways, FHWA's International Technology Exchange Program convened the Commercial Vehicle Safety (CVS) Panel. The panel focused its research on four European countries—Sweden, Germany, the Netherlands, and France. Panel members represented U.S. DOT, FHWA, State DOTs, Owner/Operators and
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The *Research and Technology Transporter* communicates FHWA research, development, and technology accomplishments, findings, information, and technology transfer opportunities. Its audience is transportation engineers and professionals in State and local highway agencies, State DOTs, Local Technical Assistance Programs, Divisions, Resource Centers, Core Business Units, academia, and the research community. The eight-page newsletter is published monthly by FHWA's RD&T service business unit. Editorial offices are housed at the Turner-Fairbank Highway Research Center. Comments should be sent to the editor at the address below. Field offices are encouraged to submit articles for publication via the appropriate agency technology leader from the editorial board listed below. The newsletter can be viewed online at www.tfhrc.gov. Subscriptions to the *Transporter* are free. Send your request to Judy Dakin at the address below, or send email to judy.dakin@fhwa.dot.gov.

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SAFETY

NHTSA and FHWA Hold Pedestrian and Bicycle Research Workshops

The National Highway Traffic Safety Administration (NHTSA) and the Federal Highway Administration (FHWA) held two one-day workshops on April 13 and 14. The first focused on pedestrian safety research and the second focused on bicycle safety research. The participants contributed ideas for research to improve pedestrian and bicycle safety.



Research Board, AASHTO, FHWA, NHTSA and others. A summary of the workshop is being prepared and will be available later this year.

Approximately 40 people participated in each workshop. Participants included professionals involved with research, safety programs, health engineering, education, and enforcement.

These recommendations will be used to help develop both NHTSA's and FHWA's future pedestrian and bicycle safety research programs and to identify possible joint activities. The workshop results will also be used as input to the safety area of the National Research and Technology Partnership Agenda, which is being advanced by the Transportation



Attendees of the two-day pedestrian and bicycle research workshop made recommendations to help develop NHTSA's and FHWA's future research pedestrian and bicycle safety research programs.

FHWA, NHTSA, and the Federal Railroad Administration (FRA) staff members served as resource persons during the workshop.

In preparation for the workshops, FHWA and NHTSA asked researchers who had conducted pedestrian and bicycle safety research to write white papers regarding data needs, countermeasures, and other special issues such as speed and ethnicity. The papers about pedestrians discussed the following topics:

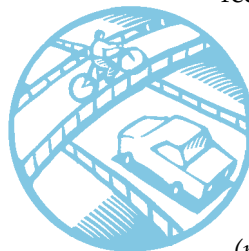
- Pedestrian Crash Data.
- Pedestrian Safety Data.
- Pedestrian Countermeasures.
- Pedestrian Facilities Research.
- Race/Ethnicity.

- Speed Management and the Non-motorist.
- Pedestrian Injuries in Relation to Vehicle Speed.

The background papers on bicycles covered:

- Bicycle Crash Data Needs.
- Bicycle Research Data Needs.
- Bicycle Countermeasures.
- Engineering Countermeasures Research for Bicycling.
- Bicycle Facilities Research.
- Bicyclist Conspicuity Issues and Topics for Future Research.

Each author presented his paper at the workshop. Participants then discussed the topics and worked



in groups to develop research recommendations based on the papers, discussions, and personal expertise and views.

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Independent Drivers Association; and private sector consultants.

The report presents the panel's findings and proposes recommendations to support the strategies that advance human resource management, vehicle and roadway safety design and standards, and innovative regulatory methods to facilitate adoption of new technologies and approaches.

The United States has many noteworthy efforts to enhance commercial vehicle safety that have created many safety initiatives, including programs, organizational relationships, and emerging technology-based safety solutions. New initiatives to

enhance safety in the U.S. should begin with these current efforts and encompass the examples from the European experience.



Each of the three areas of this report — human resources, vehicle safety systems, and regulations — identifies lead organizations and suggests implementation strategies.

The report is posted on the internet at www.international.fhwa.dot.gov. Hard copies are available by contacting international@fhwa.dot.gov.
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NHTSA To Support Bike Safety Conference

NHTSA and the National Center for Injury Prevention and Control (NCIPC) will support a multi-disciplinary Bicycle Safety Conference scheduled for July 2000. The goals of the conference are to reduce bicycle-related injuries among children and youth, establish what steps need to be taken to overcome barriers to that goal, and encourage bicycling as a mode of transportation.

Members of the National Bicycle Safety Network, an organization co-chaired by NHTSA and the Centers for Disease Control and Prevention (CDC), will serve on the conference steering committee.

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INFRASTRUCTURE

FHWA Studies Effects of Pavement Roughness at WesTrack

Research often produces unexpected benefits. A recent example is the WesTrack project, an accelerated pavement test funded jointly by FHWA and the National Cooperative Highway Research Program (NCHRP). Although designed to examine how materials and construction variations affect pavement performance, the WesTrack project has provided interesting secondary data on how pavement roughness affects truck fuel and maintenance costs.

The primary objectives of the FHWA/NCHRP study were to continue the development of performance-related specifications (PRS) for hot-mix asphalt pavement construction and to provide an early validation of Superpave mixture design procedures. To do this, four driverless trucks traveled more than 1.3 million km (820,000 mi) and applied some 4.9 million 80-kN (18,000-lb) Equivalent Single Axle Loads (ESALs) to pavement test sections. The test sections, which were placed in a 2.8-km (1.8-mi) loop, were loaded over a 2.5 year period.

Throughout the loading period, data were collected on many vehicle parameters, including fuel consumption. When the researchers focused on two periods just before and after a major rehabilitation (prior to the rehabilitation, parts of the track had become very rough because of fatigue failures and patch deterioration), they found



Above: WesTrack driverless vehicles.

Right: Example of pavement roughness.

significant differences in fuel consumption and in frequency of vehicle mechanical problems.

After the rehabilitation, which reduced the average International Roughness Index values of the track tangents by at least 10 percent, the trucks used 4.5 percent less fuel/km than they did on the rough (pre-rehabilitation) pavement. The vehicles' gross weight, speed, and aerodynamic profile were fixed, the vehicles were very well maintained throughout the WesTrack experiment, and data were corrected for environmental factors. As a result, the reported increases in the fuel consumption



could be attributed directly to the pavement roughness. The data also showed a significant reduction in the frequency of fatigue failures in truck components, e.g., trailer frames and springs, after the rehabilitation.

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FHWA Releases Report on Magnetic-Based NDE of Prestressed and Post-Tensioned Concrete Members

FHWA recently completed a study involving the design, fabrication, and demonstration of a system using the nondestructive evaluation (NDE) technique. Researchers use the principle of magnetic flux leakage (MFL) to detect corrosion and fracture of prestressing steel in prestressed and post-tensioned concrete bridge members.

Extensive laboratory and field testing of prestressed concrete members showed that the MFL could detect flaws in prestressing steel equivalent to a 5–10 percent loss of cross section, which demonstrates that the MFL concept could potentially be used as an NDE tool for detecting corrosion and fracture of steel in prestressed and post-tensioned concrete members.

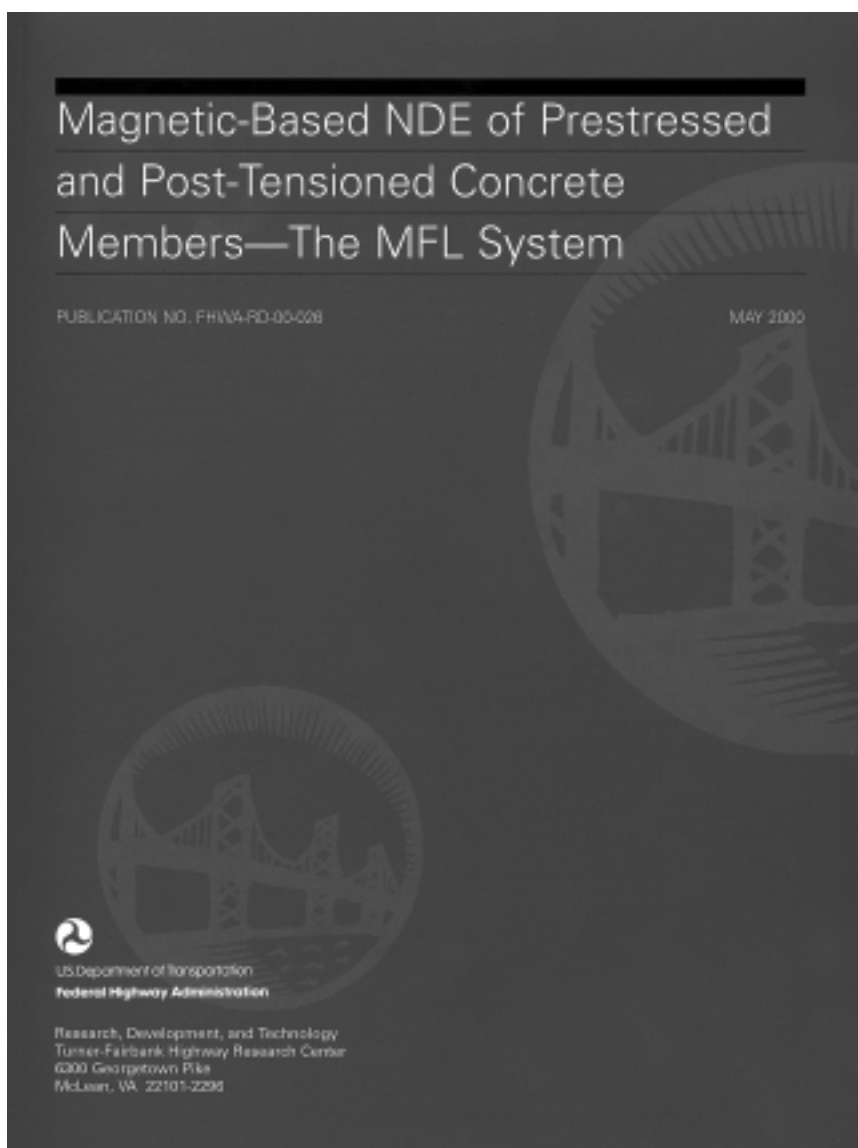
Initially, researchers reviewed the available literature to evaluate the capabilities and shortcomings of past magnetic-based methodology and equipment. They decided to place primary emphasis on developing a reliable and field-worthy new system.

Researchers determined that the previously developed equipment was inadequate because of its excessive weight, the difficulty in installing and removing the equipment, the equipment's inefficient data acquisition and interpretation, and its outdated electronics and computing devices.

Researchers recommend that additional laboratory and field investigations need to be

conducted using the new MFL system in order to fully evaluate its capabilities and limitations. This would also facilitate the establishment of a more comprehensive database to enhance the system's data interpretation capability and overall reliability.

To obtain a copy of the report, contact the FHWA Report Center at (301) 577-0818 or contact Paul Virmani.
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PLANNING AND ENVIRONMENT

FHWA Announces 2001 Environmental Excellence Awards Call for Entries

The entries for the 2001 Environmental Excellence Awards are due August 15 to the Division Administrator at the FHWA Division Office in the State in which your entry is located.

FHWA developed this biennial awards program to draw attention to those partners, projects, and processes that excelled in meeting the growing transportation demands while protecting and



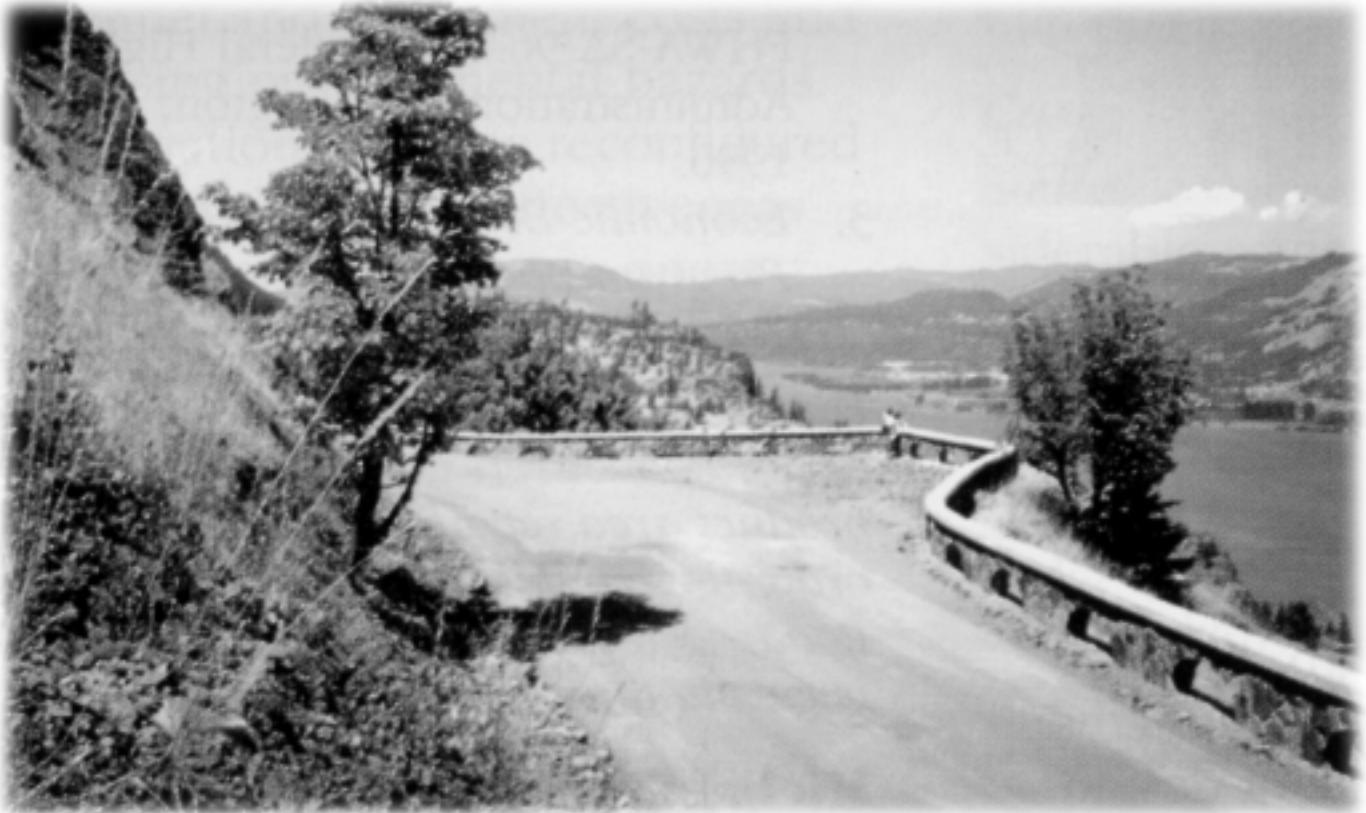
enhancing the environment.

The award plaques will be presented to the winners at an Earth Day ceremony on April 21, 2001 in Washington, DC.

Each entry should include a complete application form and a summary of the outstanding accomplishments of the nominated project, process, person, or group. Project entries must include at least two

professional-quality color glossy prints showing different views of the project or associated persons nominated. Submit five sets of all entry materials. All materials submitted become property of the U.S. Department of Transportation. No entry materials will be returned. For more information about submitting entries and to obtain an application form, visit www.fhwa.dot.gov/environment/eea_call.htm.

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The Columbia River overlook at the Hood River-Wasco County, OR, line was restored using historic Columbia River Highway rubble masonry to create the parapet wall. This project is a previous Environmental Excellence Award winner.

TECHNOLOGY MARKETING

RD&T's Office of Technology Services Issues "Technology Talks"

As FHWA employees know, the internal weekly reports are one of the most valuable resources available to keep abreast of highway news all across the United States and of how people are fulfilling FHWA's mission. Although these weekly reports offer a comprehensive view of what is going on around the country, unfortunately not everyone has the time to read these reports completely. To assist those that need to know about the latest developments and news on

highway and intermodal innovations around the United States, the Office of Research and Technology Services distributes a report called "Technology Talks."

It is posted monthly on the FHWA Staffnet site under What's New/Newsletters. This report is a compilation of excerpts taken from FHWA weekly reports. These excerpts describe what technology and innovation activities are happening around the country.

Technology Talks is compiled and distributed monthly so that those of us who don't have time to read all of the weekly reports can still keep abreast of activities that directly affect how our country's roadways are being planned, built, and managed. By consolidating the information, users have a manageable file that can be easily read in about 15 minutes.

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OPERATIONS

FHWA Holds Hurricane Workshop

FHWA has created a workshop to explore areas related to how transportation operations and evacuation should work in the event of a hurricane. The workshop will be held June 26-28 in Atlanta, GA.

Objectives of the workshop include identifying the need for uniform safety and operational guidelines for interstates and other major roadways during evacuations; defining the needed design standards for interstate and other major highways when operating them contra-flow for evacuations; identifying the steps for implementing the automatic, electronic sharing of roadway information between agencies and

between States; discussing what roadway and weather data is needed for decisionmakers and travelers; and identifying specific ITS technologies that need to be deployed during major evacuations.

For more information, visit www.fhwa.dot.gov/events/hurricane.htm.

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FHWA's hurricane workshop, which will be held June 26-28 in Atlanta, GA, will explore transportation operations and evacuation in the event of a hurricane. Hurricanes, besides producing high winds, produce excessive rain, which can hinder evacuation efforts.



U.S. Department of Transportation

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PROFESSIONAL DEVELOPMENT

Secretary Slater Presents Award to National Transportation Week Poster Contest Winner

Secretary Rodney E. Slater presented an award to the winner of the National Transportation Week (NTW) Poster Contest. The award was given at a May 15 panel discussion where Secretary Slater and three former Secretaries of Transportation discussed *Transportation in the 21st Century*. The winner was Philippe Halbert, a 12 year-old student from Alexandria, VA, who received a \$200 savings bond during this kickoff event for NTW, which was May 14–20. Halbert’s school, Blessed Sacrament, in Alexandria, VA, also received a \$500 check for his participation.

Fifth graders from Garrett Morgan schools were asked to participate in the nationwide poster contest, which drew 123 entries. Halbert’s winning art, a marker and pencil drawing that depicts the progression of transportation from the cave man to space travel, reflects the NTW theme of “Transportation — Taking You Where You Want to Go.”

Second place was awarded to Sara Yeung from PS 205 in Brooklyn, NY; she received a \$100 savings bond and \$200 was awarded to her school. Her poster showed several modes of transportation, with a human leg prominently displayed in the center.

The third place winner, Hiu-Suen Law from PS 186 in Brooklyn, NY, received a \$100 savings bond and \$200 was awarded to her school. Her poster showed a woman in an airplane window, superimposed on a map of the world.

NTW provides an opportunity to carry the message of transportation careers to students, teachers, and parents. A major objective of NTW is to interest more young people in transportation and the poster contest helped promote this idea.

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