

struction costs, and was of immense help in getting the center started with the loan of office space, shop support, and many other assists.

The support of community leaders in the City of Pueblo and Pueblo County contributed greatly to the development of the test center. The construction of a 19-mile paved road from the Pueblo Airport to the test center by Pueblo County has made access to the center far easier and quicker.

In addition, development of the University of Southern Colorado since the test center started has provided higher educational opportunities for employees and their families.

#### ACKNOWLEDGMENT

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# Transportation of Hazardous Materials: Toward A National Strategy



Although the safety record associated with the transportation of hazardous materials and wastes is impressive, concerns continue to surface about the perceived failure of the federal government to assume a leadership role in the development of policies and the coordination of programs to deal more uniformly and effectively with the many ramifications of hazardous materials transportation. Congress, state, and local governments, the general public, and industry in an attempt to close this leadership gap joined in a conference on the transportation of hazardous wastes and hazardous materials in Williamsburg, Virginia, February 17-20, 1981, and worked toward the objective of developing a national strategy to deal with the issues at hand.

The publication of Transportation Research Board Special Report 197 (Volumes 1 and 2), *Transportation of Hazardous*

#### BACKGROUND

Although the report in Special Report 197, Volume 1, had an immediate germination period of approximately two-and-a-half years, in a larger sense it is among the most recent efforts in a 117-year process to ensure safety in the transportation of hazardous materials and hazardous wastes in the United States. Precedent within TRB for convening and analyzing the best national thinking on this issue was set by the 1969 Conference on Hazardous Materials at Airlie House, Warrenton, Virginia. That conference, the result of a request by the U.S. Department of Transportation (DOT) to the National Research Council, assembled 90 people from government and industry to review the situation as it then stood.

The Airlie House recommendations paved the way for some of the reforms that were implemented during the 1970s. Legislatively, the most significant was the passage of the Hazardous Materials Transportation Act (HMTA) of 1975. Administratively, the Materials Transportation Bureau (MTB) in DOT's Research and Special Projects Administration (RSPA) was established. TRB's Standing Technical Committee on the Transportation of Hazardous Materials also grew out of the Airlie House deliberations.

Prompted by growing public and congressional concern over hazardous materials transportation in the late 1970s—a concern that resulted from a number of well-publicized haz-

## Feature

Materials: Toward A National Strategy, is one of the by-products of that conference (see "Bookshelf" section in this issue of *TRNews*); the other is a greater public awareness of a serious problem that gets public attention usually following a single but oftentimes disastrous incident and then slips into temporary oblivion—until the next incident.

## CONTINUING ACTIVITY

Although *Special Report 197* has been published and released, TRB activity in the area of hazardous materials transportation will continue through the work of its Committee on Transportation of Hazardous Materials (A3C10). Some of the items on its agenda are preparation and publication of research problem statements in the *Transportation Research Circular* series and the organization of several sessions at the January 1984 TRB Annual Meeting on research findings as they affect various modes. Also being considered is the need for an international conference that will bring together individuals involved in studies of hazardous materials transportation.

ardous materials incidents and spills (some involving multiple fatalities)—TRB's Committee on the Transportation of Hazardous Materials, in developing program plans, initiated a number of activities designed to further its role. Specifically, the Committee undertook, and published the results of, a survey to identify the ten most critical issues in hazardous materials transportation, which were subsequently telescoped into six primary discussion topics for the 1981 conference; initiated the 1981 Williamsburg Conference; and organized TRB Annual Meeting sessions that have covered all aspects of hazardous materials transportation and from which many of the papers have been published and distributed widely as part of TRB's information dissemination role.

## NATIONAL STRATEGIES CONFERENCE

A Steering Committee to Develop a National Strategy for the Transportation of Hazardous Materials and Hazardous Wastes in the 1980s was appointed, with the approval of the Chairman of the National Research Council, in October 1980. The Steering Committee was composed of selected members of TRB's Standing Technical Committee as well as members who represented government agencies, industry, and academia, and whose expertise covered some facet of the handling, shipping, regulation, enforcement, safety, or legal aspects of hazardous materials transportation. The Committee was chaired by Karsten J. Vieg, then Director of Traffic Safety, Illinois Department of Transportation. Since October 1982, the Committee has been chaired by Raymond D. Scanlon, Hazardous Materials Specialist, Port Authority of New York and New Jersey.

The purpose of the conference, held under the Steering Committee's aegis, was to develop recommendations for a comprehensive national strategy to provide safe and efficient transportation of hazardous materials and hazardous wastes in the 1980s. The conference covered the following aspects of the hazardous materials transportation system: regulation, training, emergency response, legal responsibilities and implications, technological needs and limitations, and risk assessment. Consideration of the public interest was a pre-eminent theme underlying all the discussions.

The conference was funded in part by the U.S. Department of Transportation's Research and Special Projects Administration; the Federal Emergency Management Agency; and the National Association of Governors Highway Safety Representatives.

## FINDINGS AND RECOMMENDATIONS

The findings and recommendations that were developed by the TRB Steering Committee on the Transportation of Hazardous Materials following the National Strategies Conference on the Transportation of Hazardous Materials and Hazardous Wastes in the 1980s are summarized here. They were announced at a public briefing on June 3, 1983, at the National Academy of Sciences, Washington, D.C., following publication of the report by TRB.

### Finding 1

There should be a single, lead federal agency responsible and accountable for the safe transportation of hazardous materials.

### Recommendation 1

The U.S. Department of Transportation (DOT) should properly be the lead federal agency for the development of transportation policy and procedures for hazardous materials.

### Finding 2

There is no agreed-on hazardous materials transportation safety goal within the government-industry complex.

### Recommendation 2

A statement of purpose for the national hazardous materials transportation regulation program should be formulated and adopted.

### Finding 3

Related to Finding 2 is the fact that the relative roles of federal, state, and local governments have never been clearly and understandably defined, which has led to interjurisdictional confusion. In addition, no developed concept exists concerning how best to achieve compliance with those measures that will provide the greatest safety.

### Recommendation 3

DOT should engage in a vigorous program to obtain a clear definition of roles for local, state, and federal officials engaged in regulation, enforcement of regulations, and response to incidents in hazardous materials transportation. In addition, state and local governments should have distinct roles in attaining compliance through the enforcement of hazardous materials regulations.

#### Finding 4

Given that no system of regulation and enforcement can eliminate accidents, a reasoned response to such occurrences is important. The Steering Committee found that there is considerable disagreement on the procedures and adequacy of emergency responses. However, there is agreement that accurate, timely, and continuous information flow is necessary at the scene of the accident in order to properly evaluate the hazard involved.

#### Recommendation 4

Federal agencies with emergency-response duties should take action to develop required information and technology to provide accurate and fast identification and estimation (both remote and on scene) of the nature and degree of hazard in accidents and spills. The Congress should support research and development to improve evaluation of on-scene hazards and to facilitate communications between all responsible individuals and teams as well as with the general public.

#### Finding 5

There is no systematic federal approach to training in the area of hazardous materials transportation.

#### Recommendation 5

DOT should designate an office to develop a master program of hazardous materials training for personnel in public and

private organizations and for all phases of the transportation of hazardous materials.

#### Finding 6

The Steering Committee identified a need for the inclusion of more technological innovation, information, and research related to the transportation of hazardous materials.

#### Recommendation 6

DOT should continue to address and press for implementation of technological developments that would improve hazardous materials transportation.

#### Finding 7

Although encouraged by DOT's adoption of many of the recommendations from the 1969 Airlie House Conference, the Steering Committee also noted that some of the most far-reaching proposals made there, e.g., performance standards, have not been adopted.

#### Recommendation 7

Regulations should be improved by incorporating performance standards where it is feasible to do so. [Ed. note: Docket HM-181: Performance-Oriented Packaging Standards, announced April 15, 1982, is a move in this direction.]

*Pictured at public briefing on Special Report 197, held at National Academy of Sciences, Washington, D.C., on June 3, are (L-R) Thomas B. Deen, TRB Executive Director; John Granito, State University of New York; Lawrence W. Bierlein, member of TRB Steering Committee for Williamsburg Conference; Dennis L. Price, Virginia Polytechnic Institute and State University, Blacksburg, and consultant to the Williamsburg Conference; and Raymond D. Scanlon, Port Authority of New York and New Jersey and Steering Committee Chairman.*



### Finding 8

The lack of safety in the transportation of hazardous materials may often be exaggerated to the general public.

### Recommendation 8

There should be a concerted government-industry effort to communicate to the public the relative safety that does exist in the transportation of hazardous materials and hazardous wastes.

### CONFERENCE REPORT

Volume 1 constitutes a summary of the conference proceedings and the Steering Committee's subsequent deliberations in developing its findings and recommendations regarding the development of a national strategy for the movement of hazardous materials and wastes. Volume 2 contains the conference resource papers and the rapporteurs' workshop summaries.

*Special Report 197* deliberately does not give lengthy treatment to marine or air transport of hazardous materials. This is because much of the marine traffic is international and is governed by international regulations that are beyond the scope of national strategies. Air traffic in hazardous ma-

terials is minimal, and the work of international and national trade and professional organizations has been effective in relieving many problems in this area.

The transportation of nuclear wastes and radioactive materials was not a focus of attention at the conference, largely because it is a relatively small part of current hazardous materials transportation. Furthermore, coupled as it is with public concerns about the disposal of radioactive wastes and disposal area sites, it is a volatile issue that could inappropriately mask many other important issues. However, the increasing number of nuclear materials and wastes being transported indicates that this issue is likely to command greater attention at future conferences.

In addition to the Airlie House report, *Special Report 197* is the second report to deal with hazardous materials transportation issues emanating from the National Research Council in recent years. The other report, prepared by the Assembly of Engineering's Committee on Transportation, is titled *A Review of the Department of Transportation Research and Special Programs Administration's Hazardous Materials Research and Development Program* and was prepared for the U.S. Department of Transportation in 1980. A report dealing with methodological approaches for risk assessment of hazardous materials transportation at state and local levels will be published in 1983 in the National Cooperative Highway Research Program (NCHRP) Synthesis of Highway Practice series. NCHRP is administered by TRB's Division D, Cooperative Research Programs.

## COMING UP IN SEPTEMBER-OCTOBER ISSUE

● *Kansas “BAMS” Away*

● *Minority Students Intern at TRB*

● *High-Speed Rail Picking Up Speed*

● *FHWA Develops Epoxy-Coated Rebars*