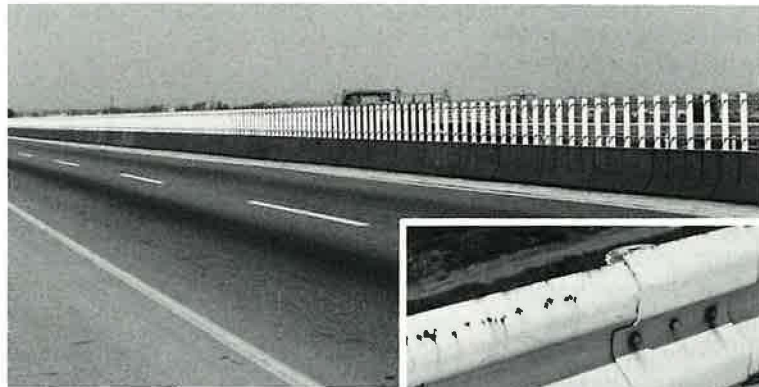


Chinese and American Engineers Plan Roadside Safety Design Partnership

HAYES E. ROSS

Building on its policy of cultural and technological exchange with the West begun in the late 1960s, the People's Republic of China recently invited two American engineers from the Texas Transportation Institute—King K. Mak and myself—to present a 4-day course on roadside safety design. King Mak and I traveled to China at the request of the Highway Research Institute (HRI), Ministry of Communication, in Beijing. Our trip was sponsored by the Institute of Pacific Asia, the Texas Transportation Institute, and the Ministry of Communication.



Concrete safety-shaped median barrier with glare screen on expressway in Beijing area.



Closeup view of guardrail installation.



Hayes Ross lectures at 4-day course with the help of interpreter Shan-Long Hu, a graduate student at Tsinghua University.

Hayes E. Ross is head of the Structural Systems Division and Professor of Civil Engineering at the Texas Transportation Institute of the Texas A&M University System; and Chairman of the TRB Committee on Roadside Safety Features.

AMONG THE TOPICS WE PRESENTED in the course held at HRI, were the nature of the roadside problem and design objectives; performance guidelines and standards; and the design of safety features, including longitudinal barriers, crash cushions, and others. We also covered the use of experimental methods to analyze safety features, such as full-scale vehicular tests, tests with a surrogate or bogie vehicle, and tests with a pendulum. Computer simulation programs used in roadside safety design, as well as how to choose safety designs considering cost and benefits, were discussed.

At the end of the course, the 35 participants, mostly engineers and professors, continued to talk about various issues in roadway design. Two topics in particular were discussed: developing design standards for longitudinal bar-

riers on expressways and designing and operating a full-scale vehicular test facility. Participants from HRI also described their construction of a multi-purpose test facility near Beijing.

Expressing interest in continuing informational exchange between the United States and China on highway and roadside safety design, the course participants proposed the following future activities:

- Student exchange program,
- Exchange program between American research engineers and those from HRI,
- Program in which U.S. highway engineers and researchers act as consultants within China, and
- Active involvement of HRI engineers in TRB activities.

DURING OUR STAY, KING MAK AND I visited Tsinghua University, where researchers at the school's Research Institute of Structural Engineering conduct studies on design of highway vehicles, buildings, and offshore structures. We talked to professor De-Bao Li of the Mechanical Engineering Department at Tsinghua, who is conducting research for HRI on guardrail design.

We also toured a newly opened expressway in Beijing. The modern, lim-

ited-access facility has features similar to those on U.S. expressways. A concrete safety shaped barrier with a glare screen on top is used in the median to separate opposing traffic. The roadside barrier consists of steel W-beam rail supported on steel tube posts. High mast lighting is used at major interchanges.

China hopes to build 2000 kilometers of expressway by the turn of the century. Because the country relies heavily

on rail as the primary mode of transportation, the highway program has been slow to take shape. Although China has nearly 1 million kilometers (600,000 miles) of highway, there are relatively few automobiles (265,000 in 1982) for a country of more than 1 billion people. Only recently have plans been made to build expressways; their development is progressing slowly because of lack of capital and concern over the use of much-needed agricultural land.

TRB CALENDAR

1989

MARCH

13-15 2nd International Conference on Automated People Movers
Miami, Florida
Wm. Campbell Graeub

SPRING

Future of Statewide Multimodal Transportation Planning
Boston, Massachusetts
James A. Scott

APRIL

4-5 Aviation Forecast Methodology Workshop
Washington, D.C.
Larry L. Jenny

18-20 4th International Conference on Concrete Pavement Design
Purdue University, West Lafayette, Indiana
George W. Ring III

23-26 Conference on Engineering 21st Century Highways
San Francisco, California
James A. Scott

24-28 2nd Conference on Applications of Transportation Planning Methods
Orlando, Florida
James A. Scott

MAY

15 Conference on Justification and Methods of Allocating Overhead Costs in Federally Assisted Public Works Programs
Bethesda, Maryland
Kenneth E. Cook

21-24 5th International Conference on Mobility and Transport for Elderly and Disabled Persons
Stockholm, Sweden
James A. Scott

JUNE

18-22 2nd International Symposium on Heavy Vehicle Weights and Dimensions
Kelowna, British Columbia, Canada
George W. Ring III

21-23 International Conference on Microcomputers in Transportation
San Francisco, California
Wm. Campbell Graeub

JULY

23-27 28th Annual Workshop on Transportation Law
San Diego, California
Robert W. Cunliffe

24-27 15th Traffic Records Forum
El Paso, Texas
Richard F. Pain

14th Annual Summer Conference on Intermodal Shipping and Freight Transportation
New York, New York
Kenneth E. Cook and Elaine King

SEPTEMBER

12-14 Conference on Vehicle Navigation and Information Systems
Toronto, Canada
James A. Scott

13-15 6th International Workshop on Aviation Activity Forecasts
Washington, D.C.
Larry L. Jenney

27-29 Strategic Highway Research Program and Traffic Safety on Two Continents
Gothenburg, Sweden
Robert E. Spicher

FALL

2nd Annual Commuter Transportation Conference
Memphis, Tennessee
Kenneth E. Cook

9th National Conference on Rural Public Transportation
San Antonio, Texas
Wm. Campbell Graeub

NOVEMBER

Conference on Transportation and Economic Development
Williamsburg, Virginia
Kenneth E. Cook

TRB is either conducting or otherwise participating in the meetings listed above. For further information contact the TRB staff representative cited in each listing or Angelia Arrington, Conference Manager (telephone 202-334-2934).