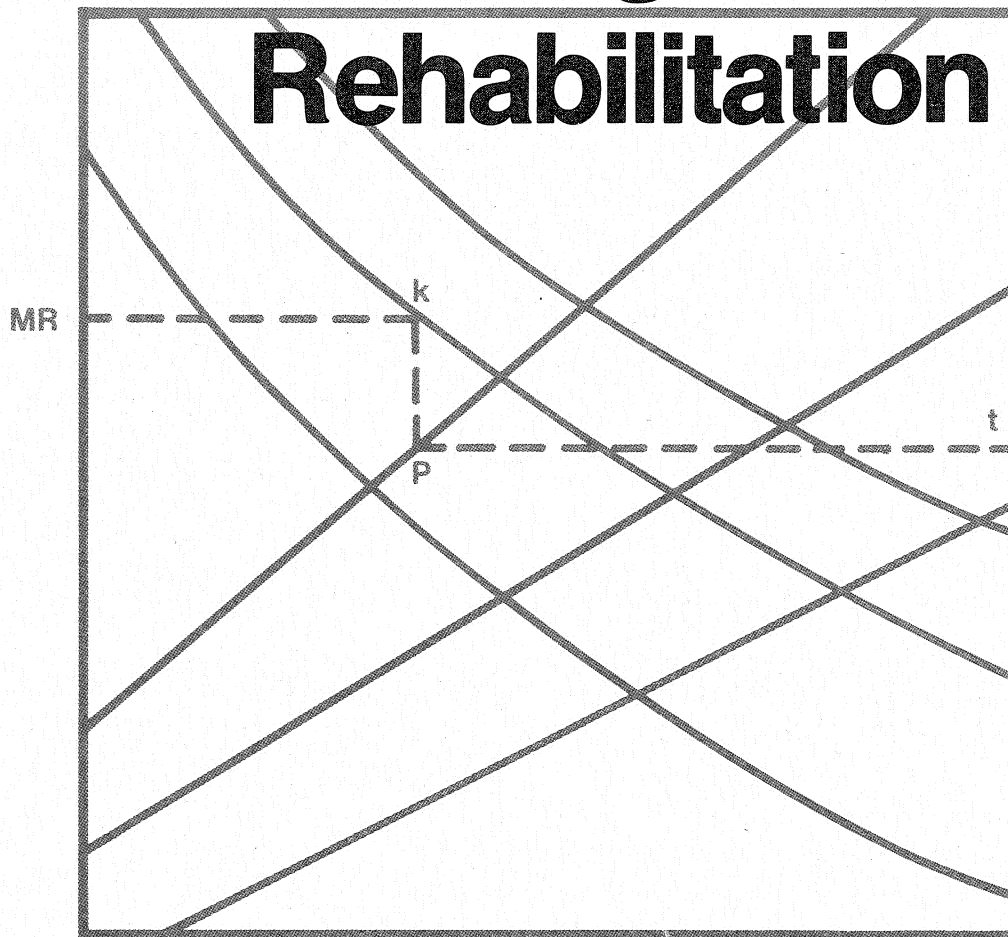


Proceedings
Third International
Conference on

**Concrete
Pavement
Design and**

Rehabilitation



April 23-25, 1985
Purdue University

Third International Conference on
**Concrete Pavement
Design and
Rehabilitation**

April 23-25, 1985

Purdue University
West Lafayette, Indiana 47907 USA



Eldon J. Yoder Outstanding Paper Award

Professor Eldon J. (Eldy) Yoder was born in Goshen, Indiana on December 11, 1918. Eldy received his BS degree in Civil Engineering from Purdue University in 1945, and his MSCE in 1946, majoring in Highway Engineering and minoring in Soil Mechanics and Structures. In 1946, he accepted employment with Ohio State University as an Assistant Professor in Civil Engineering. In 1949, he returned to Purdue as Assistant Professor of Highway Engineering. He was promoted to Associate Professor in 1954 and, in 1962, became Professor of Highway Engineering.

Professor Yoder's record of educational, technical and professional accomplishments in the field of highway engineering, especially pavement design, serves as an inspiration to us all. He was an outstanding teacher, an excellent researcher, and served as an engineering consultant on major highway projects worldwide. He was very active in professional societies, and especially enjoyed the Transportation Research Board. In 1983, he received TRB's Roy W. Crum Award "in recognition of outstanding achievement in the field of transportation research."

Professor Yoder was very active in the development of continuing education programs in the highway field. He was the organizer of TRB's First International Conference on Low-Volume Roads in 1975, and served as chairman of the Third Conference until his death. He also organized the First and Second International Conferences on Concrete Pavement Design, and was initiating plans for the Third International Conference at the time of his death in 1983. In memory of Eldon J. Yoder and his many contributions to the highway design profession, we dedicate this Third International Conference on Concrete Pavement Design and Rehabilitation to him and will present an award in his name for the outstanding paper for the conference during the conference closing.

Foreword

These are the proceedings for the Third International Conference on Concrete Pavement Design and Rehabilitation. This is the third in a planned series of such conferences to bring together experts in concrete pavements from all over the world to discuss state-of-the-art issues in this subject area. The conference will cover all aspects of the design, evaluation, performance, and structural rehabilitation of Portland Cement Concrete pavements, including new and innovative techniques. Papers on bases, joints and drainage will also be presented.

The First International Conference on Concrete Pavement Design was held at Purdue University on February 15-17, 1977. The Second International Conference on Concrete Pavement Design was held in Indianapolis, Indiana on April 14-16, 1981. Both of these conferences were quite successful, thanks to the tireless efforts of their chairman, Eldon J. Yoder, Professor of Civil Engineering at Purdue University. Eldy was very active in planning the Third International Conference until his untimely death in June, 1983. This conference is dedicated to his memory and to his many contributions to the engineering profession.

The papers presented in this proceedings were selected from the 110 synopses which were submitted in response to the initial call for papers in January of 1984. The papers selected for presentation at the conference resulted from a two stage review of the synopses and then the papers of the selected synopses. Due to the many fine papers submitted, the Program Committee decided to also publish some of the excellent papers which could not be included in the conference program. The papers published in this proceedings have been organized into the same format as that of the general program as follows:

- Session 1 — Keynote Addresses
- Session 2 — Pavement Rehabilitation Methods
- Session 3 — Special Methods
- Session 4A — Airport Pavements
- Session 4B — Highway Pavement Design
- Session 5A — Pavement Overlay Methods
- Session 5B — Highway Pavement Evaluation
- Session 6 — Bases, Drains, and Joints
- Session 7 — Pavement Recycling

The format of the conference allows each presenter to make a formal presentation of his paper, followed by time for questions from the audience and responses by the authors. Interaction between authors and attendees will be encouraged throughout the conference.

The compilation of this proceedings and the conference program would not have been possible without the generous efforts of the members of the Program Committee in reviewing and selecting the final papers and presentations. The Program Committee members are identified on the next page along with the sponsoring and supporting agencies of the conference. Special thanks are expressed to the Federal Highway Administration for its financial assistance in publishing this preprint, and in setting up the final program. Finally, the efforts and cooperation of the authors of the papers in this proceedings are deeply appreciated. These efforts have enabled us to publish a quality document which will constitute an excellent reference tool for engineers engaged in highway design, construction and maintenance for many years to come.

Donn E. Hancher and Charles F. Scholer, Co-Chairmen
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Sponsors and Supporting Agencies

The Third International Conference on Concrete Pavement Design and Rehabilitation has been made possible by the cooperation of various organizations in the United States and other countries. The conference has been planned by a Program Committee representing the following agencies:

Sponsors:

Purdue School of Civil Engineering
Federal Highway Administration
Portland Cement Association
Transportation Research Board
Federal Aviation Administration
Indiana Department of Highways

Supporting Agencies:

American Concrete Institute
American Concrete Pavement Association
American Road and Transportation Builders Association
American Society of Civil Engineers
Cembureau (European Cement Association)
Concrete Reinforcing Steel Institute
U.S. Army Corps of Engineers, Waterways Experiment Station
U.S. Air Force Engineering and Services Center
U.S. Naval Facilities Engineering Command
Roads and Transportation Association of Canada
Permanent International Association of Road Congresses (PIARC),
 Technical Committee on Concrete Roads
Wire Reinforcement Institute
International Road Federation

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