

課程大綱

Lecture #1:

- ◎ PMS課程簡介
- ◎ 鋪面網路養護管理系統(PNRMS)與美國ILLINET程式之應用
(李英豪、李英明)

Lecture #2:

- ◎ PSR, PSI Concept
- ◎ AASHO Road Test
- ◎ ESAL Concept and Calculations

Lecture #3:

- ◎ Pavement Condition Index (PCI)
- ◎ Pavement Distresses
- ◎ ASTM D5340-93
“Standard Test Method for Airport
Pavement Condition Index Surveys”

公路PCI 6433-93
Airport PCI 5340-93

Lecture #4:

- ◎ Pavement Management Process
(Haas, Chapter 1-3)
- Introduction

- Application of Systems Concepts to Pavement Management
- Basic Components of a PMS
- ◎ Demo of S-PLUS Program

Lecture #5:

- ◎ Pavement Management Process (Haas, Chapter 4-5)
 - Pavement Management Levels and Functions
 - Using PMS as a Research Planning and Technology Improvement Tool
- ◎ Linear Regression (PSI Eq.)
Use EXCEL Add-in and S-Plus Program

Lecture #6:

- ◎ Demo of MicroPaver Program
- ◎ Introduction of Unix System
- ◎ Distribute Term Projects
(道路與機場鋪面維修管理實作)

Lecture #7:

- ◎ Data Requirements (Haas, Chapter 6-7)
 - Inventory of Pavement Management Data Needs

Lecture #8:

- ◎ Data Requirements
(Haas, Chapter 8-14)
 - Pavement Performance
 - Pavement Evaluation: Structural Capacity, Condition Surveys, Safety
 - Feedback Database Management
- ◎ Describing the Present Status of Taiwan's Pavement Networks

Lecture #9:

- ◎ New Predictive Modeling Techniques for Pavements (TRR 1449)
- ◎ An Alternative Approach for Backcalculation of Pavement Layer Moduli (Lee, Chen)

Lecture #10:

- ◎ Determine Present and Future Needs
- ◎ Priority Programming
(Hass, Chapter 15-20)
 - Prediction Models for Pavement Deterioration
 - Establishing Criteria and Determining Needs

- Rehabilitation and Maintenance Strategies
- Priority Programming of Rehabilitation and Maintenance

Lecture #11:

- ◎ Example of Working System
 - Basic Features of Working Systems
 - Network Level Examples of PMS
 - The ILLINET (Illinois Interstate Highways Network Management System) Program
- ◎ “Forecasting Pavement Rehabilitation Needs for Illinois Interstate Highway System, ” Hall, Lee, Darter, Lippert

Lecture #12:

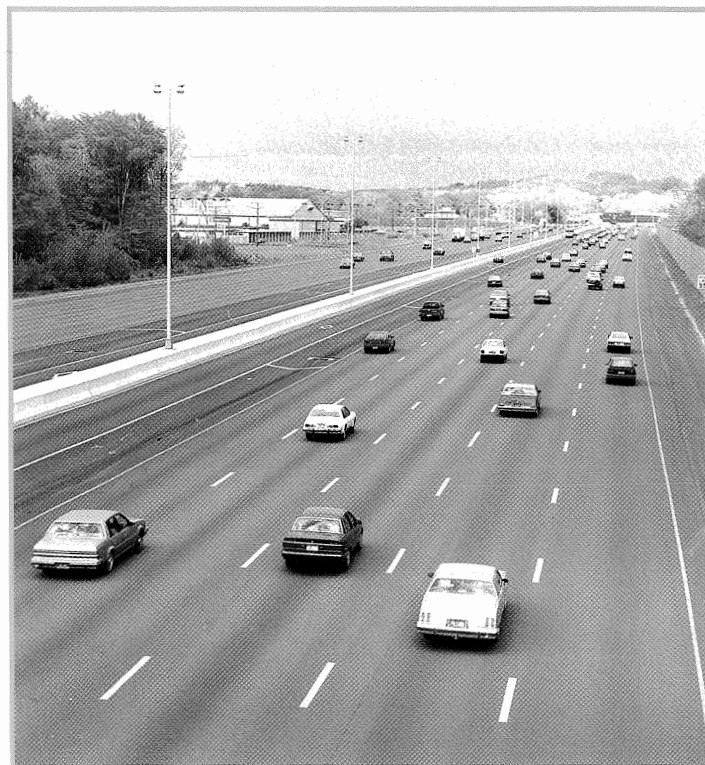
- ◎ Looking Ahead (LTPP)
 - Analyzing Special Problems
 - Application of Expert Systems and New Emerging Technologies
 - Institutional Issues and Barriers Related to PMS Implementation
 - Future Directions and Need for Innovation in Pavement Management

establishing a "pay-as-you-go" plan that placed receipts from a national gasoline tax into a Trust Fund, from which monies would be paid back to the States as construction was completed.

The Result of Eisenhower's Vision: The Interstate System Today

Although the Eisenhower Interstate System comprises only 1 percent of the Nation's highways, it carries 21 percent of the Nation's traffic. The Interstate System envisioned by President Eisenhower took over 25 years and \$129 billion to complete. More than 99 percent of the System is now open to traffic. After 35 years of Interstate construction, more than 75 percent of the System's mileage has been in use for more than 20 years.

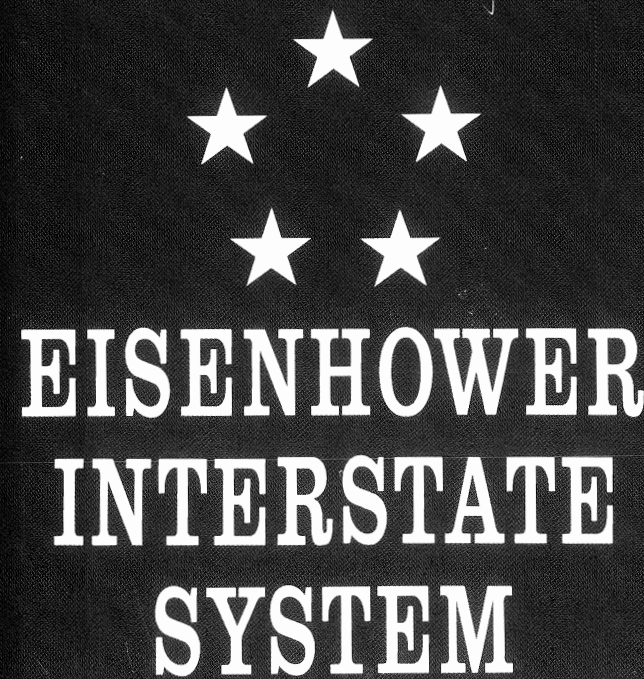
The designated Interstate System is 42,795 miles of highway, which includes sections in the 48 contiguous States plus Hawaii.



There are over 54,000 bridges on the system. The longest Interstate route is I-90, which runs 3,081 miles from Boston to Seattle; the shortest route is I-878 in New York City, at seven-tenths (0.70) of a mile long.

The Interstate System Now Renamed to Honor A Great Visionary

The sign shown on the front of this brochure, which now appears along the Interstates, was developed to honor Dwight D. Eisenhower as the driving force behind the creation of the Interstate System. This sign was designed by the Federal Highway Administration, in conjunction with the American Association of State Highway and Transportation Officials, along with representatives of the Eisenhower family, the Eisenhower Center, and The Eisenhower Society.



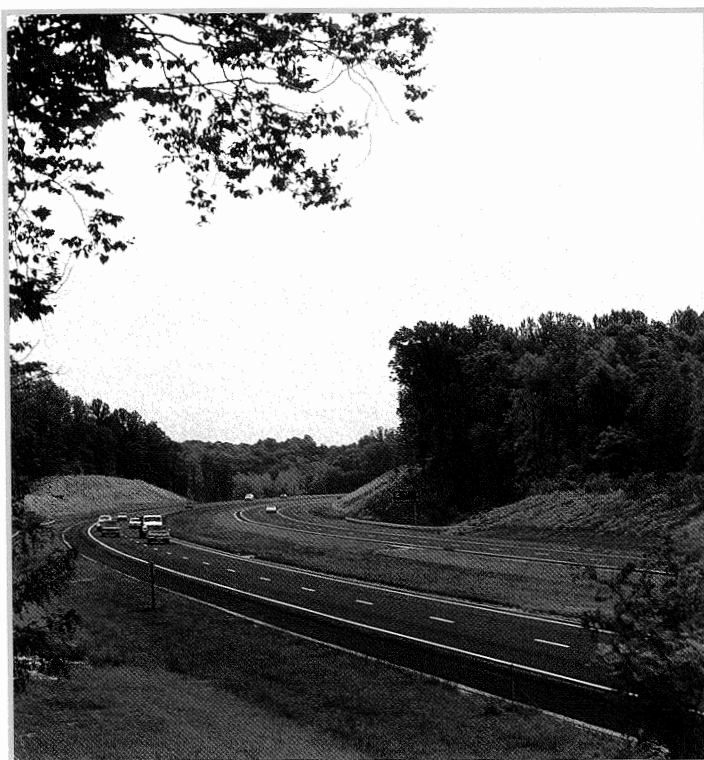
This new Interstate sign honors the vision of President Eisenhower in initiating the Interstate Highway System and marks the contributions of the thousands of employees in the Federal government, State Departments of Transportation, and industry. Their tireless efforts translated his vision into the world's finest highway transportation system.

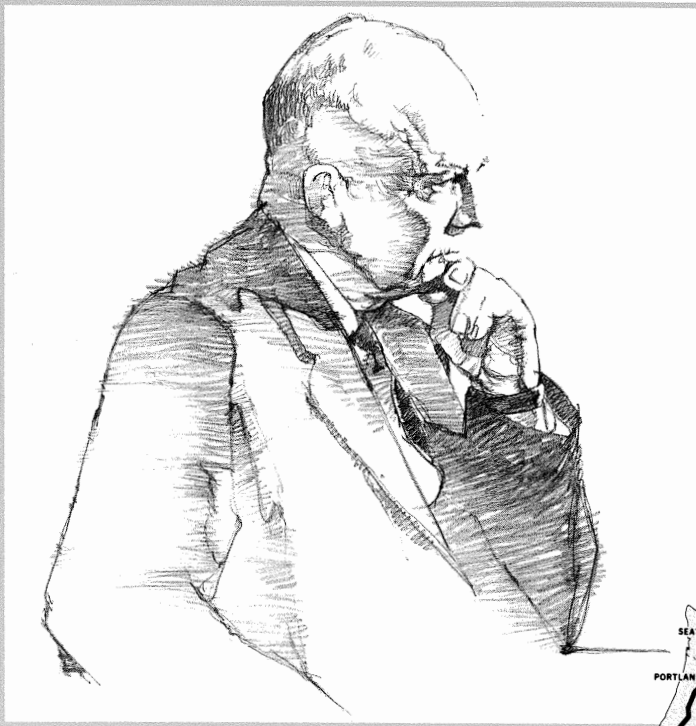
Rodney E. Slater
Federal Highway Administrator
July 29, 1993



U.S. Department
of Transportation

**Federal Highway
Administration**





Dwight D. Eisenhower
34th President of the United States

The Dwight D. Eisenhower System of Interstate and Defense Highways

America's Interstate System of highways was dedicated to the memory of President Dwight D. Eisenhower on October 15, 1990 by an Act of Congress, when Public Law 101-427 changed the official name of the system to The Dwight D. Eisenhower System of Interstate and Defense Highways. This action recognizes the tremendous vision and leadership of President Eisenhower, who guided to reality the concept of a national system of high-speed highways connecting all the major population, industrial, and agricultural areas of the United States.

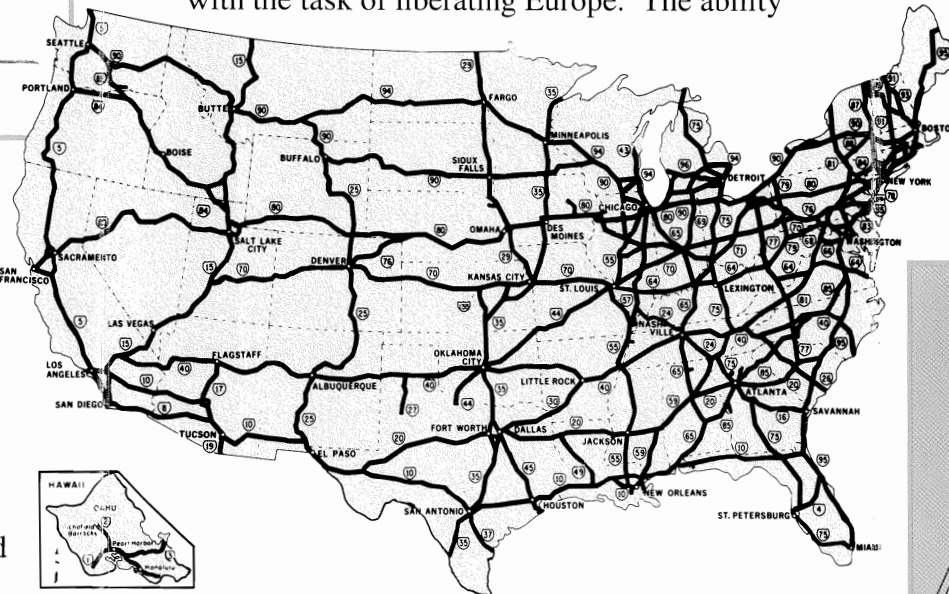
Eisenhower Discovers the Value of Highways

President Eisenhower's support of the idea of an Interstate System can be traced back to 1919, when, as Lt. Col. Eisenhower, he

accompanied the U.S. Army's first transcontinental motor vehicle convoy on its journey from Washington, D.C. to San Francisco, California. They traveled the Lincoln Highway, the best known route of the era.

The trip took two long months of difficult travel, and convinced Eisenhower of the need for a national system of efficient highways which would serve the American people through improved commerce. If the need arose, he knew that such a system would provide invaluable mobility for the national defense.

During World War II, Eisenhower, now General of the Army (a Five Star General), was charged with the task of liberating Europe. The ability



The Dwight D. Eisenhower System of Interstate and Defense Highways

to quickly move vast quantities of personnel and war materials on the autobahns of Germany reinforced in his mind the value of creating broad ribbons of highways across America.

The Vision Becomes Reality: Financing and Building America's Network of Highways

The construction of the 42,795-mile Interstate

System is the result of a long Federal-State partnership in which Federal standards are applied nationwide to ensure consistent design, and State agencies, along with America's construction industry, built the highways.

Although Congress had approved the concept of a National System of Interstate Highways in 1944, major funding was not made available until the mid-1950s, during Eisenhower's presidency. With the enactment of the Federal-Aid Highway Act of 1956, and the designation of the Bureau of Public Roads (now known as the Federal Highway Administration) as the lead agency, this largest public works project ever undertaken was begun. The main problem in building the Interstate System was in determining how this vast project might be paid for. With firm leadership, President Eisenhower succeeded in

