Safety and the Older Driver

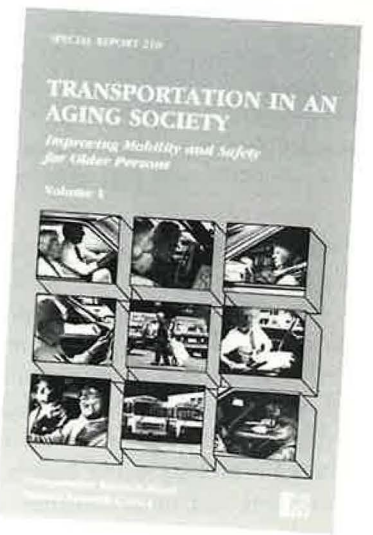
TRB Study Finds Age Poor Predictor of Driver Performance

The results of a 2-year study of the safety and mobility needs of the nation's growing ranks of senior citizens were announced at a news conference in October 1988 at the National Academy of Sciences in Washington, D.C. Originally initiated by the Transportation Research Board in 1986, the study was later formally requested by Congress in the Surface Transportation Assistance Act of 1987. The National Research Council assembled a committee of experts to respond to the request by Congress to conduct "a comprehensive study of (1) problems which may inhibit the safety and mobility of older drivers using the Nation's roads and (2) means of addressing these problems." The TRB Committee for the Study on Improving Mobility and Safety for Older Persons included experts in gerontology, medicine, highway engineering, vehicle design, traffic operations, urban planning, public transportation, driver education, licensing, and related areas.

The findings and recommendations of the study committee were published as TRB *Special Report 218: Transportation in An Aging Society: Improving Mobility and Safety for Older Persons.* The central finding of the committee was that age alone is a poor predictor of the performance of any individual, and thus it should not be the basis for restricting or withholding drivers' licenses.

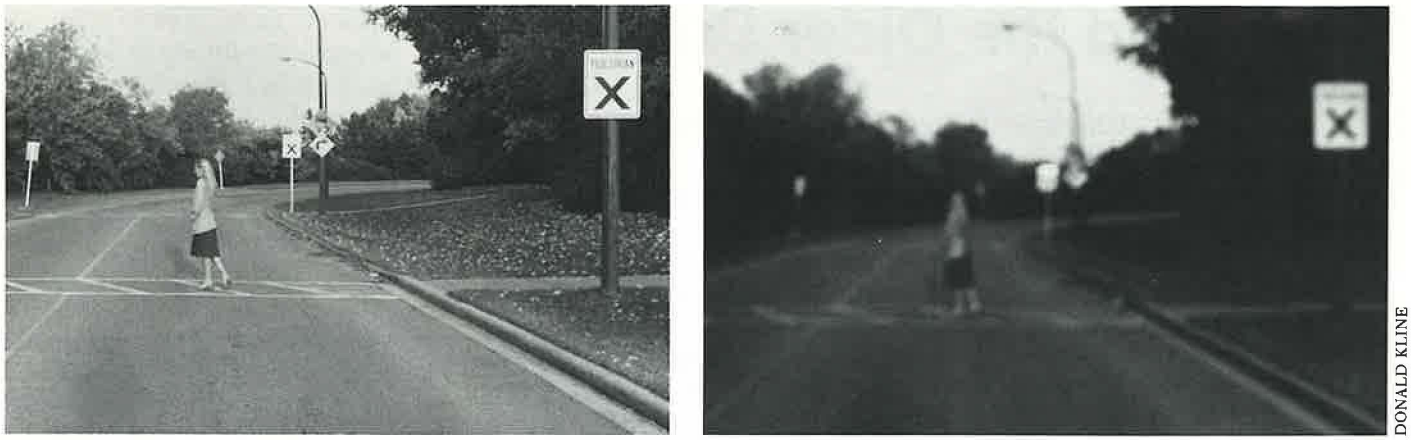
The committee recommended that instead of restricting drivers' licenses at a certain maximum age, highway safety should be improved by adjusting the design of highway and road signs and by adapting license screening tests to better identify people of all ages who have impairments that affect their driving. The committee favored innovative state licensing programs that grant a wide range of special licenses, such as those for daytime driving only, to balance safety concerns with the mobility needs of individuals.

Although automobiles and highways have improved dramatically, many design assumptions used today are based on the performance characteristics of a younger population. For example, size standards for letters on today's highway signs are based on research performed in the 1930s, often using test groups of males. According to the committee, these standards are inadequate to meet



Special Report 218: Transportation in An Aging Society: Improving Mobility and Safety of Older Persons *is available from the Transportation Research Board, 2101 Constitution Avenue, N.W., Washington, D.C. 20418 (Vol. 1, $14.00; Vol. 2, $28.00; 2-vol. set, $36.00).*

Presenting the findings of the 2-year TRB study of the safety and mobility needs of older persons at a news conference held at the National Academy of Sciences are committee members (left to right) *Bernice L. Neugarten, Rothschild Distinguished Scholar, Center on Aging, Health, and Society, University of Chicago; James L. Malfetti (committee chairman), Professor of Education and Director, Safety Research and Education Project, Teachers College, Columbia University, New York City; Fred C. Schwendiman, Director, Driver License Services, Utah Department of Public Safety, Salt Lake City; and Donald W. Kline, Professor and Head, Department of Psychology, University of Calgary, Alberta, Canada.*



DONALD KLINE

Many older drivers report difficulty in reading signs or seeing clearly at night. Photographs indicate view seen by average 20-year-old (left) *compared with that of average 70-year-old* (right), *whose eyes receive one-third less light.*

the visual needs of about 40 percent of drivers aged 65 to 74.

To remedy the situation, a performance standard for signs should be adopted based on the minimum required visibility distance needed by older drivers. This performance standard could be met by using bigger and brighter signs and more advance signing. Such improvements, wrote the committee, will ultimately benefit all drivers.

A "Graying" Population

By the year 2020, nearly 50 million Americans over 65 will be eligible for a driver's license; almost one-half of them will be 75 or older. This represents an increase in the 65-and-over age group from 12 percent of the current U.S. population to 17 percent. The committee found that more than 80 percent of the trips made by older Americans are by automobile, and this percentage is increasing.

Accidents involving older drivers often result from such physiological changes as decline in vision and hearing as well as cognitive changes that may slow reaction time. These changes may make driving more difficult. The committee noted that many drivers older than 55—especially those in the upper age groups—report problems reading traffic signs, seeing clearly at night, turning their heads while backing, reaching for safety belts, reading the instrument panel, and merging in high-speed traffic.

Changes in Vision

Aging generally causes yellowing and hardening of the lens as well as a contraction in pupil size. According to the committee, the eyes of the average 70-year-old receive about one-third the light received by those of the average 20-year-old. This in turn, means that the vision of most older drivers declines markedly at night. Studies cited by the committee indicate that a number of other vision functions also decline with age and that many older people with such impairment are unaware of it.

Fatal Crashes

Younger drivers aged 15 to 24 account for 34 percent of the drivers involved in the 41,000 fatal crashes that occur in the United States each year. Although older drivers are twice as likely as middle-aged drivers to be involved in fatal crashes, when examined in terms of incidents, the danger that the older person presents to overall traffic safety is small relative to that of the youngest drivers. The number of licensed and driving older drivers is increasing annually. As the older population grows,

Committee for Study on Improving Mobility and Safety for Older Persons

James L. Malfetti, Chairman, Columbia University, New York City
Merrill J. Allen, Indiana University, Bloomington
William G. Bell, Florida State University, Tallahassee
Daniel S. Brame, Kimley-Horn and Associates, Inc., Orlando, Florida
Douglas M. Ferguson (deceased), Nationwide Insurance Company
Donald W. Kline, University of Calgary, Alberta, Canada
David A. Kuemmel, City of Milwaukee, Wisconsin
Claire McKnight, City College of New York, New York City
David E. Martin, General Motors Corporation (retired), Detroit, Michigan
Bernice L. Neugarten, University of Chicago, Illinois
Paul L. Olson, University of Michigan, Ann Arbor
Fred C. Schwendiman, Utah Department of Public Safety, Salt Lake City
Michael Seaton, American Association of Retired Persons, Washington, D.C.
Rachel Shrauner, Cobb County Transit, Marietta, Georgia
John D. States, Rochester General Hospital, New York
William F. Ventry, Florida Department of Transportation, Tallahassee
Martin Wachs, University of California at Los Angeles
Sam Yaksich, Jr., AAA Foundation for Traffic Safety, Washington, D.C.

however, so will the number of fatalities among older people. In addition, a person aged 65 or older is more than three times as likely as a 20-year-old to die from serious injuries of equal severity.

Steps to better protect an older population would include adoption of mandatory safety belt laws by all states, design of more comfortable safety belts, review of federal crashworthiness standards for automobiles, and encouragement of older drivers to buy automobiles equipped with air bags.

Licensing and Roadway Design

Despite the growing need to expand license screening tests because of the increasing numbers of older drivers, the committee noted that some states are now using or considering reduced screening methods, such as mail-in renewals, as cost-saving measures. The committee advised states to continue to require in-person license renewals at least every 4 years. All states, it added, should require a corrected visual acuity of at least 20/40 and should screen for losses in peripheral vision that commonly occur with age.

Roadway improvements to better accommodate older drivers might include larger, more reflective highway signs, greater use of designated left-turn lanes and signals, and better maintenance of roadway markings.

Although improvements in roadway design will help, the committee predicted that an increasing number of older people who are unable to drive safely will live alone in their homes and require transportation. Individual communities should work to improve access to public transit, subsidized taxi service, maintained walkways, or other alternatives to driving.

Protecting Public Safety Near Pipelines

TRB Study Makes Recommendations for Public Safety and Private Practice

NAN HUMPHREY

Pipelines are currently one of the safest modes of transporting vital supplies of natural gas, crude oil, and petroleum products. However, maintaining and improving this safety record challenge industry and public officials alike as development expands near major long-distance transmission pipelines and increases the risk of failures from excavation damage, already the leading cause of pipeline accidents.

The National Transportation Safety Board highlighted these concerns in recent accident investigations and recommended that the Transportation Research Board undertake a study of the adequacy of public policies to protect public safety near pipelines. In response to this request, TRB formed a committee of experts in pipeline operations, accident analysis, land use planning, and safety program management (see box on page 10), and funded a year-long study to examine measures for enhancing public safety near pipelines. Under the leadership of John W. Fuller, Professor of Economics, Geography, Urban and Regional Planning at the University of Iowa, the committee compiled a synthesis of measures used by government and industry to address the safety risks posed by development near transmission pipelines and recommended ways to strengthen public policies and private practices.

Nan Humphrey is a senior program officer, TRB.

Safety Record of the Pipeline Industry

The safety record of pipelines compared with that of other modes of transporting hazardous materials, such as rail and truck, is good, although the perception of risk is heightened by the severity of some pipeline accidents.

Between 1971, the first full year of federally required reporting, and 1986,