## TRB Workshop

# Comprehensive Computerized Safety Recordkeeping Systems

Workshop participants at Airlie House in Virginia. *Front row, left to right:* Philip P. Modonia, Illinois Department of Transportation; Donald W. Reinfurt, University of North Carolina; William T. Baker, Federal Highway Administration; Charles V. Zegeer, Goodell-Grivas, Inc.; Barbara A. Hilger, Texas Transportation Institute; Charles J. Venturi, National Highway Traffic Safety Administration; David G. Blake, Utah Department of Transportation. *Back row, left to right:* James O'Day, University of Michigan; Clarence W. Mosher, New York State Department of Motor Vehicles; Phyllis E. Young, Federal Highway Administration; Benjamin V. Chatfield, Chatfield Associates, Inc.; Paul P. Jovanis, Northwestern University; Fred F. Small, Virginia Department of Highways and Transportation; Charles P. Brinkman, Federal Highway Administration; and James K. Williams, Transportation Research Board.

*On May 6-8, 1985, TRB's Committee on Traffic Records and Accident Analysis conducted a Workshop on Comprehensive Computerized Safety Recordkeeping Systems (CCSRS) at Airlie House in Virginia. In the following article, the objectives and discussion of the workshop participants are briefly summarized.*

## BACKGROUND

For years, effective traffic records systems have been recognized as a necessary part of successful highway safety programs. They are needed to identify safety problems and to determine the impact of safety countermeasures and programs on reducing the number and the severity of traffic accidents. The Highway Safety Act of 1966, which instituted federal support for state highway safety programs, required that each state's program include safety recordkeeping. Many states have invested substantial amounts of funds in statewide traffic records systems since 1966, but the need for information to support traffic safety programs is far from being satisfied.

Traffic records systems have not achieved a high level of success because the resources needed to operate an effective system are underestimated and the potential benefits of an effective system are not recognized.

In 1984 Congress enacted Public Law 98-363 to provide grants to the states for the establishment or improvement of "comprehensive computerized safety recordkeeping systems" (CCSRS). A CCSRS is a state-administered system comprised of computerized files of data on motor-vehicle traffic accidents, drivers, vehicles, and highways. The files, which are often administered by different agencies, are linked in a fashion that permits correlation of data from separate files. Such systems have been known among safety professionals for a number of years as statewide integrated traffic records systems or, more often, simply as traffic records systems.

Clarence W. Mosher *(center)*, Director of Traffic Safety Records, New York State Department of Motor Vehicles, explains the New York Integrated Traffic Safety Information Network Improvement Program to Donald W. Reinfurt *(left)*, Associate Director for Analysis Studies, University of North Carolina Highway Safety Research Center, and James O'Day *(right)*, Interim Director, University of Michigan Transportation Research Institute.

The components of safety recordkeeping systems usually include files developed independently to support a variety of state and local programs. Examples are files for managing driver licensing and motor-vehicle registration programs, files for managing law-enforcement and public-health programs, and files for managing highway planning, construction, maintenance, and traffic-operation activities. Also included are files created primarily to support specific traffic-safety programs such as alcohol-related accidents and safety-belt use.

There is growing recognition that the value of the data in special-purpose files is greater if it can be used for more than one purpose. Closely related to this is a concern that public funds may be wasted by duplication of data collection and processing efforts. For this reason, states have "linked" some of their special-purpose files to permit merging or correlation of data from related files. Linkage of accident files, for example, and traffic-volume files allows a state to compute accident rates for short highway segments. The key is the use of consistent

Benjamin V. Chatfield *(center)*, President, Chatfield Associates, Inc., and chairman of TRB's Committee on Traffic Records and Accident Analysis, discusses workshop agenda with Donald W. Reinfurt *(left)*, University of North Carolina Highway Safety Research Center, and Charles V. Zegeer *(right)*, Goodell-Grivas, Inc.


Fred F. Small, Highway and Traffic Safety Coordinator, Virginia Department of Highways and Transportation, and Barbara A. Hilger *(center)*, Accident Analysis Division, Texas Transportation Institute, review outline of Information Systems Management with Phyllis E. Young *(right)*, Office of Highway Safety, Federal Highway Administration.

location references as the link between the accident and traffic-volume files.

## WORKSHOP EFFORTS

The objectives of the TRB Workshop on Comprehensive Computerized Safety Recordkeeping Systems were (a) to identify and document the characteristics likely to be associated with an effective comprehensive computerized safety recordkeeping system, (b) to examine the technical and institutional obstacles to implementation of a system, (c) to describe the costs and benefits of a CCSRS, and (d) to propose relevant research.

In reviewing the research application of traffic-records data, subgroups of the workshop participants developed models for evaluating alcohol countermeasures and mandatory safety-belt laws using available data sources supplemented by additional hospital and medical records.

The workshop participants reviewed the various component files essential for a comprehensive system. There appears to be no upper limit. As a minimum, however, it was suggested that a system should include driver-licensing, motor-vehicle-registration, traffic-accident, traffic-volume, and highway-inventory files. All of the files should be linked to the accident file. This linkage is normally achieved by including in the files the following:

- Driver-license number in accident and driver-licensing files,
- Vehicle-registration or vehicle-identification number (VIN) in accident and motor-vehicle files,
- Location reference code in accident and traffic-volume files, and
- Location reference code in accident and highway-inventory files.

Location reference codes in the traffic-volume and highway-inventory files should be compatible to avoid the need for multiple location reference codes in the accident file.

State efforts to link or integrate these traffic data files have been encouraged and funded by federal agencies for many years. A substantial part of the federal effort has been related to the highway planning aspects of the federal-aid highway program, which is funded through the Federal Highway Administration. Since 1966 federal funds have also been distributed to the states under the

Charles J. Venturi, Office of State Program Assistance, National Highway Traffic Safety Administration, and Barbara A. Hilger, Accident Analysis Division, Texas Transportation Institute, prepare a section of the workshop report.

traffic records program and other safety programs administered by the National Highway Traffic Safety Administration and the Federal Highway Administration.

These federally supported programs focus on different objectives, but they are highly complementary. Integrated Highway Information Systems (IHIS) have been designed to meet the needs of state agencies primarily responsible for highway planning, construction, and maintenance. While meeting some of these needs, safety recordkeeping systems also support the programs of traffic-law enforcement agencies, public-health agencies, motor-vehicle administrations, and highway-safety agencies.

Workshop participants included representatives of NHTSA, FHWA, and university highway safety research centers and institutes; consultants in the field of traffic-records systems; and personnel from state departments of transportation, motor vehicles, and highway patrol.

A full summary of the workshop deliberations will be published in TRB's *Circular* series as a reference for state highway-safety program managers and for traffic-records specialists at all levels of government.

Participants of workshop panel discuss examples of effective comprehensive computerized safety recordkeeping systems. *Left to right:* Paul P. Jovanis, Civil Engineering Department, Northwestern University; Thomas Boswell, Planning and Analysis Division, California Highway Patrol; Charles V. Zegeer, Vice President, Goodell-Grivas, Inc.; William T. Baker, Office of Highway Safety, Federal Highway Administration; David G. Blake, Information Management Engineer, Utah Department of Transportation; and Philip P. Madonia, Bureau of Safety Programs, Illinois Department of Transportation.