Issued in Washington, DC, on October 16, 1997.

Eric Gabler,

Manager, Passenger Facility Charge Branch.

[FR Doc. 97–28162 Filed 10–22–97; 8:45 am]

BILLING CODE 4910–13–M

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

[Docket No. 97–071; Notice 1]

New Flyer of America, Inc.; Receipt of Application for Decision of Inconsequential Noncompliance

New Flyer of America of Crookston, Minnesota, has determined that 115 buses fail to comply with 49 CFR 571.217, Federal Motor Vehicle Safety Standard (FMVSS) No. 217, ''Bus Emergency Exits and Window Retention and Release,'' and has filed an appropriate report pursuant to 49 CFR Part 573, ''Defect and Noncompliance Reports.'' New Flyer has also petitioned to be exempted from the notification and remedy requirements of 49 U.S.C. Chapter 301—''Motor Vehicle Safety'' on the basis that the noncompliance is inconsequential to motor vehicle safety.

This notice of receipt of a petition is published under 49 U.S.C. 30118 and 30120 and does not represent any agency decision or other exercise of judgment concerning the merits of the petition.

FMVSS No. 217, Paragraph S5.2.2.1 requires that buses provide emergency exit area, in total square centimeters, of at least 432 times the number of designated seating positions. It requires that 40 percent of the emergency exit be distributed on each side of the bus. It also limits the amount of area to 3,458 square centimeters that can be credited for an emergency exit.

During the 1995–1997 model year, New Flyer produced 115 transit buses, models D35LF (Diesel 35 ft Low Floor) and C35LF (CNG 35 ft Low Floor) which do not comply with FMVSS No. 217. The subject transit buses have only one emergency exit on the right side of the bus instead of two, as required by the standard.

New Flyer supports its application for inconsequential noncompliance with the following:

The buses exceed the exit area requirements on all sides. The left side has two exit windows for a total of 25,000 square centimeters or 4.67 times the required area. The right side has one exit window with 12,500 square centimeters of exit area or 2.33 times the required area. The standard does not allow any one exit to claim more than 3,458 square centimeters. Therefore, the right side of the bus does not have the required number of emergency exits although it exceeds the required area. Each bus has two roof exits, where the standard only requires one roof exit. Overall, the buses have 3.28 times the required exit area.

Retrofitting these buses to comply with the standard would require modifying and retesting the existing exit door or replacing the right side window with an emergency exit window, which is not possible because the wheel housing limits accessibility. The seating position relative to the window allows for easy exit; but if the window was accidentally opened, there is potential for someone to fall out. Modifying the exit door to conform to the release force requirements is a possible solution, but would require redesigning the door. Considering the bus already has 3.28 times the required exit area, modifying the buses to include an additional exit would not add to motor vehicle safety.

New Flyer does not believe that the buses are a safety hazard since the bus has excessive accessible emergency exit area. These buses are operated by transit authorities with trained professional drivers; none are operated by the general public. New Flyer has a close relationship with the operators of the buses and is continuously informed of any problems or concerns, and has never had an incident or complaint involving the number or location of emergency exits.

Interested persons are invited to submit written data, views, and arguments on the application of New Flyer described above. Comments should refer to the docket number and be submitted to: Docket Section, National Highway Traffic Safety Administration, Room 5109, 400 Seventh Street, SW, Washington, DC 20590. It is requested but not required that six copies be submitted.

All comments received before the close of business on the closing date indicated below will be considered. The application and supporting materials, and all comments received after the closing date, will also be filed and will be considered to the extent possible. When the application is granted or denied, the notice will be published in the **Federal Register** pursuant to the authority indicated below.

Comment closing date: November 24, 1997.

(49 U.S.C. 30118 and 30120; delegations of authority at 49 CFR 1.50 and 501.8)

Issued on: October 17, 1997.

L. Robert Shelton,

Associate Administrator for Safety Performance Standards.

[FR Doc. 97–28106 Filed 10–22–97; 8:45 am]

BILLING CODE 4910–59–P

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

[NHTSA Docket No. 97–062–N01]

Traffic Safety Programs—Office of Research and Traffic Records; Strategic Plan for Behavioral Research in Traffic Safety

AGENCY: National Highway Traffic Safety Administration (NHTSA); Transportation.

ACTION: Request for comments on strategic issues and research requirements to support research planning.

SUMMARY: NHTSA's Office of Research and Traffic Records, Research and Evaluation Division (ORTR/RED) is engaged in the process of planning its research programs for fiscal years 1998 through 2002. In conformance with the Government Performance and Results Act of 1993 (P.L. 103–62), ORTR/RED is seeking public comment on the draft strategic plan presented in this notice. These comments will be used to help form a strategic implementation plan to direct the division's research program during the next five years.

DATES: Written comments will be accepted through November 30, 1997.

ADDRESSES: Please direct all written comments to the National Highway Traffic Safety Administration, Docket Section, Room 5111, Docket # 97–062-N01, 400 Seventh Street, S.W., Washington, DC 20590. (Docket hours are from 9:30 am to 4:00 pm.) Comments submitted to the docket will become a matter of public record.

FOR FURTHER INFORMATION CONTACT: Jesse Blatt, Office of Research and Traffic Records (NTS–30), Room 6240, 400 Seventh Street, S.W., Washington, DC 20590. (Telephone 202–366–5588 or Email at jblatt@nhtsa.dot.gov)

SUPPLEMENTARY INFORMATION: More than 3 million persons were reported injured and over 40 thousand persons died in motor vehicle crashes in 1996 (Traffic Safety Facts: 1996, National Center for Statistics and Analysis). While a small proportion of the crashes causing these injuries and fatalities were attributed to vehicle and roadway problems, the vast majority were caused by human

performance problems. Within the National Highway Traffic Safety Administration (NHTSA), the Office of Research and Traffic Records, Research Evaluation Division (ORTR/RED) conducts research on human behaviors that can bring about improvements in traffic safety. The research is conducted in support of traffic safety programs directed at reducing the incidence and consequences of motor-vehicle crashes.

ORTR/RED is responsible for research in the following program areas: Impaired Driving; Occupant Protection; Speeding and Unsafe Driving Actions; Older Drivers; and Pedestrians, Bicyclists, and Motorcyclists. In addition, ORTR/RED efforts address Novice Driver Education, Emergency Medical Services, evaluation of the Safe Communities program, and the use of emerging safety and enforcement technologies.

ORTR/RED is reexamining its research strategies in accordance with the Government Performance and Results Act, or GPRA, of 1993 (P.L. 103–62). The Act requires the establishment of a program mission, assessment of external needs, development of specific strategic objectives and accompanying performance measures, and the use of actual performance results to redirect subsequent planning efforts. In response to these requirements, ORTR/RED is requesting public comment on its Draft Strategic Plan.

The Draft Strategic Plan is intended to guide behavioral traffic safety research efforts from FY 1998 through FY 2002. It is heavily influenced by the needs and outcomes identified as part of ongoing budget planning processes. Input received as a result of this notice will be used to reassess currently identified needs and projects for fiscal years 1998 and 1999 and to further define the needs and outcomes for fiscal years 2000 through 2002.

Electronic Access

This document is posted on NHTSA's site on the world-wide web (http://www.nhtsa.dot.gov). To access it from NHTSA's home page , select ''People,'' then ''Injury Prevention,'' then ''Research and Evaluation.'' To go directly to the appropriate page, enter: http://www.nhtsa.dot.gov/people/injury/research/. Then select ''Draft Strategic Plan for Behavioral Research.''

Comments Requested

The purpose of this notice is to provide an opportunity for the public and other interested parties to review and comment on ORTR/RED's assessment of each program area, the strategic objectives which are identified, and the activities or outcomes that ORTR/RED intends to pursue. Reviewers are invited to comment on program areas or issues that are not addressed, recommend priorities, or provide rationales for alternative approaches. Comments must be submitted in writing. Respondents are requested to identify the program or program area towards which their comments are directed.

The Office of Research and Traffic Records, Research and Evaluation Division (ORTR/RED) will review comments received in response to this notice and the draft plan described herein. These comments will be considered as part of the development of a five-year strategic implementation plan for the period between 1998 and 2002. The final plan will include a section summarizing the comments received in response to this notice and in response to other inputs.

Organization of the Draft Plan

The Draft Strategic Plan consists of two parts. Appendix A provides a brief discussion of the most significant human performance problem areas identified by the agency, followed by the mission and strategic objectives of the Office of Research and Traffic Records, Research Evaluation Division (ORTR/RED). Within each objective, the anticipated outcomes from the research effort during the period from 1998 to 2002 are summarized by program area. Appendix B presents a more detailed discussion of the agency's understanding of the problems, its current research and evaluation efforts, and strategic issues for research in each program area. The following Table of Contents provides an overview of the plan and supporting documentation.

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Issued on: October 17, 1997.

James L. Nichols,

Director, Office of Research & Traffic Records, National Highway Traffic Safety Administration.

Appendix A—Draft Strategic Plan for Behavioral Research in Traffic Safety

Background

More than 3,000,000 persons were reported injured and over 40,000 persons died in motor vehicle crashes in 1996 (Traffic Safety Facts: 1996, National Center for Statistics and Analysis). While a small proportion of the crashes causing these injuries and fatalities can be attributed to vehicle and roadway problems, the vast majority are caused by human performance problems. Despite impressive reductions over the past two decades, the annual traffic-related fatalities and injuries are increasing slightly since reaching a low in 1992. An increase in travel has contributed to the fatality rates, expressed as number of fatalities per 100 million vehicle miles traveled, remaining at approximately 1.7 during this period.

In developing a response to this challenge of improving human performance, NHTSA focuses its traffic safety efforts on the most significant causes or problems contributing to fatality-and injury-causing crashes. ORTR/RED conducts behavioral research in the following areas: Impaired Driving, Occupant Protection; Speeding and Unsafe Driving Actions; Older Drivers; and Pedestrian, Bicyclists, and Motorcyclists; Novice Driver Education, Emergency Medical Services, Safe Communities, and Technology Applications. A brief description of the extent of these problems is provided here. A more detailed discussion can be found in Appendix B

Impaired Driving. In 1996, alcohol was cited as a contributing factor in crashes leading to approximately 17,000 traffic fatalities, and over 1,000,000 injuries. In addition, there has been an increase in alcohol-related fatalities by approximately 4 percent between 1994 and 1996. Driving while impaired by drugs other than alcohol may also constitute a significant highway safety problem, although it appears to be much smaller than the alcohol-related problem.

Occupant Protection. The national average safety-belt usage rate has hovered at about 68 percent for several years, despite widespread educational efforts. However, belt use by people involved in potentially fatal crashes is much lower, at about 50 percent. The need to use child safety seats appears to be more widely accepted, with usage rates currently ranging between 60 and 90 percent, depending on the age of the child. Investigations of recent air bag related injuries and fatalities to young children and short-statured adults has reemphasized the need to increase proper safety belt and child safety seat use, particularly for all children under 12.

Speeding and Unsafe Driving Actions. Many crashes are attributable to unsafe driving behaviors such as following too

closely, inattention, speeding, and aggressive driving. In 1996, speed was a factor in over 13,000 fatalities. Many states repealed speed limit laws based on the national maximum speed limit, and now average speed limits are higher. Aggressive driving actions—such as excess speed, running red lights, and disregard of traffic signs and signals—have a high likelihood of causing crashes.

Older Drivers. People over 70 years of age represented 13 percent of all fatalities and are slightly over-represented in crashes, when compared to the general population of drivers. As the proportion of older drivers increases over the next few years, over-involvement of this population group in fatalities and injuries could become a more significant problem.

Pedestrians, Bicyclists, and Motorcyclists. About 30,000 pedestrian crashes involving young people occur annually. Older persons are significantly over involved in pedestrian fatalities. Alcohol and environmental factors are also significant components of the pedestrian crash problem. In large urban areas, nearly half of all those killed in motor vehicle crashes are pedestrians. There has been little or no change in bicyclist fatalities, which are reported as 830 in 1995, and injuries during the past few years. Currently, bicyclist helmet use laws include requirements for children only, even though one-half of the annual fatalities occur to people of age 21 years or older. Motorcyclists are about 16 times as likely as vehicle occupants to die in a crash, and about 4 times as likely to be injured. In 1996, 43 percent of the approximately 2,200 fatally injured motorcyclists were not wearing helmets at the time of the crash. These motorcyclists tended to have high intoxication rates as well.

Novice Driver Education. Young drivers between the ages of 16 and 20 experience the highest fatality and injury rates per capita. At the request of Congress, NHTSA submitted a program in 1994 to improve novice driver education that has two-stages of education that would parallel stages of a graduated licensing system.

Emergency Medical Services. Emergency Medical Services (EMS) differs from the other program areas receiving research attention in that it is entirely focused on post-crash rather than pre-crash events. Gaps in our knowledge of effective out-of-hospital care, due to the absence of well-defined, uniform, and complete data, impeded efforts to define the extent to which the post-crash environment contributes to injuries and fatalities.

Safe Communities. Safe Communities is a recent initiative intended to bring together citizens and a wide range of community institutions—such as law enforcement, hospitals, managed care facilities, emergency medical services, schools, insurance companies, other public and private businesses and local governments—to work on solving local traffic safety problems within the broader context of meeting the injury control challenge. Knowledge gained from successes and setbacks will provide guidance to expansion of this effort.

Technology Applications. Future increases in vehicle travel and risks of crashes are anticipated, even as fewer resources are being allocated to traffic-law enforcement. Emerging technologies—such as ''smart card'' drivers licenses that prevent fraudulent ID, ignition interlock devices, electronic monitoring wristbands, and electronic vehicle and driver identification systems—offer the promise to improve the effectiveness and efficiency of safety and enforcement programs. Adaptations of emerging electronics and communications technologies, as part of the Intelligent Transportation Systems (ITS) program, could have significant potential to aid emergency rescue services, crash investigations, traffic law enforcement, and other traffic safety efforts.

Traffic Safety Programs at NHTSA

The National Highway Traffic Safety Administration (NHTSA) is one of seven operating administrations of the U.S. Department of Transportation. Oversight of highway travel is split between the Federal Highway Administration (FHWA) and NHTSA. NHTSA's responsibilities focus on safety issues of motor vehicles and non-commercial roadway users.

NHTSA's mission is to save lives, prevent injuries and reduce traffic-related health care and other economic costs. The agency develops, promotes and implements effective educational, engineering, and enforcement programs toward ending preventable tragedies and reducing economic costs associated with vehicle use and highway travel. This is accomplished through research, demonstration, and evaluation; setting and enforcing safety performance standards for motor vehicles and items of motor vehicle equipment; consumer outreach activities, and awarding grants to state and local governments for implementation of safety programs. The complex relationship between a motor vehicle and its driver is of major interest. Factors influencing this relationship include the driver's physical and mental abilities and driving experience, the nature of driving, the responsiveness of the motor vehicle to the driver's demands, and environmental conditions.

NHTSA employs two major approaches to improving highway safety. One approach focuses on motor vehicles and investigates methods to make them safer, in terms of improving vehicles' characteristics that both reduce their likelihood to be involved in crashes and increase their capabilities to protect occupants from crash forces. The other addresses the behavior of roadway users—drivers, bicyclists, motorcyclists, pedestrians. Approaches may be direct, by influencing the users themselves, or indirect, by influencing intermediary change agents—friends and family members, educators, police, judges, legislators, licensing officials, emergency medical service and health care practitioners—who may exert influence over certain groups of roadway users.

The responsibility within NHTSA for improving safety-related behaviors lies within the Associate Administrator for Traffic Safety Programs (TSP). TSP's Mission is to: (1) Lead the national traffic safety effort, including emergency medical services; (2) save lives and reduce injury through behavioral research, demonstration, and evaluation; and (3) develop safety programs and strategies for use by public and private organizations. Program areas include impaired driving, occupant protection, traffic law enforcement, speed and other unsafe driving actions, motorcyclists, bicyclists, pedestrians, older drivers, driver education and licensing, and emergency medical services. Traffic Safety Programs (TSP) comprises three offices: the Office of Traffic Injury Control Programs (OTICP), the Office of Communications and Outreach (OCO), and the Office of Research and Traffic Records (ORTR).

Within the Office of Research and Traffic Records, the Research and Evaluation Division (ORTR/RED) conducts research in each of the program areas listed above to specify traffic-safety problems that can be addressed through behavioral approaches; identify populations in need of intervention; and determine appropriate legislative, enforcement, adjudicative, and educational countermeasure approaches for those problems. In addition to developing and testing the effectiveness of new countermeasures, ORTR/RED also evaluates the implementation of existing traffic safety programs in actual practice, thus establishing a foundation for broader adoption of effective programs. Information developed by ORTR/RED is integrated into traffic safety programs administered by other offices of TSP and the Office of State and Community Services for use by community, state, and national organizations and distributed through other NHTSA offices.

1ORTR/RED must strike a balance between these activities in order to meet the shorter term needs of other offices and still conduct problem identification and countermeasure development activities which have a longer time horizon associated with achieving an outcome. Programs in the field now are based on past research efforts; current research establishes a foundation for programs in the future. A major challenge to Traffic Safety Programs is to align the activities in all three offices to be most effective in meeting overall agency objectives, which are to reduce traffic-related fatalities and injuries. ORTR/RED sets priorities and apportions its work among the competing interests through the budget process and internal decision making. The Strategic Plan exercise is an effort to further improve the alignment and outcomes of ORTR/RED programs and resources.

Summary of the 1998 ORTR/RED Strategic Plan

ORTR/RED Vision and Mission

Vision Statement: Lead the nation, department, and agency with high quality research and evaluation in traffic safety issues, conducted in a professional environment, and responsive to the input and needs of the public and the traffic safety community.

Mission Statement: Plan and conduct a national research program to identify and analyze road user problems; develop and test scientifically sound programs; and evaluate traffic safety programs of significant potential.

Strategic Objectives

Problem Analysis: anticipate and understand the nature and magnitude of various aspects of the highway crash problem and monitor trends and public perceptions in the various program areas.

Countermeasure Development: develop program actions (e.g., legislation, enforcement, sanctions, incentives, technology applications, public information and education, emergency medical care) to reduce the number of crashes and severity and crash consequences; and determine the effectiveness of these countermeasures in improving behaviors that lead to reducing crashes, deaths, or injuries.

Program Evaluation: determine whether existing countermeasure programs should be continued, expanded, modified, or discontinued.

Key Considerations in the Development of Strategic Objectives

This Draft Strategic Plan is consistent with the 1997 Department of Transportation Draft Strategic Plan entitled ''A Visionary and Vigilant Department of Transportation Leading the Way to Transportation Excellence in the 21st Century.'' The Department's plan outlined five strategic goals:

- Safety: Promote the public health and safety by working toward the elimination of transportation-related deaths, injuries, and property damage;
- Mobility: Shape America's future by ensuring a transportation system that is accessible, seamless and efficient, and offers flexibility of choices;
- Economic Growth and Trade: Advance America's economic growth and competitiveness domestically and internationally through efficient and flexible transportation;
- Human and Natural Environment: Protect and enhance communities and the natural environment affected by transportation; and
- National Security: Advance the nation's vital security interests in support of national strategies such as the National Security Strategy and National Drug Control Strategy by ensuring that the transportation system is secure and available for defense mobility, that our borders are safe from illegal intrusion, and by promoting worldwide economic growth and stability.

The ORTR/RED Draft Strategic Plan directly supports the first two of these departmental goals—safety and mobility—through research, development, and evaluation and indirectly supports the remaining goals through anticipated reductions in the number and severity of crashes and their attendant personal, economic, societal and environmental effects.

Prior to the development of the Departmental Strategic Plan, NHTSA published a long term strategic plan and a five year (1995–99) Strategic Execution Plan (SEP). The NHTSA Strategic Plan presents 11 goals is support of three strategies: Provide Leadership and Set an Agenda; Support Research and Apply the Results to Education, Engineering, and Enforcement to Reduce Road Casualties and Costs; and Transform NHTSA Through Continuous Improvement. The ORTR/RED Behavioral Research Strategic Plan is consistent with the objectives outlined in goals 5 and 6 of the SEP, which focus on research and the application of the results to crash avoidance challenges.

NHTSA was a pilot agency under GPRA from 1994 to 1996. The Act requires federal agencies to plan around outcomes, rather than outputs, and measure performance. The agency has stratified its performance measures into three levels: overall outcomes; intermediate outcomes; and program outputs. NHTSA's overall outcome goals are to reduce fatalities and injuries per 100 million vehicle miles traveled; and to reduce fatalities and injuries per 100,000 resident population. The agency has stated intermediate outcome goals for key behavioral patterns, such as seat belt use and impaired driving. For example, the goal for seat belt usage is to increase use rates to 85 percent by 2000 and 90 percent by 2005. The agency has committed to reduce the number of alcohol-related traffic fatalities to 11,000 in 2005 from 17,126 in 1996. These and other traffic safety goals are restated in NHTSA planning documents that have been published since the Strategic Execution Plan, such as the Presidential Initiative for Increasing Seat Belt Use Nationwide, EMS Agenda for the Future, GPRA Performance Plans; and annual Budget submissions to Congress. Achieving these goals helps the agency to achieve its overall outcome goals. The agency measures program outputs to ensure that products help to achieve the intermediate outcome goals, that will, in turn, achieve the overall outcome goals. The ORTR/RED plan describes how behavioral research will help the agency achieve its stated goals and anticipate future needs of the agency and the Department of Transportation.

Approach to Meeting the Strategic Objectives

Before undertaking any problem analysis or countermeasure development effort, ORTR/RED considers, at least implicitly, several general issues. Although these issues are described as ''either-or'' alternatives, they overlap to a certain extent, depending on the problem and the countermeasures under consideration.

- Involved Population versus Change Agents. Historically, countermeasure research efforts have focused on the individuals engaged in problem behaviors (e.g., drinking drivers, safety belt non-users, motorcyclists who do not wear helmets). An alternative approach is to target research on intermediary change agents (e.g., police officers, legislators, community traffic safety officials) to obtain their support and action (e.g., to support legislation, provide political permission for enforcement of traffic safety laws).
- Gradual Improvement versus Major Advancement. For the most part, agency research and development has fashioned continuous and gradual improvements to existing programs and activities. However, experience has shown that some of the most profound and dramatic advances in traffic safety have resulted from innovative (and often controversial) programs that have resulted in significant media attention and public awareness (e.g., enactment of Minimum Drinking Age (21) Laws, passage of child passenger safety laws).
- People versus Equipment and Technology. Except for supporting technological innovation in the early years of alcohol-impaired driving research, ORTR/RED's attention to technology has been limited. There is currently increased interest in developing technological solutions to behavioral problems that have resisted change (e.g., automated speed enforcement, detection and ticketing of red-light runners, impaired driver detection and interlocks, repeated warnings of safety-belt non-use in vehicles) or that would improve the efficiencies or lower the costs of current programs.

The interaction of these strategic countermeasure-development issues and the needs of problem analysis resulted in the following questions that ORTR/RED staff used to assess the status of each traffic safety program area during the development of this plan:

1. What is the current status of problem assessment in this area? Do we have a good understanding of the magnitude and characteristics of the problem? Where are the gaps in our knowledge?
2. Is there a need for continuous tracking or monitoring to support internal and external decision making about this program area? What kind of monitoring is needed?
3. Do we know enough about the people whose behavior we wish to modify? How much do we need to know to effect the desired changes?
4. Are our research products and information designed for and reaching appropriate decision makers or intermediaries? What kinds of research are needed to improve the effectiveness or distribution of such products and information?
5. Are there operational countermeasures that need to be evaluated to support decision making regarding continued or wider implementation?
6. Are there operational countermeasure approaches where incremental improvements in effectiveness or efficiency could be made? What kind of research and development activity is needed?
7. Are there innovative or controversial approaches that have the potential for major gains? Are there new technologies that could be applied to make significant gains? What kind of research and development activity is needed?
8. Are there countermeasures that now appear impractical because of a lack (or shift) of change agent interest or support? What kind of research and development activity is implied?
9. In general, is public interest and support for this area sufficient to effect change? If not, what kind of research and development activity is needed?

The answers to these questions provided the raw materials from which the plan was developed, and emphasized the division of behavioral research efforts into three distinct categories: Problem Analysis, Countermeasure Development and Test, and Program Evaluation.

Strategic Objective: Problem Analysis

Identify opportunities to intervene in unsafe behaviors by analyzing traffic safety problems and monitoring changes in public knowledge, attitudes, and practices regarding highway safety issues. These efforts may identify individuals whose behavior threatens their own or the public's safety, or situations that predispose or precipitate unsafe actions.

The outcome objectives listed under each program area represent the critical problem assessment factors for that area. Such factors include: (1) Specifying quantitative relationships; (2) identifying particular groups that are over-represented in crashes or fatalities, or that have a direct influence on those groups; (3) establishing the predisposing or precipitating situations or events leading to crashes; (4) defining factors that impede or facilitate implementation of traffic-safety programs; (5) determining the feasibility of implementing potential changes in programs or establishing new ones; and (6) identifying critical trends or deficiencies in public knowledge, attitudes, and practices.

Success in achieving this strategic objective will be measured by progress in accomplishing the following outcome objectives:

Impaired Driving

- Verify the relationship between blood alcohol concentration (BAC) and crash risk for low BACs.
- Establish the degree of public support for different types and levels of legislative and enforcement efforts to reduce alcohol-impaired driving.
- Further define the degree to which drugs other than alcohol contribute to traffic crashes.
- Acquire more detailed information regarding the driver characteristics and situations that lead to drinking and driving.
- Monitor levels of public disapproval of drinking and driving and their acceptance of legislation, enforcement, sanctioning, and other actions to prevent drinking and driving.

Occupant Protection

- Identify factors that impede communities from adopting highly visible traffic law enforcement efforts (e.g., Selective Traffic Enforcement Programs) to increase the use of safety belts.
- Determine the potential impact of incentive and reward programs for different target audiences (e.g., belt users, police groups or community groups) for increasing belt use.
- Monitor public knowledge, attitudes, and practices regarding the use of safety belts, child safety seats, and air bags, as well as support for stronger laws, enforcement, and sanctions.
- Determine characteristics of safety belt users, part-time users, and non-users, especially among drivers who are most at risk of being involved in a fatal or serious injury crash.
- Acquire information from users of child safety seats regarding the reasons for misuse of safety seats and premature graduation of toddlers from safety seats to vehicle safety belts.

Speeding and Unsafe Driving Actions

- Define the relationships among speed, driver characteristics, roadway conditions, situational factors, and crash rates.
- Identify unsafe behaviors and drivers most likely to be involved in crashes.
- Define ''aggressive'' driving and determine its incidence and relation to crash causation.
- Determine the extent to which drivers who speed are over involved in crashes.
- Determine situations and conditions under which the public and the enforcement community would accept automated enforcement efforts and describe the legislative and administrative actions necessary to implement automated enforcement procedures.

Older Drivers

- Identify factors responsible for increased crash rates (per mile) of older drivers and determine the extent to which these factors account for the higher fatality rates of older drivers.
- Determine the likelihood that older drivers would purchase vehicles that offer vehicle modifications for improved crash protection for older occupants.
- Explore the acceptability of various in-vehicle technologies designed to extend mobility by providing assistance in compensating for disabling conditions.

Pedestrians, Bicyclists, and Motorcyclists

- Develop measures of pedestrian and bicyclist crash exposure and determine trends in exposure.
- Assess the attitudes of pedestrians, cyclists, and drivers toward each other; their awareness of high crash-risk situations and ways to avoid them; their knowledge or the laws, signals, and signage; and their walking, riding, and driving experiences.
- Identify and assess materials and procedures for increasing conspicuity of pedestrians and cyclists.
- Review federal, state, and local ordinances pertaining to the interactions of drivers, pedestrians, and bicyclists; examine the practices of these road users that lead to crashes; and assess the need for model legislation and traffic enforcement efforts.
- Monitor helmet usage rates in states with laws, including age specific laws, and those without laws.
- Analyze motorcycle crash data to classify crash types.

Novice Driver Education

- Determine the consequences, including costs and hardships, on novice drivers and their families of requiring a two-staged driver education as part of a graduated licensing system.
- Determine the impact of various options for paying for driver education and licensing, including the option of requiring license applicants to pay some or all of the cost.
- Identify and assess alternative systems for implementing two-staged driver education and determine the costs and benefits of each alternative.
- Determine the extent to which novice drivers over the age of 25 would benefit from graduated licensing and determine any special training needs they present.
- Examine and determine the appropriate role of the Federal government in developing a model driver education program for use by others in training novice drivers.
- Obtain input from partners regarding the education of novice drivers to develop consensus regarding the basic training content required for novice drivers.

Emergency Medical Services (EMS)

- Determine the factors contributing to higher mortality rates for persons who die in motor vehicle crashes in rural areas.
- Identify the barriers to collection of reliable and relevant data in the current EMS data collection system, and identify the barriers to linking EMS data with other databases.
- Examine the potential for and public acceptability of using EMS personnel as injury-prevention trainers or spokespersons at the community level.
- Examine the potential consequences of increased enrollment in managed-care health plans, and their requirements (e.g., for approvals prior to the delivery of services) on the provision of emergency medical services to the public.
- Develop a well defined, long term research plan for EMS, based on participation of relevant partners.

Safe Communities

- Determine the feasibility and utility of including rehabilitation records on drug- or alcohol-impaired drivers in linkages with other Safe Communities data.

Technology Applications

- Conduct an inventory of existing and planned Intelligent Transportation System (ITS) products, determine which products have potential for traffic-safety applications, assess the degree to which candidate products would require modification, and describe the adaptations necessary.
- Identify relevant factors that affect costs of production, deployment, operations, training, and maintenance of various technological safety applications; determine how best to foster the integration of technologies and the sharing of common hardware or systems.
- Identify institutional partners and barriers to full acceptance and implementation of traffic safety-related technologies; define the nature and extent of public concerns and resistance to using technology to improve traffic safety; and identify effective strategies for allaying public fears and for gaining support for technological solutions to traffic-safety problems.

Strategic Objective: Countermeasure Development

Develop and test methods to intervene with problem individuals or to aid those in a position to modify problem situations. These efforts may address individuals or situations needing attention either directly, through information and education, or indirectly, through legislation, enforcement, and adjudication.

The outcome objectives listed under each program area specify one or more critical products that are needed to address an

identified safety problem. These products involve activities (e.g., research, development, and testing) that result in materials or procedures to accomplish one or more of the following: assessment, education, information, motivation, training, and instruction. In addition, some outcome objectives produce materials documenting strategies, technology applications, and model programs or legislation.

Success in achieving this strategic objective will be measured by progress in accomplishing the following outcome objectives:

Impaired Driving

- Develop and test better methods for detecting impaired drivers on the roadways.
- Develop and test improvements to enforcement procedures that make alcohol impaired driving arrests less cumbersome and that improve the efficiency of conducting sobriety checkpoints.
- Develop and test countermeasures for reducing the recidivism of repeat DWI offenders and those who drive with a suspended license.
- Validate a problem-driver screening instrument for use in field sobriety testing situations.
- Develop model specifications for alcohol test devices.
- Develop and test procedures to detect problem drinkers at their first alcohol-related offense.
- Develop and test countermeasures for various target groups (e.g., youthful drinkers, servers, companions, police officers, etc.), based on more detailed information regarding the interaction of driver characteristics and the situations that lead to drinking and driving.
- Develop and test strategies to counter decreasing interest and support among legislators, police, and other public officials for efforts to reduce alcohol-impaired driving.
- Develop and test methods for extending the effectiveness of ignition interlocks for convicted DWI offenders beyond the period during which such devices are installed on the offenders vehicle.

Occupant Protection

- Develop and test materials and procedures specifically designed for part-time users to increase their perceptions of risk in those situations in which they currently do not buckle up.
- Develop and test improved methods for disseminating the results of occupant-protection research to program developers to ensure effective targeting and up-to-date materials.
- Develop and test more effective materials for convincing police officials and lawmakers that good laws and well-publicized enforcement have great potential to increase safety belt and child seat usage and thus to prevent deaths and injuries.
- Develop and test various technological approaches to increase belt use.

Speeding and Unsafe Driving Actions

- Develop and test materials and procedures to reduce the tendency (or ability) of drivers to endanger themselves and others by driving aggressively.
- Develop and test materials and procedures to increase the acceptance of automated law enforcement by the public and the law enforcement community.
- Develop and test materials to educate drivers and the general public about the impact of speed on crashes and resulting deaths and injuries.

Older Drivers

- Develop and test guidelines and procedures for training driver licensing personnel how to evaluate the safe driving abilities of older persons applying for licensing or license renewal.
- Develop and test guidelines and procedures for assisting older drivers to make a smooth transition from driving to other ways to meet their transportation needs.
- Develop and test guidelines for medical personnel and social service personnel to help older drivers regulate their driving.
- Establish the potential for licensing personnel to judge older drivers' ability to drive, based on an assessment of their skills, capabilities and training needs.
- Identify and evaluate alternative federal, state, and local roles and actions to assist older drivers in meeting both safety and mobility needs; assess the costs and benefits of these alternatives.

Pedestrians, Bicyclists, and Motorcyclists

- Develop and test procedures for reducing the occurrence of pedestrian crashes among major identified target groups (e.g., young children, alcohol-impaired adults, elderly) in large cities.
- Field test software that permits communities to identify the extent of their pedestrian and bicyclist crash problems and suggests appropriate countermeasures to address them.
- Develop and test materials and procedures to educate drivers and the general public about the seriousness of the pedestrian and bicyclist crash problem and how they can prevent becoming involved in such crashes.
- Develop refined countermeasures for reducing the ocurrences of crashes involving bicyclists.
- Develop and test elementary school curriculum materials that provide information and resources to improve pedestrian and bicyclist safety for school-aged children.
- Develop and test countermeasures for reducing the incidence of operating a motorcycle while impaired by alcohol or other drugs.

Novice Driver Education

- Develop and test materials and procedures to increase the involvement of parents and other adults in the process of providing effective and safe driving practice for novice drivers.

Emergency Medical Services

- Develop and test materials and procedures for training rural EMS personnel in providing appropriate care and clinical interventions to victims of motor vehicle crashes.
- Develop and test countermeasures to prevent mortality in rural motor-vehicle crashes.

Technology Applications

- Develop and test strategies to incorporate emerging technologies in behavioral aspects of traffic safety.
- Develop and test strategies for allaying public and institutional fears of technological solutions to traffic-safety problems and for gaining support for prudent applications of technology.

Strategic Objective: Program Evaluation

Ensure that programs implemented by states and communities to combat traffic safety problems are effective in achieving their intended purpose. Evaluation may address program implementation procedures, outcomes, or both.

The outcome objectives listed under each program area focus on determining the effectiveness of a program in terms of specified dependent variables. Some are designed to identify the operational characteristics of effective programs. Final reports on completed evaluations provide information to aid the expansion of effective countermeasure programs by states and communities and other organizational entities. They also help to establish useful boundaries for adaptations of programs to local needs.

Success in achieving this strategic objective will be measured by progress in accomplishing the following outcome objectives:

Impaired Driving

- Evaluate the effectiveness of the Section 410 Alcohol Incentive Grant Program in reducing alcohol-related fatalities in the states.
- Evaluate the effectiveness of programs with major potential to reduce alcohol impaired driving, such as frequent and widespread sobriety checkpoints, administrative and judicial license and vehicle sanctions (including ignition interlocks), zero BAC tolerance laws for youth, and .08 BAC laws for adult drivers.
- Evaluate the effectiveness of various alternative transportation programs in reducing the incidence of impaired driving.

Occupant Protection

- Evaluate the effectiveness of state legislative changes that provide for standard (primary) enforcement of safety belt usage laws, penalty points for violators, or higher fines.
- Evaluate the effectiveness of materials, incentive programs, and strategies on increasing safety-belt usage of part-time users.
- Evaluate the effectiveness of the President's Initiative to Increase Safety Belt Usage.

Speeding and Unsafe Driving Actions

- Evaluate the effectiveness of automated enforcement programs such as photo radar for speeding and red-light running.
- Evaluate the effectiveness of enforcement (and other) programs that target situations where speeding is most likely to lead to crash involvement.

Older Drivers

- Evaluate model driver licensing programs that restrict or deny licensing for

those older drivers who do not appropriately restrict their driving.

• Evaluate model medical and social-service programs that are designed to help older people make appropriate decisions about driving and maintaining their mobility.

Pedestrians, Bicyclists, and Motorcyclists

• Evaluate the effectiveness of NHTSA-developed school-bus safety training program that has been adopted and distributed by the National Safety Council.

• Evaluate the effectiveness of a comprehensive pedestrian countermeasures program, adapted for use in large urban settings.

• Determine the costs of motorcycle helmet law repeal, relative to changes in injuries, fatalities and medical care expenditures.

• Evaluate the effectiveness of programs designed to reduce the incidence of impaired motorcycle operation.

Novice Driver Education

• Evaluate the effectiveness of a two-stage driver education relative to citations and crashes, controlling for the influence of graduated licensing on these outcomes.

Emergency Medical Services (EMS)

• Evaluate locally implemented procedures to reduce rural preventable mortality.

• Using outcome measures determined by current research, evaluate the effectiveness of EMS pre-hospital interventions on health outcomes.

• Determine the efficacy of training methods, retention periods, and the need to provide training in new clinical practices for EMS personnel.

Safe Communities

• Determine the characteristics of Safe Communities that are thriving and those that have faltered, where they are similar, and where they are different.

• Study Safe Communities programs to determine the processes involved in establishing strong coalitions among partners, and the mechanisms that enable, facilitate, and strengthen the formation of such inter-organizational ties.

• Determine how each partner organization's objectives contribute toward the perpetuation of the Safe Communities coalition, how organizations' objectives interact, and what steps are necessary to counter the forces that contribute to a program's demise; identify the short- and long-term successes of the Safe Communities program for each of the constituent groups in the coalition.

Technology Applications

• Evaluate the effectiveness of various technologies to detect drivers with suspended licenses.

• Evaluate the effectiveness of various technologies that may help increase safety-belt usage.

• Evaluate the effectiveness of various technologies with potential for reducing unsafe driving acts.

Appendix B—Program Area Summaries

Following are summaries of each program area, including a description of the program area, past and current research in the area, and some of the highest priority issues needing attention. Comments are invited on strategic issues, objectives, or outcomes, as well as on any other aspect of these summaries.

Impaired Driving

Background

In 1996, alcohol was involved in approximately 17,000 traffic fatalities, and over 1,000,000 injuries. Arrests for Driving Under the Influence (DUI) or Driving While Impaired (DWI) have reached a plateau at about 1.4 million arrests annually, after reaching a high of 1.8 million in the late 1980s. Substantial progress has been made in reducing alcohol related crashes over the past decade. From 1986 to 1996, alcohol related fatalities fell from about 52 percent to 41 percent of total traffic fatalities. The actual number of alcohol-related fatalities dropped from 24,000 to 17,000 over that period. Countermeasures found to contribute to these reductions include legislation increasing the drinking age and decreasing legal blood alcohol concentration (BAC) limits, highly visible enforcement, and swift and certain license sanctions. Increased awareness of the drinking and driving problem and its gradual social unacceptability have also helped reduce the problem.

Driving while impaired by drugs other than alcohol may also constitute a significant highway safety problem, although it appears to be much smaller than the alcohol-related problem. One of the most representative studies in this area, a study of 2,000 fatally injured drivers in 1990, showed that 18 percent involved other drugs, either alone or in combination with alcohol.

What We Have Learned

Research has shown that driving performance can be impaired at low alcohol levels and that the risk of crashing increases significantly after just one or two drinks. It has also been shown that many drugs other than alcohol can also impair driving. Marijuana poses significant potential for driving related problems.

Two high risk drinking and driving target groups have been identified: young drivers and repeat offenders. Drivers between 15 and 24 years of age comprise less than 14 percent of the population but they are involved in 27 percent of alcohol-related fatalities. Repeat offenders account for about a third of all drivers arrested for DWI. Safe-ride and designated driver programs provide alternatives to drinking and driving, but they are not widely used. Some studies have shown that they can be used inappropriately.

Research has shown that highly visible law enforcement efforts, such as sobriety checkpoints, can have a general deterrent effect on drinking and driving. Jail time for DWI has been shown to have limited effectiveness, usually reducing drinking and driving only during the time the violator spends in jail. Research on both electronic monitoring and intensive-supervision probation has demonstrated reduced DWI recidivism among program participants. Countermeasure research also led to the development of validated DWI detection cues and a standardized field sobriety test (SFST) for use in determining whether drivers are above .10 percent BAC. These tools have contributed significantly to DWI enforcement.

ORTR/RED evaluations have documented the effectiveness of various legislative actions such as: Minimum Drinking Age 21 laws, Zero Tolerance laws for youth, .08 BAC laws for adults, and Administrative License Revocation. In addition, Oregon and Washington enacted laws allowing police to seize the registration of motorists driving on a suspended licenses and to affix an identifying (''zebra'') tag over the vehicle sticker. The law was shown to be effective in Oregon but not in Washington.

Current Research and Evaluation

Currently ORTR/RED is analyzing results of a survey of close relatives of alcohol-related fatal crash victims to refine target group descriptions. Projects are underway to examine how alcohol affects the driving behavior of various age, gender, and drinker-type groups, and to re-examine the relative crash risk among drivers at various levels of alcohol concentration. Additionally, ORTR/RED administers a biennial national survey to track the nature and severity of alcohol-related issues.

Other research efforts include: development of new enforcement and adjudication programs to deter alcohol impaired driving; examination of new technologies for identifying driving-while-suspended (DWS) offenders and improving DWI enforcement; assessment of enforcement system loopholes; examination of DWI detection cues and the SFST at lower BACs; and development of improved techniques for conducting sobriety checkpoints.

Evaluation efforts focus on vehicle-impoundment, -immobilization, and -forfeiture laws for repeat DWI and DWS offenders and other key legislative changes in various states, such as lowering the BAC limit to .08 for adults.

Current drug-focused research includes a survey to determine the nature and severity of the effects of drugs on driving, a study examining drug involvement in serious non-fatal crashes; and an on-the-road study of the combined effects of alcohol and marijuana.

Strategic Issues for Research on Impaired Driving

• The relationship between blood alcohol concentration (BAC) and crash risk was established nearly 40 years ago. More sophisticated research design and alcohol measurement procedures are available today. In addition, the trend toward lower BAC limits necessitates refined data on the relationship of BAC and crash risk at these lower levels.

• Persistent drinking drivers are often not identified until after they have been involved in multiple crashes. Intervention programs would be more effective in reducing crash involvement if these drinkers could be identified at their first alcohol-related offense.

• More than 30 states have enacted laws permitting the use of ignition-interlock devices for drivers convicted on DWI offenses. Research suggests that offenders

who have interlocks installed recidivate less often than those who do not, but the effects do not appear to continue after the devices have been removed. For this approach to be more widely implemented, judges need a better measure of its effectiveness and information about how to make the effects more durable.

• Many legislators are reluctant to pass stronger laws, and police are often reluctant to enforce strong laws. Clear and strong evidence of the types and levels of interventions that the public is willing to support, would aid legislative and enforcement efforts.

• Identification of population subgroups that are over-involved in impaired driving helps to make countermeasures more efficient, when deployed. However, developing countermeasures tailored for specific target populations requires detailed information about the groups and the interaction of driver characteristics and the situations that lead to drinking and driving. The availability of such information would help determine the nature of effective countermeasures and procedures for various groups including drinkers, servers, companions, legislators, police officers, and judges.

• Communities typically demand evidence that countermeasure programs are effective and can be implemented with available resources before they will adopt them. Current candidates for evaluation include highly visible roadside sobriety checkpoints, administrative and judicial license and vehicle sanctions, zero BAC tolerance laws for youth, and .08 BAC laws for adult drivers.

• Over the past 20 years, volumes of laws have been enacted, arrests of alcohol-impaired drivers have increased in numbers, sanctions have been imposed with greater consistency, and the public norm has been increasingly one of non-acceptance of driving while impaired by alcohol. However, the current level of public support may not be adequate for implementation of new and potentially more effective countermeasures. In addition, support for intensified efforts to reduce alcohol-impaired driving may be lower among legislators and other public officials. The pressures of crime prevention have eroded support for traffic enforcement, and there are indications that, after nearly 20 years of focus, many legislators and police officials are ''burned out.''

• Different studies have produced widely varying estimates of the degree to which drugs other than alcohol contribute to traffic crashes and fatalities. Studies of traffic-law offenders and those non-fatally injured in crashes have generally produced higher estimates than have studies of fatally injured crash victims. More accurate and timely data would be helpful in making decisions about resource allocations in this area.

Occupant Protection

Background

The installation of safety belts has been required on passenger cars since the 1960s. Despite reasonably widespread educational efforts, however, the use of these safety devices remained quite low (i.e., less than 15 percent) until 1984, when states began to pass laws requiring vehicle occupants to use safety belts. Following the passage of such laws, most states experienced dramatic increases in safety belt use (e.g., 20–40 percentage points). Belt use is now mandated in 49 states and the District of Columbia, but only 13 states and the District of Columbia allow police to stop a vehicle solely on the basis of observing a safety belt violation (i.e., standard enforcement). Most states require that another law violation must first be observed (i.e., secondary enforcement) before safety belt law violators can be stopped and issued a citation. Under these conditions, national safety belt use has reached a plateau of about 68 percent. President Clinton has established a Presidential Initiative to Increase Safety Belt Usage, setting a goal of 90 percent belt use by the year 2005.

The need to use child safety seats appears to be more widely accepted than the need to use safety belts. The first law requiring children to be in safety seats was passed in 1978 in Tennessee. By 1985, all 50 states and the District of Columbia had passed child passenger laws. Statewide reported usage rates currently range between 60 and 90 percent, depending on the age of the child. Most safety seats, however, are used improperly to some degree or another. Much remains to be done to determine the consequences of the various kinds of misuse and to develop programs to decrease such misuse. Investigations of air bags causing injuries and fatalities to young children and adults of short stature has reemphasized the need to get young children into safety seats, to get parents to install child seats in the back seat, and to put all children under 12 in the back seat.

What We Have Learned

Belt use remains low among various groups, such as young males and rural road users, and the overall rate of increase in belt use is flattening out. Much non-use of safety belts can be attributed to part-time belt users: people who use belts only on some trips or only on certain portions of trips. The main reasons part-time belt users offer for non-use are that, in their view, some trips entail an extremely low crash risk and some, usually because of relatively low speeds, entail a very low risk of serious injury. An estimated 5–10 percent of the population totally resists using safety belts under any condition. They often claim that safety belts are too uncomfortable, possibly dangerous, and that they don't like being told what to do.

Standard (primary) enforcement can have a major impact on belt use. Belt use increases of about 15 percentage points have been observed in states following a switch from a secondary enforcement law to a standard enforcement law. It also appears possible, however, to realize substantial gains in states with secondary enforcement laws. Michigan, Pennsylvania, and Washington, for example, are secondary law states and each reports safety belt use rates greater than 70 percent.

Child safety seat use is currently estimated to be 88 percent for infants and 61 percent for toddlers. Use declines sharply with age of child, although it is not clear if children are prematurely moved out of a child seat to make room for a younger sibling, if parents think their children no longer need the protection, or for some other reason. In a recent study, misuse of child safety seats included the following errors (and frequency of observation): no locking clip used on belts with sliding latch plate (72 percent); no chest clip (59 percent); inappropriate use of harness strap use (46 percent) or vehicle safety belt (17 percent); seat placed in wrong direction (10 percent); and inappropriate harness connection (3 percent).

Current Research and Evaluation

Current research in the area of occupant protection is focused on efforts to increase belt use by part-time users, and to gather data on teenagers and other high-risk, low-usage groups to aid in developing programs to increase their belt use. Projects are also underway to develop guidelines for matching safety education strategies to youth characteristics, to develop strategies for encouraging states to upgrade from secondary to standard enforcement of belt use laws, and to increase belt law enforcement levels. Some useful data regarding these matters will come from analyses of findings from the second biennial national survey of occupant protection issues to be completed in 1997.

Strategic Issues for Research on Occupant Protection

• Highly publicized waves of intense belt-law enforcement (Selective Traffic Enforcement Programs or STEPs) have been successful in raising belt use levels but several factors appear to impede communities from effectively adopting these procedures. Minimum enforcement levels, characteristics of public information messages, need for police training, and use of overtime or regular time are among issues needing further attention.

• Incentive programs have not been seriously investigated since before occupant protection laws became commonplace. While these programs historically provided rewards for belt use, they could be applied to intermediary groups to reward efforts to get others to buckle up. The potential of incentives in conjunction with sanctions appears to be significant but not well documented.

• Most observed non-use of safety belts is due to part-time users who have judged their driving situation to have a low risk of resulting in a crash, an injury or a citation for non-use of a safety belt. Getting part-time users to buckle up will require an increase in their perception of risk in the situations they now believe to be low risk. However, beliefs concerning risk of injury appear to be highly resistant to change.

• There are several ongoing efforts to monitor changes in safety belt use (e.g., state surveys, NHTSA's National Occupant Protection Use Survey [NOPUS], and the Fatality Analysis Reporting System [FARS]) and changes in public knowledge, attitudes, and opinions (e.g., biennial National Occupant Protection Survey). These efforts will be useful in evaluating the President's Initiative to Increase Safety Belt Usage and the Air Bag Safety Campaign.

• Knowledge of the characteristics of safety belt users, part-time users, and non-users is modest. Youth have very low usage

rates, as do impaired drivers and violators of other laws. Usage is lower in rural areas (other than interstate highways) and among drivers of pickup trucks, sport-utility vehicles, and full-sized vans. Public education programs require more detailed knowledge to direct appropriate messages to specific groups using the most efficient communications medium.

• Correcting misuse of safety seats, including premature graduation from safety seats to safety belts, requires a different approach than does promoting safety seat use among non-users. Accordingly, child safety seat programs require more knowledge of the characteristics of users, part-time users, and non-users of safety seats and their respective motivations for use, misuse, or non-use.

• Results of current research tend not to diffuse into new occupant protection programs quickly or completely. Consequently, programs do not target materials to appropriate groups and messages may be ineffective for groups that are targeted.

• In spite of the interest in and support for stronger actions to increase safety belt and child seat usage expressed in most public opinion surveys, the public fails to perceive the risks and costs of not buckling up. State legislators and local police officials fail to be convinced of the potential of safety restraints to prevent death and injury and of the potential for good laws and highly visible enforcement to increase belt usage.

• It has been about 20 years since safety-belt/ignition interlocks were ruled out as a technique for ensuring belt use. Improvements in technology, on-board computers, and wide acceptance of belt-use requirements provide a new environment in which to reexamine technological approaches to increasing belt use levels. ''Smart'' belt-use reminders and interlocks with other automobile features are now possible, but have not been tested with drivers.

Speeding and Unsafe Driving Actions

Background

Research has indicated that most crashes are attributable to human performance (e.g., following too closely, inattention, speeding, ''aggressive'' driving). However, progress in developing countermeasures to reduce the incidence of unsafe driving behaviors has been limited. Two reasons for this limited progress are the difficulty of measuring the incidence of unsafe driving acts (UDAs), and a poor understanding of the circumstances under which various UDAs are most likely to lead to crashes.

One of the most frequently cited UDAs involves speeding. This specific behavior and its effect on crash frequency remains highly controversial. Speeding can be defined in at least two ways: (1) exceeding the posted speed limit; and (2) driving too fast for conditions. Speed affects both crash worthiness and crash avoidance. It is clear that speeding increases the severity of crashes, since the energy released in a crash increases by the square of vehicle velocity. It has also been demonstrated that increasing speed reduces a driver's ability to steer safely around curves or objects in the roadway, extends the distance necessary to stop a vehicle, and thus increases the distance a vehicle travels while the driver reacts to a dangerous situation. According to police crash reports, approximately one third of all fatal crashes involve speeding as a primary cause. While this kind of information may provide a rough estimate of the incidence of speeding in fatal crashes, it does not provide sufficient insight into the causal relationship between travel speed and crash involvement. All things considered, we still have inadequate information relating to the extent to which speed contributes to crash causation and the conditions under which speeding most often results in a crash.

There are a variety of other UDAs that have a high likelihood of causing crashes. They include: running red lights and stop signs, following too closely, passing improperly, weaving through traffic, etc. Recently, the term ''aggressive driving'' has been used to refer to a number of unsafe driving actions that are accompanied by an apparent aggression exhibited by one driver toward another.

What We Have Learned

Crash study work has shown unequivocally that most crashes are attributable to human performance problems including improper lookout, speeding, inattention, improper evasive actions, and distractions. In terms of speed, we know that slower speeds are accompanied by fewer and less severe crashes, but the exact nature of this relationship needs further documentation. We also know that higher levels of speed variance on roadways has been shown to be associated with increased crash risk.

We do know that, among drivers involved in fatal crashes, younger drivers of either sex are more likely to have been speeding than older drivers. Males, at any age, are more likely than females to have been speeding. There also appears to be a strong positive correlation between speed and alcohol involvement in fatal crashes. Drivers at high BACs are more likely to have been speeding than those at lower BACs. With regard to roadway type, 43 percent of crashes reported to have involved speeding occur on non-interstate roads with a speed limit of 55 mph. Forty-five percent occur on roads with speed limits of 50 mph and below. Only 12 percent of fatalities involving speeding occur on interstate highways.

Research suggests that the perceived probability of getting caught is more important than perceived severity of fine in controlling speeding behavior. As in other areas of traffic law enforcement, it appears that enforcement of speed limits must be accompanied by publicity if general deterrence of speeding is to occur. The importance of perceived risk of getting caught, along with decreased resources for traffic law enforcement, have led some officials to view the use of automated speed enforcement as a desirable alternative. Currently, however, public support for automated speed enforcement appears to be limited.

Current Research and Evaluation

The agency is currently conducting three separate research projects dealing with speeding and unsafe driving: (1) A survey of public attitudes and behaviors toward speeding and other unsafe driving actions; (2) a crash investigation study to examine the role of unsafe actions in crashes; and (3) a review and analysis of existing data to suggest guidelines for setting speed limits. The survey of public attitudes regarding speeding and other UDAs will assess views toward enforcement, motivations for speeding, anticipated consequences, and the acceptability of various measures to reduce unsafe driving behaviors. The crash investigation effort involves a clinical case study approach in which a sample of crashes will be reconstructed with a focus on identifying the specific behaviors that lead to the crash. The objective of the speed limits study is to develop data-based guidelines for setting speed limits. This study is co-sponsored by NHTSA, the Federal Highway Administration and the Centers for Disease Control, and is being performed by the Transportation Research Board.

One problem that current studies do not address is the absence of research that estimates the level of crash risk associated with speed levels, under differing traffic and environmental conditions. To address this issue, an epidemiological study is being developed in which the travel speeds of crash-involved vehicles will be compared with travel speeds of matched non-crash involved vehicles. An additional study is being initiated in October of 1997 to test the feasibility of equipping a fleet of vehicles with speed and position recorders to determine the crash-involvement rates of drivers with differing speeding habits.

Strategic Issues for Research on Speeding and Unsafe Driving Actions

• The nature of the relationships among speed, driver characteristics, roadway conditions, situational factors, and crash rates is currently unknown. Without such knowledge, speed limits are set using somewhat arbitrary standards, and are often viewed negatively by the driving public. In order to develop effective countermeasures, the complex relationship between speed and crashes must be much better understood and documented.

• After the relationship between speed and crashes is more clearly defined, drivers and members of the general public need to be made aware of the conditions under which speed leads to crashes.

• When large numbers of drivers ignore posted speed limits, it is difficult to identify drivers who are most likely to be involved in crashes. Appropriate target-group identifiers might be more related to overall driving habits than to events identified in single episodes. Searching for characteristics of at-risk drivers will require in-depth studies of driver behavior.

• ''Aggressive driving'' implies a social-interactive component to the commission of unsafe driving actions. However, there is no common definition of aggressive driving. Without a definition, it is difficult to determine the incidence of such a phenomenon and how it is related to crash causation.

• Automated enforcement of speed and other UDAs are not widely accepted by law

enforcement agencies or the general public. Acceptance may be facilitated by implementation and evaluation of such technology where compliance with speed limits is critical or where offenses are least tolerable to the public (e.g., red-light running or speeding near schools or hospitals).

Older Drivers

Background

NHTSA first developed a plan to address the combined safety and mobility needs of older drivers in 1988. This plan was developed in response to the Transportation Research Board's publication, Transportation in an Aging Society. The plan was last revised in 1993, at the request of Congress. People over 70 currently comprise 9 percent of the population and 13 percent of fatalities. Although older drivers are highly over-represented in crashes per miles traveled, they are only slightly over-represented in fatal crashes per licensed driver. However, demographic trends project that the proportion of older drivers on the road will increase from the current 9 percent to over 14 percent within the next 25 years. Primarily because of increased frailty, the ratio of fatalities to injuries for drivers over age 80 is 4 to 6 times that of crash-involved drivers between 20 and 60. Thus, as the numbers of older drivers on the road increase, it is inevitable that more will be killed in crashes, unless special efforts are made to improve their safety.

What We Have Learned

The majority of older drivers do *not* constitute a major safety problem. Research has indicated that most older drivers adjust their driving practices to compensate for declining capabilities. They reduce or stop driving after dark or in bad weather and avoid rush hours, high speed roads and unfamiliar routes. Men appear to be somewhat more reluctant than women to stop driving and consequently are at a higher risk of crashing than women of comparable age. Conditions such as memory loss, glaucoma, and antidepressant use appear to be related to increased crash risk.

Some older persons are not aware of their changing conditions; most notably, those with cognitive disorders, such as Alzheimer's disease, and certain visual problems. These drivers may not self regulate and, as a result, pose an increased risk of crash involvement. Such individuals may require outside intervention to remove them from traffic. Unfortunately, research suggests that most family members, social service agencies, and health care professionals are either not sufficiently aware or choose not to provide assistance in making driving-related decisions to those who need it. For a variety of reasons, many appear hesitant to get involved with this issue.

Those elderly drivers who remain a problem are not easily detected with standard licensing procedures. Further, there is some doubt as to whether most licensing staff have the skills necessary to detect these problem drivers, even with training and state-of-the art testing techniques. Diagnostic tests currently in use have not been shown to be effective in identifying those older drivers who are at increased crash risk, but some recently developed tests of ''speed of attention'' and ''visual perception'' may have such potential.

One factor that must be considered with regard to interventions is the fact that elderly people who give up driving often lose mobility. For many, the automobile is their primary mode of transportation and acceptable alternatives are simply not available. Decreased mobility is frequently followed by decreased quality of life as elderly people are cut off from the social events, family visits, medical attention, and opportunities for worship that are critical in maintaining their sense of well being.

Current Research and Evaluation

Several long-term efforts are now approaching conclusion. These developmental projects include: (1) Procedures to help elderly drivers make better decisions about adapting their driving to accommodate their changing abilities; (2) procedures for family members, friends, social service agencies, physicians, and other health-care providers to recognize when an older person needs to adjust his or her driving to adapt to functional limitations; (3) procedures for driver licensing agencies to restrict or deny licensing for those who do not appropriately restrict their driving; and (4) model programs for medical and social-service agencies to help older people to make appropriate decisions about driving while maintaining their mobility. Current efforts also include a survey to determine societal perceptions and willingness to assist older drivers to better regulate their driving, and a field test of special licensing requirements for older drivers.

Strategic Issues for Research on Older Drivers

- Older drivers have higher fatality rates, per-mile driven, than do average-age drivers. Two factors that contribute to this measure of increased risk include: (1) the fact that elderly drivers travel fewer miles on interstate highways and other major roadways; and (2) the fact that elderly drivers are more fragile than younger drivers. Roadways most often used by elderly drivers, while involving lower speeds, often have more opportunities for vehicle-to-vehicle conflict. Thus, elderly drivers are exposed to more potential crash situations per mile than is the average driver. Because of their fragility, an elderly person involved in a crash is more likely to be seriously injured or killed than is a younger person. Other factors, such as the types of crashes older drivers are involved in, are also likely to be important and the development of effective countermeasures will require a better understanding of these factors.
- Some state licensing officials have suggested establishing a ''graduated'' licensing system for older drivers, whereby driving would be systematically restricted to certain driving situations based on reduced abilities. Such a system would entail some expense and it would depend upon accurate and validated testing procedures that are not yet available. Also, it must be remembered that most older drivers appear to impose restrictions on themselves. Development and evaluation of such a model graduated licensing programs could provide important information with regard to the potential for widespread adoption of such programs.
- There is some disagreement as to whether licensing personnel can accurately assess an older driver's ability to drive. It may be that individuals with more specialized training and experience will be required. Research is needed to determine if licensing personnel are able to take on this role and, if so, what kinds of selection procedures and training will be required.
- It is likely that more older persons will drive longer in the future than they do now, further increasing their exposure to crashes, injuries, and fatalities. While NHTSA's responsibilities for increasing safety are clearly defined, its role in extending mobility is not. Additional information (e.g., determining the extent to which loss of driving contributes to risk of death or injury as a pedestrian) is needed to clarify the level of effort the agency should place on developing programs to foster safe mobility for older people by helping them continue to drive or by helping them make the transition to other modes of transportation.
- One of the most significant reasons for elderly drivers' over-involvement in fatal crashes is the inability of their bodies to absorb crash forces. What would be a survivable crash for a younger person is often a fatal crash for an older person. Current occupant-protection standards do not specifically address the frailty of older occupants. More information is needed to establish the feasibility of improving the protection of older people when they are in a crash.
- Some of the causes of older-driver crashes could conceivably be corrected using new vehicle technology. Although adaptive devices have a long history of permitting people to overcome various handicaps, older persons are among the last to adapt to new technology. Additional research in this area could provide useful information regarding the acceptability of technology-based innovations designed to help older, functionally less able people continue to drive.

Pedestrians, Bicyclists, and Motorcyclists

Background

Over the past 25 years, NHTSA has made substantial progress in improving the safety of pedestrians and bicyclists, particularly in understanding factors leading to pedestrian and bicyclist crashes. Pedestrian crashes involving young people aged 5–12 have declined by about 25 percent since this training and public education work began. However, pedestrian crashes involving young people remains a severe problem with about 30,000 such crashes occurring annually. Older persons also pose a significant over involvement in pedestrian crashes. While they constitute only 13 percent of the total population, they are involved in about 23 percent of pedestrian crash fatalities.

Another significant component of the pedestrian crash problem involves alcohol. Research has shown that about half of all fatal adult pedestrian crashes involve either an intoxicated pedestrian (31 percent of cases), or an intoxicated driver (14 percent of

cases). Finally, the pedestrian crash problem is especially severe in several large urban areas where nearly half of all those killed in motor vehicle crashes are pedestrians.

While the pedestrian (and bicyclist) crash problems remain serious, the public's attention is not as strongly focused on these issues as it is on other areas, such as impaired driving, aggressive driving, etc. In addition, shifts in traffic safety priorities in the early 1980s resulted in a reduced emphasis of pedestrian and bicyclist issues. In spite of these obstacles, a number of prototype public information and education products have been developed, tested and found to be effective.

What We Have Learned

Crash investigation studies have shown that most crashes involving pedestrians or bicyclists and motor vehicles can be categorized into a few major types based on a combination of behavioral errors and environmental conditions. Research has shown that training and public education programs focused on these main crash types can reduce the incidence of young pedestrian crashes (age 5–12) by as much as 25 percent. Past research indicates that there is more than a 500 percent increase in crash risk for pedestrians at BACs of .15 percent or above. Other studies have determined that Native Americans, male Hispanics, and African-Americans over the age of 25 are over-represented in alcohol-related pedestrian crashes. Alcohol is also a major factor in both bicyclist and motorcyclist crashes, with 25 and 30 percent of such fatalities, respectively, involving BACs over .10 percent.

In 1996, 2160 motorcyclists were killed and an additional 56,000 were injured in traffic crashes. Since 1986 the fatality rate per hundred million vehicle miles traveled decreased dramatically: from 48.6 in 1986 to 22.7 in 1995. Per vehicle mile traveled in 1995, motorcyclists were about 16 times as likely as passenger car occupants to die in a motor vehicle crash and about 4 times as likely to be injured. In 1996, there were 1,048 two-vehicle crashes involving a motorcycle and another vehicle. In 35% of these crashes the other vehicle was turning left while the motorcycle was going straight, passing or overtaking the vehicle. Crash statistics show that helmets are about 29 percent effective in preventing crash fatalities and 67 percent effective in preventing serious injury. Also, we know that states which have enacted mandatory helmet laws for all riders experience almost 100 percent helmet use; however, in states without such laws, helmet use ranges from 34 percent to 50 percent. Motorcycle operators involved in fatal crashes in 1996 had higher intoxication rates than any other type of motor-vehicle driver. In 1996, 31 percent of all fatally injured motorcycle operators were intoxicated and another 11.5 percent had positive BACs between .01–.09. As one way of countering this problem, NHTSA research developed a set of DWI motorcyclist cues (e.g., drifting during turn or curve, trouble with dismount, weaving) that have been found to be predictive of impaired motorcyclist operation. Information about these cues have been widely distributed to police agencies throughout the country.

Current Research and Evaluation

Current research is focused on development and testing countermeasures to reduce pedestrian crashes involving children, alcohol-impaired adults, and elderly persons; investigating the effect of vehicle speed on pedestrian crashes; and developing a catalogue of available measures to reduce bicyclist crashes. Periodic surveys are also being conducted to determine the nature and extent of the public's view of the pedestrian and bicyclist crash problem. In the motorcycle area, efforts are being focused on evaluating the impact of repealing motorcycle helmet laws in various states, on the effectiveness of various means for increasing the visibility of motorcyclists; and on developing and evaluating effective training and licensing programs for novice motorcyclists.

Strategic Issues for Research on Pedestrians, Bicyclists, and Motorcyclists

- Over the past 10 years, fatal crashes have declined substantially for both pedestrians and bicyclists. In order to determine the causes for this decline, we must find a way to measure the magnitude and trends in the exposure of pedestrians and bicyclists to crash situations.
- Most pedestrian crashes occur in urban settings. In some cities, half or more of those killed in motor-vehicle related crashes are pedestrians. Thus, to be effective, existing countermeasures must be adapted to meet the unique demands of the large-city environment. Although existing countermeasures have been tested individually, they have not been tested in combination, in a big-city environment.
- Nearly all of NHTSA's research on pedestrian and cyclist crashes with motor vehicles has emphasized the role of the pedestrian or the bicyclist, rather than the driver of the car or truck. In order to develop more effective comprehensive programs for pedestrians and cyclists, more information is needed regarding driver awareness of these road users and of how they interact.
- In many cities, especially in the eastern portion of the United States, drivers do not yield to pedestrians, as required by law. Past research has found that drivers making a right-turn-on-red maneuver often do not fully stop their vehicles nor adequately search for pedestrians. An assessment of driver compliance with existing laws and ordinances is necessary before a review of current laws governing pedestrians, bicyclists, and drivers can determine whether existing laws should be modified or new model legislation should be drafted.
- NHTSA has developed training materials for a number of professional groups to alert them to the safety problems of pedestrians and bicyclists and how to address them. These groups include police, traffic engineers, city planners, and highway safety specialists. Another important group for which materials need to be produced are elementary school teachers.
- The lack of visibility, including nighttime conspicuity, remains a substantial problem contributing to motor vehicle crashes with pedestrians and bicyclists. More information is needed on the requisite materials and devices that should be worn or used by pedestrians and bicyclists in order to make these road users more visible to traffic.
- Research is underway to catalogue current countermeasures available to address bicyclist safety This effort is intended to identify those areas in need of additional development.
- The Federal Highway Administration is developing a prototype software package to permit communities to assess their unique pedestrian and bicyclist safety problems. Before this software can be widely distributed, it must be tested under real-world conditions.
- A joint effort with the Federal Highway Administration resulted in a pedestrian and bicyclist safety training program for traffic safety professionals. Research to improve awareness levels of public and highway safety professionals has evolved into coalition called the ''Partnership for a Walkable America.'' One of the objectives of this group is to stimulate research to help the general public understand the seriousness of the pedestrian and bicyclist crash problems.
- NHTSA recently developed an extensive program to address school-bus safety issues. This program was adopted by the National Safety Council and has been widely distributed. While the program was tested during its development, it has not yet been evaluated as implemented by local communities.
- In nearly every state with a law requiring motorcyclists to wear helmets, there are efforts to repeal that law. Most of the states that repealed their motorcycle helmet laws in the 1970s and 1980s reinstated them a few years later. However, new efforts are currently underway in most states to repeal these laws. State legislatures change with time, and many current lawmakers, who may not be aware of past history and demonstrated effectiveness of these laws, may be convinced to vote for repeal. Supporters of helmet laws need up-to-date factual information about the increased injury severity, increased fatalities, and increased medical costs that inevitably result from rescinding motorcycle helmet laws.
- Many crashes involving motorcyclists result for drivers who ''looked but did not see'' the cyclist. Past efforts at increasing the conspicuity of motorcyclists resulted in the practice of riding with headlights ''on'' at all times, including daylight hours. Research attention must be refocused on developing more effective means for making motorcyclists visible to car and truck drivers and on developing and testing more effective training and licensing programs for novice riders.
- The most recent systematic analysis of motorcycle crashes was done nearly 20 years ago. During this time, motorcycle designs have changed dramatically, favoring sleeker and faster bikes with lower profiles, urban areas have expanded while roadways have deteriorated, and riding practices have adapted to these changes. These events have an unknown effect on motorcycle crashes and, consequently, the program actions needed to counteract them.

Novice Driver Education

Background

NHTSA was substantially involved in novice driver education research from the late 1960s through the early 1980s. However, the agency reduced efforts in this area after a major demonstration program showed no long-term crash or violation reductions resulting from what was then a state-of-the-art novice driver education and training program. In 1994, Congress requested recommendations from NHTSA on ways to improve novice driver education and the agency developed and submitted to Congress a ''Research Agenda For an Improved Novice Driver Education Program.'' This report reviewed the history of driver education (including, but not limited to NHTSA's research and demonstration efforts), suggested reasons why novice driver education may not be as effective as it could be, and suggested that an improved driver education program should be developed as an integral part of a graduated driver licensing system. The report also provided a summary of research, development, and evaluation activities that could be used to restructure and improve the impact of novice driver education. The proposed program would have two-stages of education that would parallel stages of a graduated licensing system. It would include parent participation, and it would incorporate the use of electronic simulation to provide risk-management training.

What We Have Learned

Driving is a complex task that requires many hours of practice to reach proficiency in all situations. Much of the time the driving task is non-demanding in nature and the basics of vehicle control that are learned in a brief training program generally provide the skills necessary to drive safely in non-demanding situations. However these short courses do not provide the adequate training to meet the occasional, but critical, situations where the driving task becomes very demanding. Clearly, advanced risk-management skills cannot be learned in a short time, nor can they be learned before the basics of vehicle handling are mastered. This suggests the need to separate the teaching of the two kinds of skills into two separate learning situations. Since an additional learning requirement would require strong motivation to get novice drivers involved, it is logical to tie this two-stage driver education approach to the attainment of the drivers' license. Graduated licensing programs provide the structure in which two-stage driver education could be most effective.

Current Research and Evaluation

Current research is focused on developing and pilot testing materials for use in a two-staged driver education training program. Materials include curriculum modules covering essential perceptual and cognitive training as well as materials to guide parental involvement in providing appropriate experience and modeling proper driving behaviors. Current research is also examining interactive electronic media for use in learning and practicing advanced, risk-management skills. Evaluations of graduated driver licensing systems are being conducted in Michigan and in North Carolina. Michigan's system includes a two-stage driver education program with parent participation.

Strategic Issues for Research on Novice Driver Education

- In view of the finding that conventional driver education has little impact in terms of reducing novice driver crashes and violations, any new program approach must show that it has the potential to reduce the number, frequency, or severity of crashes of novice drivers. Since research on two-stage driver education could be confounded by the independent effects of graduated licensing, efforts must be made to control for such effects.
- The success of the two-staged driver education program depends in large part on the novice driver obtaining a significant amount of driving experience under low-threat conditions before he or she moves on to the second stage of training. Graduated-licensing systems attempt to use parents (or other significant adults) to provide this initial experience, but it is not known to what extent parents and other adults will actually participate or what kinds of situations will maximize such participation.
- The two-stage driver education program is designed to be an integral part of a graduated driver licensing system. The intent is to use the prospect of full licensure to provide the motivation to novice drivers to fully participation in the program. However, it may be that mandating such training will impose significant hardships on some individuals. The ramifications of requiring the driver education as a part of graduated driver licensing versus providing it as an optional component need to be explored.
- If a more difficult licensing exam is given as an exit (final) exam, most state licensing authorities could not assume the additional costs. Alternative approaches include having states charge applicants for this test or having training facilities provide this testing service for the licensing agency. Additional information about the potential consequences of these alternatives is needed to provide guidance to the states.
- When public school systems discontinue driver education programs, aspiring novice drivers are faced with the requirement of obtaining training though commercial agencies. A two-stage education program would place even more demands on already burdened school systems. Most foreign countries require that novice drivers take formalized training and pay for it themselves. The ramifications of adopting such a system for this country are currently unknown.
- With increased immigration, there is an increase in older novice drivers. While these older drivers do not show the age-related judgement errors associated with young novice drivers, they still have a higher level of crashes than experienced drivers of their own age. Since these drivers are older, often are less fluent in English, and may have learned to drive in another country, the extent to which they would benefit from a graduated driver licensing and education program oriented to younger, English-speaking novice drivers is not clear.
- Additional information is needed regarding the appropriate role for the Federal government to assume in developing and promoting a novice driver education program for use by states and communities.
- Developers of any complex program such as this, must solicit and consider the viewpoints of partners. A variety of mechanisms and approaches (e.g., consensus workshops) exist to meet these needs. More information about the views and preferences of various partners will be necessary to gain agreement on issues such as the basic training content needed for novice drivers and the development of model education and training programs that meet the needs of the various organizations involved.

Emergency Medical Services (EMS)

Background

EMS differs from the other program areas receiving research attention in that it is entirely focused on post-crash rather than pre-crash events. Much of what is known regarding emergency out-of-hospital medical care stems from clinical studies of stabilized patients in treatment settings. This knowledge is not always applicable to the pre-hospital setting, where EMS is provided to injured, medically-unstable patients in the field. Consequently, there are gaps in our knowledge of effective out-of-hospital care. A key impediment to research on EMS is the absence of a well defined, uniform, and complete data system to track performance of EMS systems at local and the national levels. This lack of data makes it difficult to set a strategy for EMS research.

What We Have Learned

EMS research conducted by NHTSA has focused primarily on the high mortality rate found in rural settings. Results from studies in three states indicate that from 12 percent to 29 percent of deaths from highway trauma in rural settings could be prevented by changes in patient care.

Current Research and Evaluation

Current research projects are developing appropriate outcome measures for measuring EMS effectiveness and are evaluating recommendations for reducing preventable deaths in rural traffic crashes. These recommendations resulted from an earlier study of rural preventable mortality.

Strategic Issues for Research on Emergency Medical Services

- Data provide the foundation for all research efforts but there are significant barriers to collecting relevant and accurate EMS data. Either the data do not exist, are not collected in a reliable fashion, or cannot be linked with other data sets to allow tracking of patient outcomes. The integration of information systems is not possible with most of the EMS data that is currently collected.
- The effectiveness of many EMS interventions currently being delivered by pre-hospital personnel is not adequately documented. Virtually no clinical research has been conducted with injured patients in the pre-hospital setting. Such research is

needed to ascertain the effectiveness of current EMS practices on patient outcomes, including reduction in the classic ''6D's'' (i.e., death, disease, disability, discomfort, destitution, and dissatisfaction).

• Retrospective analysis of EMS treatment of crash victims in rural settings revealed that errors or omissions in care were involved in nearly 30 percent of fatalities. Conclusions from these studies suggest a need to improve training in specific clinical interventions by EMS personnel, particularly in rural settings.

• EMS personnel in most states are trained and periodically re-trained using NHTSA's pre-hospital curricula or similar programs. Little is known about retention periods for the material learned, need for skills updating, best methods for training, and related professional development and certification issues. Research into these areas will be needed to make improvements in NHTSA's curriculum.

• There are many reasons to use pre-hospital personnel to teach injury prevention at the community level. Some of the most obvious include: (1) The positive status and acceptance of these providers among the general population; (2) the public's willingness to accept an injury prevention message from pre-hospital providers; (3) availability of EMS providers, when they are not engaged in EMS activity; and (4) the potential cost savings that could result by preventing injuries. However, it is not clear when or where these people are effectively utilized for this purpose. Such knowledge could enhance injury-prevention activities.

• Accessibility and availability of emergency care to all is a basic EMS principle. However, enrollment in managed care plans is growing at phenomenal rates and most plans require additional levels of review before authorization and payment for EMS services is made. These additional requirements may consume precious time in emergency situations that can literally mean the difference between life and death. Research into the effects of these review requirements on EMS outcomes is needed.

• A comprehensive, well defined, national research plan that could be embraced by the many partners in the EMS community is needed. Such a plan would involve researchers and organizations in both the public and private sectors. NHTSA could provide the leadership for the development of such a plan.

Safe Communities

Background

Safe Communities is a program area managed jointly under NHTSA's Associate Administrations for State and Community Services and Traffic Safety Programs. Safe Communities bring together citizens and a wide range of local agencies and businesses, such as law enforcement, hospitals, managed care facilities, emergency medical services, schools, insurance companies, other public and private businesses and local governments. These organizations then appoint members to work on solving local traffic safety (and other injury causing) problems. Program offices within the agency (e.g., State and Community Services and Traffic Safety Programs' Office of Communications and Outreach) provide the day-to-day management of the Safe Communities Program. The Office of Research and Traffic Records, Research and Evaluation Division (ORTR/RED) provides technical expertise on matters relating to evaluation for this key program area.

The Safe Communities program is similar to the Corridor/Community Traffic Safety Programs (C/CTSP). However, the Safe Communities program uses a ''bottom-up, '' data-based approach to identify and address key injury problems. Additionally, this program includes an expanded base of partners than the C/CTSPs. In addition to the traffic law enforcement, highway safety offices, and emergency medical services groups, a Safe Community includes citizens, business, and other health care providers such as hospitals, managed care facilities, and rehabilitation centers. Presently there are over 300 community-based, locally-supported Safe Communities in various stages of development.

Four key components of a Safe Communities program are: (1) Injury data analysis and (where possible) database linkages; (2) expanded partnerships, especially with health care providers and business; (3) citizen involvement and input; and (4) an integrated and comprehensive injury control system.

What We Have Learned

The safe communities program is a new initiative. Evaluation results and lessons learned will be published in forthcoming annual reports on the program.

Current Research and Evaluation

As of September of 1997, NHTSA has selected two communities to serve as model demonstration sites for the Safe Communities program. They are Dallas, Texas and Greenville, North Carolina. ORTR/RED is currently providing technical evaluation expertise to these two model Safe Community sites. It is anticipated that this service will be extended to two additional model sites that are to be selected in the near future.

Strategic Issues for Research on Safe Communities

• Success in disseminating safety programs to new communities depends in large part on having evidence of success. Accordingly, it is desirable to obtain information about which Safe Communities are thriving and which are faltering and what characteristics the stronger programs have in common. Knowledge regarding these factors and any identified deficiencies in weaker programs will permit intelligent revisions in these programs to maximize success.

• Currently, linkages between crash records and rehabilitation records are usually limited to physical therapy, occupational therapy, and recreational therapy. Information on the feasibility including and linking additional information (e.g., information regarding referral to alcohol or drug rehabilitation programs) would be extremely useful to program managers.

• A Safe Community is a coalition of medical, enforcement, educational, business, and civic groups in a community. Such a coalition must include close ties, communication, and cooperation among member groups. Additional research is needed to define the mechanisms that enable, facilitate, and strengthen the formation of such inter-organizational ties. In order to facilitate the perpetuation of Safe Communities, information is needed regarding the objectives of the various members, how they interact, and how to counter the forces that contribute to a program's disintegration.

• Program evaluation provides the evidence that newly developing Safe Communities need to survive. Information on both short-term and long-term successes is needed, along with a better understanding of which outcomes are most important to each of the participating members of a safe community.

Technology Applications

Background

The traffic safety community is anticipating future increases in vehicle travel and risks of crashes, with no such increases in funding for safety programs. Police agencies, under pressure to fight serious crime with reduced budgets, are allocating fewer resources to traffic-law enforcement—even though well-publicized traffic-law enforcement is the proven key to compliance with safety-based laws. With the easiest gains already made, safety experts will now have to address populations and problems that have historically been most difficult to change (e.g., chronic offenders, risk-takers, rural residents).

In order to improve the effectiveness and efficiency of safety and enforcement programs, ORTR/RED plans to extend its exploration of emerging technologies. Since the early 1980s, the agency has evaluated equipment such as alcohol breath-test sensors and laser speed-measuring devices. More recently, evaluations have focused on newer technologies such as ''smart card'' drivers licenses that prevent fraudulent ID, ignition interlock devices, electronic monitoring wristbands (worn by drivers with suspended licenses) to ensure court-imposed driving restrictions, and electronic vehicle and driver identification systems. ORTR/RED is also monitoring technology developments such as portable computers to assist police when entering crash or ticket citation data, cellular telephones for rescue calls, automated crash-notification systems, and photographic systems to automate ticketing for red-light running.

In recent years, electronics and communication technologies have been developed to improve highways and vehicles. Government agencies and the private sector have allocated significant resources to develop an ''Intelligent Transportation Systems'' (ITS). Their efforts have focused on commercially appealing applications such as congestion relief, navigation information, electronic toll collection, and onboard ''Mayday'' communication systems for personal security.

Adaptations of these emerging technologies could have significant potential to aid emergency rescue services, crash

investigations, traffic law enforcement, and other traffic safety efforts. However, many traffic-safety priorities, such as increasing safety belt use and reducing impaired or aggressive driving, might involve vehicle or driver-license technologies requiring public investment, vehicle regulations, or court-imposed use—a contrasting paradigm from the current ITS ''free-market'' perspective where motorists pay for high-tech services.

What We Have Learned

Applied technology provides demonstrated benefits in safer driving behaviors and reduced crashes. For example, speed enforcement using photo radar reduced injury crashes by 20 percent on Norway's rural roads, and Australia's metropolitan roads saw 20–49 percent reductions in crash severity. At one busy intersection in Maryland, red-light running was reduced by 27 percent, by using an automatic system just to mail warnings to violators. Elsewhere, the risk of alcohol traffic violations by repeat offenders was curtailed by as much as 65 percent in the first year, while their vehicles were equipped with alcohol breath testing equipment and ignition interlocks.

Notwithstanding these possible benefits, the traffic safety community in the U.S. has been reluctant to adopt technology applications. Initial experiences with automated speed enforcement and safety-belt interlocks have generated political opposition. However, increasing public concerns with aggressive driving and red-light running may create a climate of greater acceptance for carefully selected demonstration projects. Widespread public acceptance of traffic safety technologies will depend on the degree to which motorists are convinced that these applications improve traffic safety, are affordable, reliable, fairly generate ticket revenues, deal with laws or matters that are respected by the public, and provide sufficient privacy protection. To help alleviate the public's fears about potential privacy intrusions and abuses by ''Big Brother,'' public information addressing technology design and program management must accompany the introduction of new technology.

Current Research and Evaluation

One project tested a laboratory prototype instrument that uses an infrared laser beam to detect alcohol vapor within the passenger compartment of the vehicle. The instrument is intended for use at checkpoints, stop signs and other traffic environments to screen vehicles for potentially impaired drivers. Another project is developing a system of sensors for use at checkpoints that detect vehicle maneuvers associated with impaired driving. If tests are positive, the system will be field tested in a subsequent study to assess its ability to improve police detection of drinking drivers at checkpoints.

Strategic Issues for Research on Technology Applications

- The ways in which ITS technology could be employed in the service of improving traffic safety are currently not known. Undoubtedly, some systems could be applied to traffic enforcement as currently designed (e.g., traffic observation systems could record data on law-breakers, speed monitoring devices could help enforce speed limits). Other components would need modification or adaptation to be used for traffic safety purposes. And there may exist traffic safety applications for which existing products cannot be modified to fit and will require new developmental efforts. Providing the traffic safety community with improved knowledge of the technological products that exist or are in development would help foster demand for and permit assessments of how the various technologies must be adapted in order to be applied to traffic-safety applications.
- Traffic-safety technologies face a number of practical concerns with which other ITS systems may not have to deal. In addition to being able to withstand crash forces, safety-oriented products must also resist tampering, jamming, counterfeiting, and other problems. Research is needed to identify factors that will influence production and deployment of technological devices and to define system characteristics that will minimize costs of production, deployment, operations, training, and maintenance and will foster the integration of technologies through sharing common hardware or systems.
- Development and deployment of traffic-safety technologies will require increased political support, executive leadership, institutional reforms, legislation, or regulations. Acceptance of these technologies by the traffic safety community will also require considerable attention to various critical concerns (e.g., privacy protection, ''ticketing by mail,'' and other institutional/legal barriers). Identification of the institutional partners and the barriers to full acceptance and implementation of traffic-safety technologies will permit the development of strategies and action plans to assist states and communities to make necessary accommodations for emerging technologies.
- The ultimate success of efforts to employ new technologies to improve traffic safety will depend on the acceptance and support of the public. Successful applications will require proactive dialog with members of the public to overcome their many valid concerns and reservations. Accordingly, research is needed to define the nature and extent of the public's concerns and to develop technical, legal, and administrative strategies to gain public support for technological solutions to traffic-safety problems.

Program Evaluation

Background

ORTR/RED routinely conducts evaluations in the areas of legislative changes, enforcement programs, and educational programs. ORTR/RED has conducted more than 200 program evaluations. Evaluations are conducted on agency-developed countermeasure programs and on selected programs that are implemented at the state level or local level, independent of the agency. For example, ORTR/RED initiated and evaluated a program in Baltimore, Maryland to determine the effect of various NHTSA-developed countermeasures to the alcohol-related pedestrian crash problem. ORTR/RED also evaluated the impact of California's upgrade of its safety belt use law to allow for primary (standard) enforcement procedures, and an evaluation was recently conducted of Maryland's ''zero tolerance'' BAC law for underage drivers.

What We Have Learned

Evaluations provide evidence of impact for several legislative, enforcement, education, and other countermeasure programs. As a result of past evaluations, the impact of several important programs has been documented to provided guidance and support for future federal, state, and local efforts. Some of the completed evaluations have documented the impact of programs such as: sobriety checkpoints and saturation patrols for impaired drivers, impoundment and forfeiture laws for repeat offenders, license plate sticker laws, minimum drinking age (21) laws, lower BAC limits for youth, .08 BAC levels for adults, drug evaluation and classification (DEC) procedures, passive alcohol sensors, alternative ride programs, safety belt laws, primary enforcement provisions of safety belt laws, child passenger safety laws, occupant protection strategies for rural areas, special traffic enforcement programs (STEP) for safety belt laws, enforcement and education efforts to increase toddler restraint use, motorcycle helmet laws (and repeals), motorcycle rider education and training programs, driver education and training programs, pedestrian programs for young children (including elementary school bus riders), publicizing insurance sanctions, speed enforcement programs using radar and laser devices, municipal speed enforcement programs, emergency medical services training, self-sustaining traffic safety programs, etc.

Evaluation efforts span all of the program areas. However, there are constraints involving limited staff and monetary resources. One of the key issues that needs to be addressed in the strategic plan is the practical matter of deciding which evaluations to perform and what level of resources needs to be available for quick turnaround evaluations of unexpected events (e.g. legislation) occurring in the states.

Current Research and Evaluation

Recently completed evaluations have demonstrated that: upgrading a secondary-enforcement safety-belt law to standard enforcement leads to an increase in belt use rates of about 15–19 percentage points; routine traffic enforcement reduces crime rates, both through police presence and by apprehending suspects for whom warrants have been issued; and youth peer-to-peer groups positively can affect attitudes and behaviors of teens regarding drinking and driving.

Current evaluations include: a national evaluation of Selective Traffic Enforcement Programs (STEPs) in 20 states; a national evaluation of child safety seat distribution programs; an evaluation of the repeal of the motorcycle helmet laws in Arkansas and Texas; an evaluation of why alcohol-related fatalities declined substantially more in 5 states than the rest of the nation; an evaluation of the crash problem on the Capital Beltway, and an evaluation of the

effects of the Section 410 Alcohol Incentive Grant Program.

Strategic Issues for Evaluation

- Determining which programs and types of countermeasures to evaluate is a question of setting priorities. Current suggestions for evaluation projects include examining the relative effectiveness of general deterrent legislation (e.g., .08 BAC limits) and specific deterrent legislation (e.g., vehicle impoundment for repeat DWI offenses) on the incidence of alcohol-related crashes.
- Another need is to evaluate the effect of driver license points as a sanction for safety belt use law violations.
- ORTR/RED's ability to offer program evaluation support to individual states and communities is limited. There are usually more programs in need of evaluation than ORTR/RED has capability to serve. One possible method to expand the number of evaluations that can be conducted would be to help develop the capacities of the states to perform evaluations.

[FR Doc. 97–28163 Filed 10–22–97; 8:45 am]

BILLING CODE 4910–59–P

DEPARTMENT OF TRANSPORTATION

Surface Transportation Board

[STB Finance Docket No. 33472]

Fun Trains, Inc.—Operation Exemption—Lines of CSX Transportation, Inc. and the Florida Department of Transportation

Fun Trains, Inc. (Fun Trains), a noncarrier, has filed a verified notice of exemption under 49 CFR 1150, Subpart D—*Exempt Transactions* to operate an excursion rail passenger service pursuant to trackage rights granted by CSX Transportation, Inc. (CSXT) and the Florida Department of Transportation (FDOT) over approximately 241 miles of their lines of railroad between MP 1034 at Hialeah, FL, and MP 793.5 at Poinciana, FL. The transaction was scheduled to be consummated on October 1, 1997.

On October 31, 1996, and January 6, 1997, Fun Trains and its corporate parent, First American Railways, Inc. (First American), entered into an agreement with CSXT entitled ''Trackage Rights Agreement'' and an agreement with FDOT entitled ''Operating Agreement'' (collectively, the Agreements). Pursuant to the Agreements, CSXT and FDOT will grant Fun Trains exclusive overhead trackage rights over their rail properties to operate a privately funded excursion passenger train to be known as the ''*Florida Fun Train.*'' The Agreements are for a 5-year term with an option to renew for another 5-year term, subject to Amtrak's right to operate intercity rail passenger service, the rights of publicly funded government agencies (or their agents) to run passenger service, the rights of others to operate high speed passenger service, and CSXT's right to run freight service over these lines. Amtrak will supply locomotives and crews. First American and Fun Trains will jointly and severally assume the obligations established under the Agreements.

Fun Trains will provide a one-way and a round-trip entertainment service between Hollywood and the Poinciana, FL areas, offering deluxe coach accommodations, food and beverage service, and on-board entertainment. No service will be provided to intermediate points in competition with the service presently provided by Amtrak or Tri-County Commuter Rail Authority and no joint ticketing arrangements will be available.[1]

This notice is filed under 49 CFR 1150.31. If the notice contains false or misleading information, the exemption is void *ab initio.* A petition to revoke the exemption under 49 U.S.C. 10502(d) may be filed at any time. The filing of a petition to revoke will not automatically stay the transaction. An original and 10 copies of all pleadings, referring to STB Finance Docket No. 33472, must be filed with the Surface Transportation Board, Office of the Secretary, Case Control Branch, 1925 K Street, N.W., Washington, DC 20423–0001. In addition, a copy of each pleading must be served on John D. Heffner, Rea, Cross & Auchincloss, Suite 420, 1920 ''N'' Street, N.W., Washington, DC 20036.

Decided: October 16, 1997.

By the Board, David M. Konschnik, Director, Office of Proceedings.

Vernon A. Williams,

Secretary.

[FR Doc. 97–27972 Filed 10–22–97; 8:45 am]

BILLING CODE 4915–00–P

[1] Concurrently, Fun Trains filed a Motion to Dismiss for Lack of Jurisdiction, asserting that the proposed service is outside the Board's jurisdiction as a wholly intrastate excursion rail passenger service. The entire Board will address the jurisdictional issue raised by the motion to dismiss in a subsequent decision.

DEPARTMENT OF THE TREASURY

Internal Revenue Service

[PS–52–93]

Proposed Collection; Comment Request for Regulation Project

AGENCY: Internal Revenue Service (IRS), Treasury.

ACTION: Notice and request for comments.

SUMMARY: The Department of the Treasury, as part of its continuing effort to reduce paperwork and respondent burden, invites the general public and other Federal agencies to take this opportunity to comment on proposed and/or continuing information collections, as required by the Paperwork Reduction Act of 1995, Pub. L. 104–13 (44 U.S.C. 3506(c)(2)(A)). Currently, the IRS is soliciting comments concerning an existing final regulation, PS–52–93 (TD 8659), Gasoline and Diesel Fuel Excise Tax; Registration Requirements (§§ 48.4082–2, 48.4101–1, 48.4101–2, 48.6427–8, and 48.6427–9).

DATES: Written comments should be received on or before December 22, 1997 to be assured of consideration.

ADDRESSES: Direct all written comments to Garrick R. Shear, Internal Revenue Service, room 5571, 1111 Constitution Avenue NW., Washington, DC 20224.

FOR FURTHER INFORMATION CONTACT: Requests for additional information or copies of the information collection should be directed to Carol Savage, (202) 622–3945, Internal Revenue Service, room 5569, 1111 Constitution Avenue NW., Washington, DC 20224.

SUPPLEMENTARY INFORMATION:

Title: Gasoline and Diesel Fuel Excise Tax; Registration Requirements.

OMB Number: 1545–1418.

Regulation Project Number: PS–52–93.

Abstract: This regulation relates to the taxes on gasoline and diesel fuel and affects certain blenders, enterers, industrial users, refiners, terminal operators, throughputters, and certain persons that sell, buy, or use diesel fuel for a nontaxable use. The regulation provides guidance on registration, notification, and recordkeeping requirements which enable the IRS and taxpayers to verify that the proper amount of tax is reported, excluded, refunded, or credited.

Current Actions: There is no change to this existing regulation.

Type of Review: Extension of a currently approved collection.

Affected Public: Business or other for-profit organizations, farms, and state, local or tribal governments.

Estimated Number of Respondents: 322,550.

Estimated Time Per Respondent: Varies.

Estimated Total Annual Burden Hours: 36,885.