

REPORT TO CONGRESS
ON
PROVISIONS OF STATE SAFETY BELT USE LAWS
AND
OTHER PROGRAMMATIC FACTORS
RELATED TO
INCREASING SAFETY BELT USE LEVELS

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U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
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EXECUTIVE SUMMARY

In the Department of Transportation's 1987 supplemental appropriation, Congress directed the National Highway Traffic Safety Administration (NHTSA) to begin a comprehensive, systematic research program to evaluate safety-belt laws. In particular, NHTSA is to identify and evaluate those statutory provisions and other programmatic factors that result in the most significant increases in safety-belt use. NHTSA is to report its results annually through 1990.

This initial report begins by discussing what we now know about why some states and communities have achieved higher belt use than others under their belt use laws. The available information is far from complete, and the second section outlines the gaps in our current knowledge. The final section presents our research plan to address these gaps.

CURRENT KNOWLEDGE: WHICH ACTIVITIES INCREASE SAFETY BELT USE?

In the absence of belt-use laws, states and communities employed many approaches in their efforts to stimulate the use of safety belts. With the passage of belt-use laws, many of these programs expanded to include enforcement activities. Limited information is available on the effectiveness of belt-law related program activities. This report provides information from studies of enforcement and information programs in the U.S. and Canada, and from one study of belt-law programs in the U.S. These studies suggest that successful states and communities have an active and dedicated safety-belt use program that ties together and encourages a wide variety of activities, including enforcement, public information and education, community support, and employer support. While combined enforcement and publicity appear to be critical in obtaining high belt-use rates, it is not clear what strategies are most effective. Moreover, the roles of other program activities in creating and maintaining the public and political support necessary for enforcement programs are not known.

Higher Usage Levels are Associated with Higher Enforcement Levels

The most effective belt-use programs have combined belt-law enforcement with intense media campaigns publicizing this enforcement. These programs both increase the chance that an unbelted person will receive a citation and also increase the public's perception of this enforcement. Both appear to be necessary.

Evidence for this conclusion comes from several sources. Canadian provinces and municipalities have operated Selective Traffic Enforcement Programs (STEPS) directed at belt-use laws for eight years. STEP programs raise belt-use substantially through a short, concentrated information and enforcement program. Belt use usually drops after the program ends, but does not fall to the pre-STEP level.

The Insurance Institute for Highway Safety (IIHS) operated a similar program in Elmira, New York, in the fall of 1985. It obtained similar results: an immediate and substantial belt use increase, followed by a moderate drop. Another program in Modesto, California, showed the same pattern, but had only a moderate effect on belt use.

NHTSA experimented with different enforcement strategies in New York communities in 1986. Albany (population: 102,000) used intensive publicity and enforcement over brief periods, like the Canadian and Elmira programs, issuing nearly 60 citations per day during the enforcement periods. The program rapidly raised belt use from 52% to 65%, but eight months later belt use had fallen to pre-program levels. Greece (population: 98,000; a suburb of Rochester) used publicity emphasizing the safety benefits of belts rather than the fear of arrest, but featured local police in these efforts. Greece police increased their belt-law enforcement only for drivers stopped for some other violation, issuing an average of one citation per day over the course of the program (a ten-fold increase over pre-program levels). Belt use in Greece increased gradually during the program from 49% to 66%, but did not fall after the program's end. A comparison community increased enforcement activities about the same degree as did Greece, but did not conduct any public information activities. It showed no change in belt-use levels during the course of the study. These results, while too limited to support firm generalizations, suggest that a combination of these two enforcement and publicity strategies may be desirable.

Additional, and somewhat different, evidence on the role of enforcement comes from B. J. Campbell of the University of North Carolina's Highway Safety Research Center. Campbell compared statewide belt-use rates with belt-law enforcement type and level. He found that states where only warnings were issued had lower belt use than states that issued citations. Further, states where citations could only be issued in conjunction with another traffic violation (secondary enforcement) had lower use rates than states where citations could be issued for belt-law violations alone (primary enforcement). Finally, for each of these two types of enforcement, belt use increased as enforcement activity (measured by the number of citations issued by state highway patrols) increased. Campbell emphasized that these results were based on limited data of unknown comparability and warned against generalizing beyond the situations he examined.

Effective Programs Require Effective Public Information and Education

Public information and education (PI&E) about safety belts has taken two main approaches. One emphasizes the safety benefits of wearing belts, and can be used either with or without a belt law. The other emphasizes enforcement: failure to wear a belt can result in penalties. One of these messages is essential to effective enforcement efforts.

Public information and education programs in the high belt-use communities studied in NHTSA's Program Factors study shared three characteristics:

- o Messages were directed to specific target audiences.
- o The media for delivering the messages were also directed to the target audiences.
- o The messages reached a high proportion of the target audiences.

Inferences drawn from NHTSA's 19-City study suggest that public information and education efforts without a well-enforced belt law have limited effects on belt use.

The Basis of Effective Programs is Community Support

In prelaw and non-law states, community action programs have demonstrated their effectiveness in increasing belt use. Building support for the enforcement of belt-use laws presents a new challenge for these programs. There are at least two reasons why public support is essential:

- o Police command has indicated that they need community support for enforcement efforts; and
- o NHTSA continues to seek community role models to espouse belt use as a major public health problem to be addressed within the community.

Most states and communities with belt laws have programs involving many activities: articles in public and private publications, local coalitions supporting belt use, lobbying for belt-use legislation, educational efforts, and testimonials by those "Saved by the Belt", among others. These activities originate from many sources, including elected officials, public interest groups, public figures, industry representatives, medical professionals, and employers. All contribute in one way or another to public acceptance of belt use and belt-use laws.

Investigators conducting the Program Factors study got the sense that there were important qualitative differences in the conduct of community support activities between communities with high and low belt-use rates. However, the study was not designed to address these kinds of issues, and it did not discern differences between communities on the broad quantitative measures it did address. It is not yet possible to say which activities are more effective than others, or how the program supporting all these activities can best be organized.

Conclusions

1. Well publicized enforcement can produce immediate, substantial and long-term belt use increases.
2. Without publicity, nominal levels of enforcement do not increase belt use substantially.
3. Publicity without enforcement can increase belt use by a small amount over a long period of time.
4. Enforcement campaigns must continue over time, although high belt-use levels can be maintained by relatively infrequent, low levels of enforcement coupled with publicity.

We conclude that, without enforcement, other activities will have limited effects on belt use. Accordingly, our research strategy focuses on determining effective strategies for enforcement and publicity, including how to make communities more receptive to enforcement programs.

CRITICAL QUESTIONS

We know that a successful enforcement program has several essential elements, but we lack important information in each area:

- o Commitment to enforcement: What preparation is needed for a successful enforcement program? What agencies should take the lead? What are the appropriate roles for different entities and jurisdictions?
- o Adoption of an enforcement strategy: Which strategy is best? Can NHTSA's New York or IIHS's Elmira results be duplicated elsewhere? How should strategies be adapted to local conditions?
- o Dissemination of information: What information is likely to increase public compliance with safety-belt use laws? How should public information campaigns be structured?
- o Creation of public and political support: How can the necessary support be created and measured?
- o Augmentation of police support: What motivates police to enforce the law? How does belt use by police officers affect enforcement? How do judicial attitudes and practices affect enforcement?

RESEARCH PROGRAM

NHTSA's research on the effect of programmatic factors on belt use is integrated with its ongoing research in occupant protection. This research covers assessing the use of occupant protection systems, determining characteristics of individuals that govern their use of occupant protection systems, and identifying programmatic factors that stimulate individuals to use occupant protection systems. Within each of these areas, NHTSA develops and evaluates materials, strategies, or programs to increase use of occupant protection systems.

Plan for Research on Programmatic Factors

To guide research in this area, we have developed a detailed model of cause-effect relationships between program actions and public belt use. The research plan developed from the model calls for research on two fronts:

1. Program Elements -- studies of what programs can do to increase belt use:
 - a. Policy Formation -- discovering how public and political support and other influences affect policy decisions about belt-use encouragement programs and belt-law enforcement activities.
 - b. Public Information and Education -- determining methods for developing effective messages and getting them to desired populations.
 - c. Enforcement of Belt-use Laws -- identifying effective strategies for different enforcement situations, getting officers more involved, and building support for enforcement among prosecutors and judges.

2. Program Structures -- studies of how programs are organized to implement belt-law enforcement programs and achieve program objectives:
 - a. Organizational Components -- identifying which organizations and agencies are essential, effective relationships between components, and helpful roles for component organizations.
 - b. Personnel Qualifications -- determining personnel qualifications required in each organizational component, focusing on leadership and supervisory capabilities.
 - c. Administration -- identifying effective patterns of administration, circumstances affecting location of lead agency, and how relative roles played by each component are determined.

Implementation of the Research Plan

The six projects outlined below address the most pressing of these research needs.

1. Compare blitz and integrated enforcement programs in multiple sites. We know that short, intense, and well-publicized (blitz) enforcement programs increase belt use. NHTSA's Greece, New York, experiment suggests that other integrated strategies may be equally or even more effective in sustaining use increases. This project will study blitz and integrated enforcement programs in six to eight communities each. Sites using integrated strategies will be recruited from the same states as the sites using blitz strategies. Each community will monitor belt use, enforcement activities, media activity, public knowledge and attitudes, and program organization, activities, and costs. This study will provide solid evidence on the relative merits of the two strategies and on how these strategies can be adopted to local conditions.
2. Determine organizational and personnel characteristics of successful enforcement programs. Using the information from the project #1 communities and from others, we shall examine how successful and less successful programs operate. We will compare administrative characteristics, start-up activities, community and public actions, and the knowledge and attitudes of enforcement personnel. This study will provide guidelines for organizing and staffing a successful enforcement program.
3. Identify roles and responsibilities of state and community organizations. Effective programs depend on closely coordinated actions of many different agencies at different levels. But the roles and responsibilities of different organizations have not been well defined. We shall study these questions in the project #2 communities. In particular we shall examine who observes belt use, who develops and distributes materials, who solicits and coordinates media coverage, who conducts training programs, and who coordinates enforcement activities. This study will provide advice on how different organizations can best contribute to an effective belt-use program.
4. Identify the elements of effective public information and education efforts. Public information is essential to a successful enforcement program, but little research has been done on developing effective belt use messages for communities with a belt law. We shall investigate what effective messages contain, how they are presented, what media are used, and how the messages are targeted to specific audiences. We shall examine what information the public needs and how the law enforcement community should be involved. This study will produce guidelines for effective media campaigns.

5. Develop and upgrade training modules for enforcement program participants. Information is not useful unless it is available to those who need it. Training programs collect the necessary information for a given group, develop appropriate materials from this information, and present the information effectively. This project will take the results of the first three projects and of other training materials and develop training programs for elected officials and police, judicial, and media personnel. It will provide a set of training modules, informational materials, and guidelines for each of these major groups.
6. Develop and upgrade community belt use program manuals. We will use the results from these projects and other available research to prepare a "How to" manual for implementing enhanced enforcement programs. The manual will be distributed nationally.

Reports

This is the first of four annual reports. In December 1988 we shall report preliminary results from the first project and provide detailed descriptions of the projects just beginning. In December 1989 we shall give a final report on project #1 and summarize preliminary results from projects #2, #3, and #4. We shall describe any modifications to the research program based on what we have learned so far and shall describe the remaining projects. In the last report, in December 1990, we shall present final results from all projects, summarize what we have learned, discuss open issues, and propose any appropriate additional research to address them.

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INTRODUCTION

Report Requirement

Amendment Number 240 of House Supplemental Appropriations Report HR 1827 authorized \$350,000 to begin a comprehensive, systematic research program to evaluate state safety-belt use laws. In particular, the National Highway Traffic Safety Administration (NHTSA) was to identify and evaluate those statutory provisions and other programmatic factors that result in the most significant increases in safety-belt use. The Appropriations Committee recognized that this would require a continuing program and, accordingly, specified that NHTSA prepare four annual reports covering this effort, beginning December 15, 1987. The initial report should also describe the long-term research program needed to address these issues.

This document is the first of the four annual reports.

Background

Injuries sustained in motor vehicle crashes are the leading cause of death for persons under age 35 in the United States. Slightly over half of these fatalities are passenger cars occupants. For people of all ages, motor vehicle crashes are the fourth leading cause of death. Evidence accumulated over a number of years from analyses of crash tests and actual crashes indicate that safety belts, when used properly, reduce the likelihood of occupant fatalities by 40 to 50% and serious injuries by 45 to 55%.

NHTSA recognized the potential life-saving benefits of safety belts from its very beginning by including a safety-belt requirement in its Federal Motor Vehicle Safety Standard (FMVSS) 208. FMVSS 208 required belts (first, lap belts; then lap and shoulder belts) to be installed in all new cars built after January, 1968. Despite the presence of safety belts in their cars, few drivers and passengers used them. In the early 1970s, after safety belts were standard equipment in new cars, only 17% of respondents to a national survey said that they always used their belts on short trips (which constituted about 95% of all travel of the surveyed population) [Marzoni, 1975]. Usage rates of drivers observed in this study were also about 17%.

Early attempts to increase belt use through regulation focused on the belt systems themselves. Two such approaches deserve mention:

A warning light and buzzer, which stayed on as long as the ignition switch was on and the belts in the occupied front seating positions remained unfastened, was required on cars manufactured after January, 1972. This raised belt use from about 20% on '72 cars without the warning device to about 50% on models with the warning, but use dropped to about 27% in cars with the warning systems after about one year of ownership. Many consumers objected to the continuous buzzer and defeated the system by leaving the belts connected behind or under the seat.

An ignition interlock device, which required front seat occupants to be belted before the car could be started, was required on all new cars beginning with model year (MY) 1974. This initially boosted belt use to about 75%, declining to about 50% within a year. However, the interlock device provoked such opposition that nearly half of the owners of these models disabled the devices, and NHTSA lifted the requirement for cars built after February, 1975. Belt use then dropped to earlier levels, so that by the end of 1975, approximately 40% of front seat occupants of new cars (many of which still had active interlock devices) were belted. [Knaff & Zeigler, 1976]

In 1979, the average belt use by front seat occupants observed in 19 U.S. cities was 11% [Phillips, 1983]. Five years later, belt use had increased only four points (to 15%) [Goryl & Cynecki, 1985], despite both the evolution of more comfortable and convenient belt systems and substantial efforts to inform the public of the benefits of safety-belt use.

One means of providing occupant protection to motorists without depending on their action to fasten safety belts is to provide some form of automatic protection, either through belts that restrain an occupant automatically when the door is closed, or airbags that inflate on crash impact (airbags require the use of a belt system to protect against non-frontal crashes). A few models having automatic belt systems were manufactured as early as 1978, comprising about 1% of the vehicles observed in the 19-City Studies in the early '80s. Observations in 1983 showed that 82% of the front-seat occupants of those cars wore their belts [Perkins, Cynecki, & Goryl, 1984].

Recognizing the merit of automatic protection, NHTSA revised FMVSS 208, requiring that automatic protection be introduced gradually in new cars starting in MY 1987, and included in all new cars in MY 1990. Preliminary data from two surveys indicate that, depending on the characteristics of the automatic safety-belt system, from 64% to 99% of front seat occupants of the MY 1987 cars equipped with automatic belts are using them.

The requirement for automatic protection, however, does not eliminate the need for people to use manual protection systems. This regulation affects only front-seat occupants of new cars. Also, cars without automatic protection will be in service for another 10 years or longer. Consequently, front-seat occupants of older automobiles and back-seat occupants of all automobiles must engage safety belts manually in order to obtain adequate protection. Furthermore, occupants of cars equipped with air bags must manually secure safety belts to be fully protected, and parents installing child safety seats in front-seat positions must manually attach belt systems.

Beginning in the early 1970's, a number of foreign countries began enacting laws that required motorists to use safety belts. Belt-use rates increased dramatically. Australia showed the greatest change: prelaw belt use stood at 22%; after the law, the use rate was observed to be 90%. Fatality rates dropped significantly with increased belt use. Estimates from a number of studies in Australia, Sweden, Germany, and the United Kingdom range from 7.5% to 30% reductions in fatalities due to belt laws. [Campbell & Campbell, 1986]

Based on favorable results of their child passenger safety laws, and looking at the experience of other countries, New York passed an adult belt-use law in 1984. Subsequently, other states realized that laws requiring belt use could increase use substantially. As of December 31, 1987, 31 states and the District of Columbia required safety belts to be used in passenger automobiles.

Some state laws have raised belt use to as much as 70% when they first became effective. Table 1 shows pre- and post-law belt-use rates of 31 states and the District of Columbia. Long term effects, however, varied considerably. In some cases, belt-use rates dropped sharply to about 45 to 50% within about six months. In other states, belt use remained at the high levels originally achieved. In still others, belt use gradually increased; in others the law produced little change in belt use [Campbell, Stewart, & Campbell, 1987]. In some cases, there is considerable variation in belt use within a given state.

There is much speculation about the causes of these differences, but few facts exist to explain the variation in states' experience. Unless we understand why different states achieved such different results, we will fail to achieve the full benefits possible from safety-belt use laws.

The remainder of this report addresses this fundamental issue:

Chapter 1 examines the relatively scarce data on why some states and communities have realized large belt use increases while others have not.

Chapter 2 lists the critical questions that need to be answered about the relationship between program activities and belt use.

Chapter 3 outlines a research program to gather the information needed to answer those questions.

Table 1
Belt Use Survey Results by State¹

State	Year Enacted	Prelaw Baseline Belt Use %	Highest Belt Use %	Latest ² Belt Use %
California	1986	18	47	47
Connecticut	1986	25	55	56
Colorado	1987	18		
D.C.	1985		55	55
Florida	1986	22	60	60
Hawaii	1985	33	73	64
Idaho	1986	16	27	27
Illinois	1985	16	47	47
Indiana	1987	20	52	52
Iowa	1986	18	63	63
Kansas	1986	10	44	44
Louisiana	1986	12	35	35
Maryland	1986	30	74	66
Massachusetts	1986	20	37	25 (repeal)
Michigan	1985	20	58	47
Minnesota	1986	20	33	32
Missouri	1985	10	40	40
Montana	1987	33		
Nebraska	1985	11	45	29 (repeal)
Nevada	1987	21		
New Jersey	1985	18	42	41
New Mexico	1986	12	53	50
New York	1984	16	57	48
North Carolina	1985	25	77	65
Ohio	1986	16	48	41
Oklahoma	1987	16	41	35
Oregon	1987	35		
Tennessee	1986		28	28
Texas	1985	15	66	60
Utah	1986	18	22	22
Virginia	1987	32		
Washington	1986		51	51

- Notes: 1. Table adapted from Campbell et al., 1987.
 2. As of August, 1987.
 3. Pennsylvania and Wisconsin enacted belt laws subsequent to the preparation of this table.

CHAPTER 1

IMPLEMENTATION OF STATE BELT-USE LAWS: WHICH ACTIVITIES INCREASE SAFETY BELT USE?

To date, most available information about program activities to increase safety-belt use comes from prelaw or non-law programs. These programs necessarily focused on giving people reasons for developing belt-use habits based on safety benefits or other (usually material) incentives. In their efforts to increase voluntary belt use, states and communities devised or encouraged a wide range of activities. These activities fall into four broad areas:

Public Information and Education (PI&E). These efforts attempt to increase the public's knowledge about the safety benefits of belt use, usually employing the mass media, but also through displaying posters and distributing brochures and other printed messages through a variety of channels, presentations in classrooms or club meetings, and demonstrations at public gatherings (e.g., malls and fairs).

Community Support. These activities have in common a public display of support for belt use by elected officials, sports figures, community and religious leaders, health and medical groups, schools, civic groups and service clubs, and merchants and business leaders. Support activities include distributing materials, making media appearances, attending belt-use seminars, joining the state or local safety-belt coalition, lobbying, sponsoring or providing prizes or incentives for belt-use programs, and participating in "saved-by-the-belt" programs.

Employer Support. These activities center on issuing policies requiring belt use in work-related vehicle travel, providing education on the policies and the merits of belt use, and establishing incentives for use or sanctions for non-use.

Incentives. Incentive programs seek to identify individuals (or, in some educational or worksite settings, groups) who are using safety belts at an unannounced (and sometimes mobile) checkpoint. These users are then given awards or prizes and recognition for their belt use. These awards are well publicized in an attempt to encourage others to begin wearing belts (presumably in the hope of obtaining a similar reward). Incentive programs have most often been used in non-law situations.

With the passage of state belt-use laws, many state and community programs expanded to include enforcement and other activities in support of enforcement. With monetary and programmatic support from NHTSA, program administrators and coordinators are beginning to reformulate their programs to take maximum advantage of the existence of the law: to create public support for enforcement, to elevate enforcement levels, and to ensure appropriate dispositions of citations.

Evaluations of the effectiveness of belt laws to date have focused on short-term changes in fatalities and injuries. It is difficult to obtain precise estimates of belt-law effectiveness for individual states due to the limited number of casualties in the post-law period and the difficulty in controlling for the many other factors that affect traffic casualties. However, five independent studies [summarized in Campbell et al., 1987] found that belt laws have reduced passenger vehicle occupant fatalities by about 6% to 10%. These casualty reductions follow directly from increased belt use. Accordingly, the important issue for this report is to determine the effects of belt-use laws on safety-belt use levels.

Of the available reports on the effects of belt-use laws on belt-use levels, most dealt with specific enforcement strategies. Some of these mentioned ways to publicize enforcement efforts; a few discussed broader public information and education efforts. Only one report, NHTSA's study of the program factors associated with increased belt use [Burkhardt, Shannon, Worthington, Wozny, & Block, 1987], dealt with the broad range of program activities in belt-law states.

In addition to the information on programs within the United States, a fair amount of information on enforcement programs is available from other nations. Most of these countries' experience with belt laws predates our own, in some cases by many years. Although circumstances in most countries differ considerably from those in the U.S. [Campbell & Campbell, 1986], rendering comparisons difficult, these differences are probably the least between the U.S. and Canada. Accordingly, we have included a review of the Canadian experience with belt-use laws.

The limited available information suggests that states and communities with a dedicated belt-use program achieve higher belt use than those that do not have a program. While all activities that increase awareness of a safety-belt law probably help raise belt use, the most important areas seem to be enforcement and public information. Enforcement programs appear to depend upon community action programs to create and maintain necessary public and political support. This chapter surveys the evidence for these tentative conclusions.

Higher Usage Levels Are Associated with Higher Enforcement Levels

Within jurisdictions subject to belt-use laws, programs that have made efforts to increase enforcement and publicize their enforcement efforts have been among those with the highest belt-use rates. These programs both increase the chances that an unbelted person will receive a citation and also increase the public's perception of this enforcement. Both appear to be necessary.

Unless it is exceptionally vigorous, enforcement without publicity will affect only a small proportion of the driving public, so it will have little impact on overall belt use. Conversely, publicity without enforcement may have an initial effect, but belt use will drop when the public realizes that there is

no bite behind the publicity's bark.

This section describes the most important of these studies.

Canadian Enforcement Programs

Several Canadian provinces enacted belt-use laws in the mid-1970's. As of July 1987, all ten Canadian provinces have belt laws in effect. The early experiences in Canada were that belt-use laws created dramatic rises in belt use immediately following the enactment of those laws (up to 80%), but that belt use then declined to 40 to 50% within three years of passage of the laws.

To reverse the decline and maximize safety-belt usage, Selective Traffic Enforcement Programs (STEPs) were designed and implemented at various locations. STEPs consist of intensified enforcement of a given offense combined with high levels of publicity about the enforcement effort. STEPs typically use three phases: education, warning, and enforcement, although in some cases the warning phase is omitted.

The Regional Municipality of Ottawa-Carleton, Ontario, employed STEP procedures for safety belts beginning in October 1979 [Jonah, Dawson, Smith, & Kirby, 1981; Jonah, Dawson, & Smith, 1982]. A week after holding a well publicized news conference announcing the program, regional police issued warnings during the first week of October, followed by four weeks of concentrated enforcement with citations for failure to wear belts. The number of tickets written each week was publicized by the media. The safety-belt citation rate was ten times higher during the STEP campaign than the preceding month (1219/mo vs 125/mo), and safety-belt use increased from 58% to 80%. Six months after the program, belt use had dipped to 70%. A comparison community showed essentially no change in belt use, declining from 54% to 50% during the same time period.

The Ottawa program was judged a success. It increased belt use substantially, even six months after the conclusion of the program. It did not require police overtime or extra equipment, but instead redirected enforcement efforts temporarily from other areas to safety belts. Canadian sources estimated the program's total additional cost to be \$125. Similar programs were recommended for other Canadian jurisdictions.

A STEP campaign in Manitoba produced results similar to those obtained in Ottawa [Lai & Dalkie, 1987]. Manitoba had experienced an 8% drop in belt use during the second year of its belt law. As in Ottawa, Manitoba's STEP used about 10 times the normal level of enforcement accompanied by high levels of publicity regarding the enforcement (special news reports, press conferences, and media packages) and public education on benefits of belt use. This campaign, conducted between May and June, 1986, increased driver belt use from 58% to 76%. Two months later, belt usage had declined to 70%, remaining well above baseline level.

A follow-up study in Ottawa-Carleton two years after the first STEP showed a use rate of 66%, still significantly above the pre-STEP rate, and a 44% use rate in the comparison community [Jonah & Grant, 1985]. This study also

tested the effects of additional waves of enforcement and publicity. The authors found that a STEP lasting two days was not effective in increasing belt use, but STEPs of one week or one month duration produced substantial increases. After the third wave ended in October, 1982, belt use in Ottawa-Carleton was 84% while belt use in the comparison community remained at 44%.

A two-week STEP in Ottawa-Carleton conducted in October, 1987, boosted belt use from 79% to 88%. This STEP was somewhat marred by a lack of publicity, due to intensive news coverage of late-breaking national events and to loss of some enforcement effort to patrolling requirements of a strike of postal employees. Conversely, the results may have been enhanced by the concurrent conduct of a province-wide STEP in adjacent Quebec. (Grant Smith, personal communication, 12/1/87)

Canadian officials continue to recommend STEP programs, and STEP programs have been successfully implemented in other Canadian jurisdictions. STEPs use local police and media without large costs. They increase belt use substantially while they are in effect. Though use drops off afterwards, the level remains higher than it was before the STEP. Long-term increases in belt use can be achieved through repeated STEPs.

Elmira, NY and Modesto, CA "Blitz" Enforcement Program

Combined enforcement and publicity programs sponsored by the Insurance Institute for Highway Safety (IIHS) were conducted in Elmira, NY, in the fall of 1985 [Williams, Preusser, Blomberg, & Lund, 1986] and in Modesto, CA, a year later [Insurance Institute for Highway Safety, 1986]. These three-week programs used the same three phases as the Canadian STEPs: publicity (first week), publicity plus police warnings (second week), and publicity plus traffic tickets (third week).

Daytime safety-belt use was 14% in Elmira before the New York State belt law became effective (December, 1984). It rose to 62% during the law's first month, but had declined to 49% by the time the IIHS program began. Before the enforcement program, police had issued one or two tickets per week, usually in conjunction with another traffic violation.

During this three week program, messages on commercial and cable TV, radio, and the local newspaper stressed the increased enforcement efforts and also described the safety benefits of belt use. Public service announcements (PSAs), news stories, and editorials were used. In the third week of the program, the police issued 189 tickets for violations of the safety-belt law.

Belt use rose 28 points to 77%. Two months after the program's end, belt use had dropped to 65%. Belt use in a control community was unchanged while the Elmira program was in effect. A second round of enforcement activity in Elmira, five months after the first round, resulted in an 80% belt-use rate.

The Elmira program, like the Canadian STEPs, was successful in raising belt use substantially. While belt use decreased after the program's end, it remained well above the pre-program level. Unlike the Canadian STEPs, the Elmira program used considerable police overtime for enforcement.

The results of the Modesto program were less substantial, with daytime belt use increasing by 14 points, from 33% to 47%. A few months later, pairing safety-belt enforcement with radar checks for speeding boosted belt use to 57%.

In its only report on the Modesto project, IIHS (1986) attributed the difference between the two sites to different enforcement policies. New York police may stop motorists directly for not wearing belts ("primary" enforcement). In California, police may only issue safety-belt citations to motorists stopped for other violations ("secondary" enforcement). However, IIHS officials have reported in informal discussions that the media coverage in Modesto was far less comprehensive than that in Elmira.

Indeed, Elmira is at the center of its media market "area of dominant influence" (ADI), whereas Modesto lies on the periphery of the Sacramento ADI [Storer Communications, 1986]. People in Elmira watch Elmira TV stations; people in Modesto watch Sacramento stations. A serious difference in media exposure of the enforcement programs would make it impossible to ascertain from these studies the relative importance of media exposure and enforcement policies in producing changes in belt use.

New York State Selective Traffic Enforcement Program

NHTSA also took advantage of New York's lead in implementing a belt-use law to experiment with enforcement and public information strategies. NHTSA's program, called a Selective Traffic Enforcement Program for Occupant Restraints (STEP-OR), investigated two different enforcement and information strategies to increase safety-belt use [Rood, Kraichy, & Carman, 1987]. The project ran from May through October, 1986.

The first strategy was used in Albany (population: 102,000). It featured four waves of "blitz" enforcement, approximately six weeks apart. Each wave consisted of a period of intensified public information (lasting about a week) followed by a week of intensified enforcement accompanied by public information. During each enforcement "blitz," police concentrated on safety-belt law enforcement and ticketed occupants solely for failure to wear belts ("primary enforcement"). Enforcement returned to normal levels between the blitzes. The police wrote an average of 58 tickets per day during each blitz, compared to about one per day before the program and between blitzes.

The second strategy was used in Greece (population: 98,000; a suburb of Rochester). This strategy was based on integrating belt-law enforcement into ongoing enforcement activities. Public information campaigns in Greece were conducted at the same times as the public information components of Albany's blitzes. Although the Greece PI&E campaign emphasized the safety benefits of belt use rather than the threat of receiving a citation, all PI&E materials carried an image of police presence. Police increased their enforcement efforts as part of their regular duties during the entire test period. Citations were issued only to those unbelted occupants who had been stopped for some other traffic law violation ("secondary enforcement"). The police wrote about one ticket per day during the program, compared to one ticket every ten days before the program began (and one ticket every two days after

the program). Even though this represents a ten-fold increase in citations, one ticket per day is, by any standards, a low level of enforcement.

Tonawanda (a suburb of Buffalo) served as a comparison community. No special enforcement or information activities were planned in Tonawanda during the study period.

The blitz enforcement strategy increased belt use in Albany from 52% to 65% in five months. This increase was almost entirely due to the first blitz. Surveys indicated that the public was quite aware of the increased enforcement, and generally attributed their increased belt use to the enforcement program. While the public generally supported enforcement of the law, the program generated some protest against the intensified enforcement. Four months after the program ended, belt use had dropped to 61%. By the end of eight months it had dropped to 50%, just below the rate before the program began.

The integrated enforcement strategy increased belt use in Greece gradually from 49% to 66% by the end of the five month program. Surveys in Greece indicated that virtually no one was aware of any increase in enforcement. Instead, respondents attributed their increased belt use to safety-related motives. Four months after the formal program ended the use rate was 65%, and after eight months it was 67%.

Belt use in Tonawanda remained at about 55% throughout the study period and the following eight months. The lack of change in Tonawanda was extremely important in that, plans to the contrary, the police department increased its citation rate to about the same as Greece. The increased enforcement effort, however, was not publicized in any way.

The results of this study suggest that enforcement strategies that integrate safety-belt citations with other traffic enforcement activities may have a longer lasting effect than periodically intensified safety-belt enforcement. Furthermore, they underscore the essential role of public information in the success of enforcement programs. This study leaves unanswered some rather basic questions, especially about necessary levels for enforcement and the role of police in media messages. Since this study was limited to one site for each strategy, we must be cautious in drawing conclusions or making recommendations.

Overview of U.S. Enforcement Experience

Data from 20 states show that higher belt-use levels are associated with higher enforcement levels [Campbell et al., 1987]:

- o The lowest belt-use rates were reported in states that issued warnings or had no fines. States issuing more warnings generally had slightly higher belt-use levels; and
- o Higher use rates were reported in states that issued more citations for belt-law violations.

This association improved when states were subdivided into "primary enforcement" and "secondary enforcement" groups, with "primary" states having about a 13% advantage over "secondary" states at any given level of enforcement.

The authors of that report were careful to caution readers about drawing simple conclusions from complex data. They pointed out, for example, that enforcement data came from a single source in each state and reflected only state police efforts. Also, different states used different methods to determine use rates; methods that may not be comparable.

NHTSA joins the authors in urging caution in interpreting these results. Associations often occur because both variables are dependent on a third, unmeasured, variable. In this case, greater public awareness and acceptance of belts and belt laws may produce both higher belt use and a political climate that supports stronger enforcement policies.

Police Support is Crucial for Belt-Law Enforcement

Law enforcement officers, like other drivers, have their own attitudes and beliefs about safety belts and belt-use laws. There is some evidence that these attitudes can affect the manner in which they enforce the law. Furthermore, enforcement may suffer if officers believe that the courts do not take the law seriously.

Police Attitudes

Focus group discussions and attitude surveys of law enforcement officers in Michigan indicated that officers' personal support for the belt law and personal use of belts directly influenced their perception of the importance of enforcement of the belt law [Donohue, 1986]. The results of this study suggest that increased enforcement would result from changing certain fundamental beliefs held by law-enforcement officers.

The Belt Use Campaign for Law Enforcement (BUCLE) in Maryland provides an important demonstration of methods to achieve this objective [Cotton, McPherson, & McKnight, 1985]. The Maryland State Police (MSP) undertook this program, well before Maryland's belt-use law was passed, in support of MSP policy requiring on-duty officers to wear safety belts. At this time, only 20% of MSP officers were in compliance with this policy. BUCLE's immediate goal was to reduce crash injuries among the police force by increasing safety-belt use. A secondary goal was to reinforce the agency's role as a model of safe vehicle operation.

The police officers' initial attitudes about belt use were surveyed in the experimental police jurisdictions. Then a program was designed to demonstrate the substantial benefits and minimal costs of belt use for each officer. The program included a brochure distributed to all officers and classroom presentations (including videotaped interviews of both belted and unbelted officers who had been in crashes).

Changes in belt use were monitored by unobtrusively observing officers entering or exiting state barracks. BUCLE doubled safety-belt use by officers in the experimental sites from 20% to 40%.

The Maryland experiment was so successful that the state extended the program to all state police. A follow-up evaluation of the program and the effect of a belt law being passed showed 91% belt use by Maryland State Police officers [McKnight & Hilburn, 1987].

Based on the success of Project BUCLE, the International Association of Chiefs of Police (IACP), in conjunction with NHTSA, is developing and testing a series of police training modules. The IACP program is designed to "train the trainers," thus expanding the ability of the program to reach a large number of officers with minimal costs. While the program content focuses on the personal benefits police officers obtain by using belts, it also stresses the enforcement of belt-use laws.

Association of Use Levels and Disposition of Charges

To the extent that use levels are directly related to enforcement levels, then anything that affects enforcement levels should affect use levels. There is some evidence that disposition of charges can affect officers' enforcement efforts:

- o Officers responding to one part of the state-wide survey of Michigan law-enforcement agencies [Donohue, 1986] indicated that they would be more likely to issue warnings instead of citations for safety-belt violations if they believed that the fine levels would be low or the charges dismissed. Since only a small subset of responding officers were involved in this analysis, however, the strength of this relationship remains unknown.
- o The Program Factors study [Burkhardt et al., 1987] showed that increases in belt use were more strongly associated with the percentage of safety-belt citations for which a fine was actually paid than the number or rate of citations. This study was based on information on enforcement and disposition supplied by different agencies in each jurisdiction. Consequently, the quality of the data may vary widely between communities. Accordingly, this evidence should be considered indicative (rather than conclusive) of the relationship between these variables.

One of the major variables in determining how safety-belt citations are disposed would appear to be whether the law is enforced in primary or secondary mode. For example, in both Albany and Greece, about 85% of the safety-belt citations issued reached final disposition by the time the project ended [Rood et al., 1987]. About 95% of the Albany citations resulted in a fine, compared with 58% (about the same rate as other violations) in Greece. Virtually all of the citations issued in Albany were the result of primary enforcement, meaning that multiple citations were rare. All of the Greece citations were issued in conjunction with another offense.

Because Albany and Greece used different strategies for both enforcement and publicity, it is difficult to draw any strong conclusions. However, it is possible that, when the belt-law citation is issued as a primary offense, the recipient simply pays the fine (probably by mail). When the belt-law citation is issued in addition to another (probably moving) violation, the recipient may be more likely to seek adjudication and, consequently, more likely to have the belt-law charge discharged or dismissed.

The existing evidence is suggestive of a causal relationship between disposition and enforcement (and, hence, belt use). While it is consistent with anecdotal reports from individual officers, it remains suggestive.

Effective Programs Require Effective Public Information and Education

Public information and education (PI&E) about safety belts comes in two main forms:

- o One emphasizes the safety benefits of wearing belts. The message is that belts are good for you; a carrot rather than a stick. This type of message may convey information about projected savings of injuries or fatalities. This message can accompany an enforcement program, as in Greece, NY [Rood et al., 1987], and in the Canadian STEP programs [Jonah et al., 1981; Jonah et al., 1982, Jonah & Grant, 1985; Lai & Dalkie, 1987], but it also applies where there is no belt law.
- o The other emphasizes belt-law enforcement. The main message is that belt use is required by law, and failure to wear belts may result in penalties. These messages may convey information about actual enforcement levels. As shown in the studies reviewed previously, these messages are an essential component of any enforcement effort. Indeed, it appears that the public's perception of enforcement and its consequences matters more than actual levels of enforcement.

Messages about enforcement of the law have principally been carried by news media. The content of these messages is, accordingly, largely outside of the control of program administrators. In contrast, messages about safety benefits have mainly been conveyed by public service announcements (PSAs) and printed messages. With few exceptions, these have not shown ongoing enforcement of the law. Administrators may avoid direct information about enforcement out of fear of public reaction to enforcement efforts.

News programs typically reach large audiences and are not viewed as attempts to change habits. PSAs and brochures, on the other hand, may reach different and more limited audiences and are more likely to be seen as attempts at persuasion. Because of the strong connection between media type (e.g., news or PSA) and message type (e.g., enforcement or safety benefits) we cannot say with confidence if one type of message is more or less effective than the other or if both are needed.

There is little direct evidence on what aspects of a PI&E campaign make it effective in increasing belt use. The Program Factors study [Burkhardt et al., 1987] provides some initial insights. The high belt-use communities studied shared three PI&E characteristics:

- o Messages were directed to specific target audiences instead of aimed at an amorphous average driver. For example, messages were directed specifically at Hispanics, government workers, or employees of large companies.
- o Specific media were chosen in order to reach specific target audiences. For example, Spanish radio and TV stations were used to reach Hispanics in one community. In a community comprised largely of blue-collar workers, organizers chose radio and TV over newspapers and brochures.

- o Messages were conveyed frequently on TV and radio news programs, which typically have larger viewing or listening audiences than entertainment programming, thus potentially influencing a greater proportion of the people living within the reach of the media channels used.

It is not clear from this study, however, the extent to which these characteristics contributed to the high usage or how much they reflected a higher level of official support and program sophistication that might have been present in the high-use communities.

In comparison with the dramatic increases in belt use observed when publicity is combined with enforcement, publicity in the absence of belt-law enforcement efforts appears to have a more limited ability to increase belt use:

- o Fifteen communities in states without belt laws (or prior to the passage of belt-use laws) conducted model programs to increase belt use. Beginning with an average belt-use rate of just less than 12%, these programs increased the average use rate to almost 23% [Burkhardt et al., 1987, Appendix B], but employed a wide variety of approaches to encourage belt use in addition to publicizing safety benefits of belts.
- o In the years prior to passage of belt laws, the average belt use observed in NHTSA's 19-City Study changed very little, from 13% in 1979 to 15% in 1984. This average began to increase substantially only after some states began enacting belt-use legislation. While use rates in cities in non-law states rose modestly, rates in cities in states with laws increased more dramatically. The average belt use in cities not covered by belt laws in 1986 was 23%, compared with 47% in belt-law cities. [Goryl & Bowman, 1987].

It is possible that some of the increases in belt use seen in non-law or prelaw situations may be attributable to anticipation of passage of a law or a misperception about the existence of a law. Among respondents to a national survey of understanding of occupant protection systems, fully 20% of those living in states which did not have a belt-use law believed that their states had such a law [Loux, Hersey, Greenfield, & Sundberg, 1986].

The Basis of Effective Programs is Community Support

NHTSA has long held the premise that community action programs form the proper foundation for increasing belt use. Accordingly, one of the principal tasks of safety-belt encouragement programs has been to stimulate community and employer support activities. Building support for the enforcement of belt-use laws appears to be a major challenge for these programs. There are at least two reasons why public support is essential:

- o Police command has indicated that they need community support for enforcement efforts;
- o NHTSA continues to seek community role models to espouse belt use as a major public health issue to be addressed within the community.

Based on discussions with state and community representatives in states with belt laws, NHTSA's Program Factors study [Burkhardt et al., 1987] identified the following types of community support activities:

- o Issuing directives (e.g., articles in newsletters, announcements in church bulletins) urging belt use;
- o Distributing materials (e.g., incorporating messages in organizational publications, handing out brochures, displaying posters);
- o Joining local coalitions (e.g., task forces, formal or informal networks, educational groups) interested in increasing belt use;
- o Lobbying for passage or strengthening state belt-use legislation;
- o Attending seminars to enhance knowledge and skill related to encouraging belt use; and
- o Publicizing "Saved-by-the-Belt" testimonials.

What separates these activities from the PI&E efforts of the belt encouragement program is the decentralization of information flow. With good community support, safety-belt messages seem to be coming from everywhere. The program factors study identified the following groups as major supporters of these activities:

- o Elected officials (particularly mayors and sheriffs), by making media appearances on behalf of belt use;
- o Public interest groups (e.g., Traffic Safety Now, PTA, National Safety Council, Homemakers Clubs, Rotary, Kiwanis, MADD, SADD, RID), by lobbying and producing and distributing materials;

- o Public figures (e.g., pastors, entertainers, and sports figures), by distributing materials to particular segments of the population, or by making public appearances and performing in media events promoting belt use;
- o Automobile related services (e.g., major motor-vehicle manufacturers, AAA, car insurance company officials, car dealers, rental car officials, driver-education instructors), by making media appearances, producing and distributing promotional or informational materials; and
- o Members of the medical community (e.g., doctors, nurses, emergency-room personnel), by making media and personal appearances and distributing materials.

By lending their names and faces and prestige to the cause of encouraging belt use, these groups and individuals provide role models for the development of belt-use habits and add to the stature and credibility of the cause.

In order for a community to mount an enforcement program, there must be some minimum level of public support for the law and its enforcement. Some, if not all, of these community activities must play an integral role in building that support. Investigators conducting the Program Factors study got the sense that there were important qualitative differences in the conduct of community support activities between communities with high and low belt-use rates. However, the study was not designed to address these kinds of issues, and it did not discern differences between communities on the broad quantitative measures it did address.

It is not yet possible to say which activities are more effective than others, or how the program supporting all these activities can best be organized. Accordingly, future research should go beyond counting the occurrences of activities to investigate the qualitative dimensions of program activities.

Employer Support Programs Provide Access to High-Mileage Drivers

Increasing belt use by employees has become a priority objective for many employers, primarily addressed through safety or wellness programs. Employer support activities identified by the program factors study included the following:

- o Belt-use Policies -- requiring employees to use safety belts while operating company vehicles, usually communicated to employees through employee manuals, fleet operations booklets, memos, and safety programs;

- o Incentive Programs -- awarding prizes (e.g., gift certificates, savings bonds, merchandise, lunches) to employees for wearing safety belts to and from work or on the job;
- o Disincentives -- threats of disciplinary action (referral to a review board, suspension, termination) for failure to comply with company belt-use policies (though enforcement policies were rarely stated explicitly); and
- o Internal Education -- signs, stickers, posters, newsletters, memos, paycheck stuffers, films, seminars, the "convincer," and employee driving courses.

Some employers may question the need for worksite programs in the presence of a state belt law. These programs appear to be critical pieces of the safety-belt use puzzle, reaching high-mileage drivers who might otherwise ignore the law, and providing a basis for development of a belt-use habit that extends beyond the boundaries of the worksite.

Conclusions

The foregoing review leads to the following conclusions about the things that we know:

1. Well publicized enforcement can produce immediate, substantial, and long-term increases in belt-use rates.
2. Without publicity, nominal levels of enforcement do not substantially increase belt-use rates.
3. Publicity without enforcement can increase belt-use rates by small amounts over long periods of time.
4. Enforcement campaigns must continue over time, although high levels of belt use can be maintained by relatively infrequent, low levels of enforcement coupled with publicity.

There are also several conclusions about what we don't know:

1. We don't know what prerequisites are necessary for enforcement, especially in terms of public and political support or police attitudes and cooperation.
2. We don't yet know the best way to do enforcement. The New York enforcement study suggests that sustained integrated secondary enforcement may have longer lasting effects than blitzes of primary enforcement, but we've only done this in one place.

3. We don't know how much enforcement or publicity is necessary to create the perception in the eye of the public that the law is being enforced.
4. We don't know why some people obey the law and others don't.

We are persuaded that, without enforcement, other activities won't have much effect on belt use. Accordingly, the research strategy that we propose is focused on enforcement -- to learn what seems to work and how to create the right conditions for it to work best.

CHAPTER 2

CRITICAL QUESTIONS ON PROGRAM ACTIVITIES

We know that well-publicized and continual enforcement of belt-use laws produces dramatic and enduring belt use increases. We do not yet have a good understanding of what constitutes an efficient and effective enforcement program, the extent to which such a program depends on official and public support for enforcement, or how to generate that community support.

Our analysis of previous projects suggests that a successful program involves the following major elements:

- o Commitment to enhanced belt-law enforcement;
- o Adoption of an enforcement strategy;
- o Dissemination of information to the public;
- o Creation of public and political support for the belt law; and
- o Augmentation of police and court support for enforcing the belt law.

There are significant knowledge gaps in each area. The paragraphs below provide a list of general questions that need to be answered for each of these types of effort. In developing answers to these questions, we will seek to extract general principles that can be adapted to the requirements of specific situations.

Commitment to Enhanced Belt-Law Enforcement

It is one thing to tell communities to increase their level of enforcement, and quite another thing for them to be able to do it. Not only is the ultimate success of an enforcement program dependent on the cooperation of many individuals, agencies, and organizations, so is the ability to get such a program going in the first place. Unless some influential group champions the cause of the enforcement program, its implementation may be weakened or limited at any of a number of critical junctions.

- o What avenues of communications, methods of persuasion, qualities of individual leadership, etc. pave the way for successful implementation of enforcement programs?
- o What agencies are appropriate to take the lead in what contexts?
- o What are the appropriate roles and responsibilities of different entities and jurisdictions?

- o Which activities should states conduct as solo players and which as partners with local jurisdictions.
- o How are police agencies influenced to establish enforcement policies?

Adoption of an Enforcement Strategy

Enhanced enforcement programs have been largely ad hoc efforts by interested law-enforcement agencies using a single enforcement strategy (STEP). Only one study used two strategies (STEP and Integrated Enforcement), and only in one community each. Consequently, our ability to make informed recommendations on enforcement strategies to communities is severely limited.

- o To what extent can the results of NHTSA's New York enforcement study be duplicated in other jurisdictions?
- o What are the advantages and disadvantages of these two enforcement patterns?
- o What variations in strategy are required to take local conditions and policies into account?
- o What benefits might accrue from combining these strategies?

Dissemination of Information to the Public

Some people obey a belt-use law just because it's the law; others do so to avoid being stopped or having to pay a fine; still others seem not to be affected by belt-use laws. Effective enhanced enforcement programs have all included media campaigns to inform the public about the enforcement program and the benefits of belt use. These programs were based on common sense, not detailed knowledge of the motivational systems and information needs of potential belt users.

- o What motivates people to obey the law?
- o What does the public need to know in order to support the law and enforcement campaigns?
- o What are the program's objectives?
- o What does the public actually learn from public-information campaigns?
- o How should public-information campaigns be structured in order to build public support for, and increase compliance with, the law?
- o What are appropriate parameters for PI&E campaigns (e.g., messages, media mix, frequency) for critical target populations?

Creation of Public and Political Support for the Belt Law

Law-enforcement agencies are reluctant to promulgate enforcement policies that the public would criticize or reject or that do not enjoy the support of the governor, mayor, city or county council, or other political office or body. While this kind of support is strong in some communities, it is currently lacking in most others.

- o How do police administrators, elected officials, and judges assess the extent of public support?
- o How do police administrators and judges assess the extent of political support?
- o What can the public and elected officials do to demonstrate their support for enforcement?
- o How does public and political support enhance the enforcement and adjudication of the law?

Augmentation of Police Support for Enforcing the Law

Some police agencies, notably highway patrol agencies, are largely dedicated to enforcing traffic laws. In others, however, traffic enforcement duties must be fit in among other enforcement priorities. Under the pressures of these priorities, some officers may not regard belt-law enforcement as seriously as other police work. In this context, the attitudes of a few key individuals often make the difference between wholehearted and token enforcement efforts. Existing police training programs were created primarily to get officers to use belts themselves and to provide suggestions for making enforcement contacts. While these programs address attitudes toward belt use, not a lot is known about the best way to change attitudes towards, or motivation for, enforcing safety-belt laws.

- o What motivates police officers to enforce the law or not?
- o To what extent does the disposition of safety-belt citations affect officers' willingness to enforce the law?
- o How does police officers' own use of belts contribute to or correlate with enforcement of the law?
- o How does enforcement vary with type of agency (e.g., state, sheriff, municipal, large city vs small town)?

A research program designed to address these questions is described in the next chapter.

CHAPTER 3

OUTLINE OF RESEARCH PROGRAM

NHTSA's research on the effect of programmatic factors on belt use shall be integrated with its ongoing research in occupant protection. NHTSA's occupant-protection research falls into three broad categories:

- o Use of Occupant Protection Systems -- Assessing belt-use rates for manual and automatic occupant protection devices and child safety seats; identifying auxiliary indicators of belt use;
- o User Factors Governing Use of Occupant Protection Systems -- Identifying personal and situational characteristics related to use and non-use of belts; tracking public attitudes and beliefs regarding belt use, automatic protection, and belt-use legislation; judging comfort and convenience of the current generation of occupant protection systems;
- o Programmatic Factors Governing Use of Occupant Protection Systems -- Identifying activities conducted by state and community organizations that facilitate belt use, especially in compliance with belt-use laws, and the organizational structures of successful programs.

Based on the outcomes of the research within each of these areas, NHTSA develops and evaluates materials, strategies, or programs for use by state and community organizations to increase the correct use of occupant protection systems.

Plan for Research on Programmatic Factors Governing Use of Occupant Protection Systems

To guide research in the area of programmatic factors, we have developed a detailed model of cause-effect relationships between program actions and public belt use. Although this model is necessarily complex, the research plan abstracted from the model is straightforward. This plan calls for research to proceed on two fronts, as described in the following outline:

1. Program Elements -- studies of what programs can do to increase belt use. They may be divided into the following three categories:
 - a. Policy Formation -- discovering the methods used by elected officials and police administrators to assess public and political support and how these and other influences affect policy decisions about belt-use encouragement and belt-law enforcement.

- b. Public Information and Education -- determining effective methods for defining specific target groups, setting objectives for materials and programs, determining appropriate strategies for reaching the desired populations, choosing message contents, and disseminating information. (The campaign to inform the public about automatic crash protection adds a new dimension and "push" to these efforts.)
 - c. Enforcement of Belt-use Laws -- identifying effective strategies for enforcing belt laws within differing social and political environments, developing methods and materials for improving involvement of law-enforcement officers in enforcement programs, and investigating avenues for influencing prosecutors and judges to support enforcement programs.
2. Program Structures -- studies of how programs are put together, organizationally, to implement program activities and achieve program objectives. These studies may also be divided into three categories:
- a. Organizational Components -- identifying the essential component organizations and agencies necessary to implement an effective belt-use encouragement program in a state with a belt-use law, determining what types of relationships between components foster more effective program actions, and determining which role distinctions between components can be particularly helpful.
 - b. Personnel Requirements -- determining the number and types of critical personnel required to accomplish objectives established for each organizational component, focusing on leadership and supervisory skills and capabilities in addition to technical qualifications.
 - c. Administration -- identifying effective patterns of administration, including such issues as funding sources and amounts, circumstances that affect the choice of agency within which the leading or coordinating organization is located, and how relative roles played by each component are determined.

This plan not only encompasses the concerns raised in the preceding chapter, but highlights some more general issues that might be overlooked by focusing on specific questions.

Implementation of the Research Plan: Specific Projects to Address Critical Information Needs

We have developed a series of specific research projects to begin implementing the research plan described in the preceding section. Each of these projects addresses one or more of the critical information needs listed in Chapter 2. As these projects progress, new information needs may be revealed or others may become less critical. Accordingly, our research program will remain flexible enough to adapt to changing needs.

The first four projects listed below address the most pressing of the questions raised in Chapter 2; the last two provide avenues for getting the results into the hands of those who need them most:

1. Compare blitz and integrated enforcement programs in multiple sites
2. Determine organizational and personnel characteristics of successful enforcement programs
3. Identify roles and responsibilities of state and community organizations
4. Identify the elements of effective public information and education efforts
5. Develop and upgrade training modules for enforcement program participants
6. Develop and upgrade community belt-use program manuals.

Projects 1 and 4 address the issues of what should be done, projects 2 and 3 address how it is possible to accomplish those things, and projects 5 and 6 put that information together in a form that states and communities can put into practice. Summaries of these projects are provided in the following pages.

PROJECT #1: Compare Blitz and Integrated Enforcement Programs in Multiple Sites

We know that short, intense (blitz) enforcement programs with coordinated media coverage will increase levels of safety-belt use. These have been successful in a variety of jurisdictions in the United States and Canada. NHTSA's New York study suggests that well-publicized, sustained, low-level (integrated) enforcement may be equally successful and maintain higher belt-use levels than blitz programs. Other strategies, such as combined blitz and integrated enforcement, may be more efficient than either of these alone.

In order to broaden our knowledge about the effects of different enforcement strategies, we will compare blitz and integrated enforcement programs in twelve to sixteen communities, divided equally between the two program types. To provide information on "mixed" strategies, we will encourage two or three communities of each type to adopt some aspect of the alternate strategy.

Test site communities will be recruited from states having a belt-use law in effect for at least six months on the basis of interest in implementing an enhanced enforcement program. Communities may range in population from 50,000 to 500,000 and will be selected to represent a range of geographic regions. We will endeavor to match each site using the blitz strategy with a community in the same state using the integrated strategy. Grants to support data-collection and additional enforcement costs will be awarded to the states.

Recruitment efforts of this type produce a collection of communities having rather special characteristics, most notably, the willingness to try something new or different. Since this study is designed to determine the effectiveness of "maximized" programs, this deviation from "average" willingness is a positive factor. Such an approach generally improves not only the quality of the program, but also the quality of the data.

In each of the sites we shall collect the data needed to evaluate the program's effectiveness and assess how it has accommodated and taken advantage of local conditions. The data will be collected consistently across all sites and will include the following types of information:

- o Belt-use observations immediately before, immediately after, and 6 to 8 months after the program.
- o Enforcement activities (e.g., warnings, citations, fines, police time allocated to enforcement) and intensity (i.e., activity/time).
- o Media activity (e.g., public service announcements, news stories, other messages).
- o Public's knowledge and attitudes about the safety-belt law and its enforcement (both before and after the program, if possible) and self-reported belt-use habits.
- o Program organization, activities, and costs.

All project communities will be awarded grants to cover the data-collection activities required by the research. A separate contract will be awarded for the comparative analysis of community data. Results from this project will provide the foundations for Projects #2, 3, & 4.

PROJECT #2: Determine organizational and personnel characteristics of successful enforcement programs

The ultimate effectiveness of safety programs depends on the organizations and people involved in their implementation. Lack of acceptance of a program by organizations or individuals involved in the program's execution practically guarantees that the program will be ineffective. Conversely, highly committed organizations or individuals often can make a program work, even in the bleakest of environments.

Towards the end of Project #1, we will examine the implementation processes employed by participating communities, as well as others (to be identified), that had less success in running enforcement programs. We will compare the following kinds of information:

- o administrative characteristics (e.g., organizational structure, communications channels, personnel selection and performance criteria, amounts, stability, and sources of funding, home agency, relationships with other agencies);

- o content and qualities of start-up activities (e.g., enlisting cooperation of other agencies; training for police, judicial personnel, and elected officials; developing or distributing informational materials; stimulating media coverage);
- o Community and public actions that communicate support for or against the law and how they affect enforcement; and
- o Knowledge and attitudes of law-enforcement personnel related to enforcing the safety-belt use law.

These issues will be addressed using both quantitative and qualitative research techniques to reveal how social and political contexts affect program implementation, what program actions enhance public and political support for the law and its enforcement, and what information and attitudes should be addressed in training of critical program personnel.

PROJECT #3: Identify roles and responsibilities of state and community organizations

Effective programs depend on the close coordination of actions of many different agencies, frequently involving different jurisdictional levels (e.g., state, county, municipal). The roles and responsibilities of each member of the network have not usually been well defined. This project will examine inter-agency efforts to establish complementary and supplemental roles in the states and communities involved in Project #2. Of particular interest are the divisions of effort in the following areas:

- o Observations of belt use and documentation of belt-use impacts;
- o Development and distribution of media materials;
- o Coordination of media materials with other communities;
- o Solicitation of media coverage (especially when a community in one state is in the media market of a large city in another state);
- o Conduct of training programs and workshops; and
- o Coordination and priority setting of belt-law enforcement with other enforcement activities.

This project will employ a variety of qualitative research techniques to explore the needs for leadership in different program areas, to extract patterns of divisions of responsibilities between members of effective networks, and specify the kinds of roles each member plays.

PROJECT #4: Improve the effectiveness of public information
and education efforts

We know that effective enforcement programs must be accompanied by extensive public information and education (PI&E) campaigns at the state and community level. Past programs have usually conveyed messages about the enforcement of the law and belt-use encouragement messages. We suspect that there are situations in which other messages would be more appropriate (e.g., results of the law, results of the enforcement campaign, reasons for mandated belt use rather than voluntary use).

Given that just about all that state and local belt-encouragement programs can do involves communication with the public, it appears that more attention should be given to the development of these messages. For example, the development of many of the public information messages in use today predated the passage of belt-use laws. Furthermore, many of these PI&E efforts appear to have been developed by individuals who were unaware of some of the basic "rules" of good communication.

There are many parameters to PI&E programs, each of which may influence the programs' ability to convey the desired message. Each of the following factors, among many others, has a major effect on who is exposed to the message, whether those who are exposed pay attention to it, whether those who pay attention to it remember it, and whether those who remember it change their behavior because of it:

- o The subject matter of the message (e.g., existence of law, enhancement of enforcement, effectiveness of belts, need for belts with air bags)
- o The "positioning" or personality of the message (e.g., masculine vs feminine, law-abiding vs law-rejecting, conformist vs individualist, moral vs logical)
- o The purveyor, or source, of the message (e.g., government, medical groups, law-enforcement agency, concerned citizen)
- o The type of media chosen to convey the message (e.g., print, radio, TV)
- o Characteristics of the chosen media that affect the segment of the public that might be exposed to the message (e.g., country & western or top-40 radio, TV soap opera or sports programming, foreign-language or major daily newspaper, youth-oriented or senior-citizen oriented magazine)
- o Placement of the message within the media context (e.g., TV prime time vs midnight movie, radio rush-hour programs vs noon time programs, prominent newspaper or magazine location vs "buried in the back")
- o Frequency of message in each distribution channel

Many "rules" of communication are sufficiently general to apply to just about any communication effort. However, specific questions remain about the encouragement of belt use. This project will seek information on the following issues:

- o How law enforcement influences people to use belts. (More than one study has found that both users and nonusers estimated the same level of enforcement activity. However, no study has yet assessed potential differences in how users and nonusers feel about being stopped, receiving a citation, or paying a fine.)
- o How certain types of messages would change people's actions in relation to safety belts (e.g., increasing verbal support for the law, increasing belt use in certain situations, lobbying and letter writing, voting against repeal or for strengthening provisions of the law)
- o What the public wants and needs to know in order to support safety-belt use laws
- o Whom PI&E should address and what PI&E parameters are most effective in reaching those individuals
- o What communications strategies and messages have been more (or less) successful

The conduct of this project will depend in large part on the outcomes of PROJECT #1 as well as currently ongoing NHTSA research on the characteristics of part-time and nonusers of safety belts.

The outcome of this project will be a set of guidelines for designing and conducting state and community media campaigns in conjunction with belt-law enforcement programs.

PROJECT #5: Develop and upgrade training modules for enforcement program participants

Of the various mechanisms through which programs can influence belt use, one of the most powerful is the conduct of training programs for elected officials and law-enforcement, judicial, and media personnel. Training programs have the potential for strengthening the resolve of the committed, changing the attitudes of the skeptical, and opening the eyes of the opposed.

Perhaps because of the relative newness of belt-use laws or the absence of a substantial body of research, only a handful of such training programs have been developed, and most of these exclusively for police agencies. None have been evaluated for long-term impacts on public belt use.

This project will be based on a review of existing training programs and the outcomes of the second and third projects listed in this plan ("Determine organizational and personnel characteristics of successful enforcement programs" and "Identify roles and responsibilities of state and community organizations").

The former will contribute detailed information about the knowledge, attitudes and beliefs of elected officials, police, and judicial personnel as well as understanding of their motivations for supporting, enforcing, and upholding belt-use laws. The latter will provide specific recommendations for organizing the activities of critical organizations and agencies and improving the interactions between them.

This project will use these foundations for developing training or workshop modules to supplement existing programs for law-enforcement officers, and to adapt these programs for judges and prosecutors. These modules will be pilot tested in appropriate sites and revised in accordance with the experience of the various test sites.

The final product of this project will be a set of training modules, informational materials, or guidelines, tailored to each of the major groups active in the implementation of enhanced enforcement programs. Each program will include educational materials that can be adapted to the specific needs of individual States or communities. The revised training materials will be distributed to interested States and communities to assist them in the conduct of enhanced enforcement programs.

PROJECT #6: Develop and upgrade community belt-use program manuals

In order to convey the outcomes of the preceding research projects to State and community program personnel in a practical manner, we will prepare a "How to" manual for implementing enhanced enforcement programs. This manual, representing the final product in the research chain, will summarize the information gained through the rigorous investigations of actual programs. Examples drawn from the previous projects will illustrate the manual's step-by-step procedures.

Program personnel involved in the previous studies will provide detailed comments and recommendations for incorporation into the manual.

This project will field test the manual in at least three communities that have not yet implemented a law-enforcement program. The implementation processes will be monitored for indications that the manual or other materials need further clarification or revision.

The revised "How To" manual will be nationally distributed to interested parties to assist them in the conduct of belt-use encouragement programs based on enhanced enforcement efforts.

Annual Reports

The present report is the first of four annual reports to Congress required by the Supplemental Appropriation. In accordance with those requirements, NHTSA will submit three additional annual reports.

A report on the first year's efforts will be submitted to Congress by December 15, 1988. It will report on the progress of the research program described above. It is likely that the research projects will just be getting underway as Report #2 is being prepared. Accordingly, this report will provide detailed descriptions of the projects just beginning and present available preliminary results.

The third report to Congress, covering the second year's efforts, will be submitted by December 15, 1989. This report will describe the conduct of Projects #1, #2, #3, and #4, summarize their preliminary results, and present detailed descriptions of the two projects in which research results will be consolidated into training and instructional materials. Modifications or additions to the research program will be included in this report.

The last of the authorized reports to Congress, describing the third year's efforts, will be submitted by December 15, 1990. This report will present final results of all completed projects. It will discuss any open questions and, if appropriate, propose research to address them.

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