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MOTOR VEHICLE SAFETY

Comprehensive State Programs Offer Best Opportunity for Increasing Use of Safety Belts

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The Honorable Frank R. Wolf
Chairman
The Honorable Ronald D. Coleman
Ranking Minority Member
Subcommittee on Transportation and
Related Agencies
Committee on Appropriations
House of Representatives

As requested, this report describes the nation's progress in achieving goals for the use of safety belts in motor vehicles, assesses the strategies used most successfully by some states to increase the use of safety belts, and identifies federal strategies that could help increase this use. The National Highway Traffic Safety Administration estimates that 10,000 deaths, 200,000 injuries, and $20 billion in costs to society could be avoided annually if all of the occupants of motor vehicles wore safety belts. This report presents a matter for congressional consideration and a recommendation to the Secretary of Transportation aimed at further increasing the use of safety belts.

We are sending copies of the report to the Secretary of Transportation and interested congressional committees. We will also make copies available to others upon request.

Please call me at (202) 512-2834 if you or your staff have any questions. Major contributors to this report are listed in appendix II.

Sincerely yours,

John H. Anderson, Jr.
Director, Transportation and
Telecommunications Issues

Executive Summary

Purpose

Traffic accidents annually result in over 40,000 deaths and over $130 billion in costs to society. Each year, about 20,000 of the people who die and another 600,000 people who are injured were not using safety belts. The Department of Transportation's (DOT) National Highway Traffic Safety Administration (NHTSA) believes that increasing the use of safety belts is the most effective way to lower the nation's death toll from traffic accidents. NHTSA estimates that 10,000 deaths, 200,000 injuries, and $20 billion in costs to society could be avoided annually if all of the occupants of motor vehicles wore safety belts.

To assist federal and state deliberations on safety belt programs, the Chairman and Ranking Minority Member, Subcommittee on Transportation and Related Agencies, House Committee on Appropriations, asked GAO to determine (1) the nation's progress in achieving goals for the use of safety belts, (2) the strategies used most successfully by some states to increase the use of safety belts, and (3) federal strategies that could help increase this use.

Background

For the last 30 years, the federal government has had an active policy of reducing highway deaths and injuries by encouraging the use of safety belts. In 1968, DOT required that seat belts be installed on all new automobiles sold in the United States. DOT has also worked with the states to encourage the occupants of motor vehicles to "buckle up." However, NHTSA has reported that only about 11 percent of people used safety belts until the states adopted laws mandating belt use in the mid-1980s. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) provided grants and penalties to encourage the states to enact laws or improve the enforcement of their existing laws mandating the use of safety belts. As of December 1, 1995, 48 states and the District of Columbia had laws mandating the use of safety belts by some occupants of certain types of motor vehicles. New Hampshire and Maine had no such law.

In May 1992, GAO reported[1] that numerous studies revealed that using safety belts generally reduced the rates of fatalities and serious injuries by 50 to 75 percent in traffic accidents and that fatalities were 5 to 20 percent lower in the states with laws on safety belt use than they were in the states without such laws. Also, studies of hospital costs showed that the crash victims who had not used belts incurred medical costs that were 60 to 80 percent higher than those of the victims who had used belts. The

[1]Highway Safety: Safety Belt Use Laws Save Lives and Reduce Costs to Society (GAO/RCED-92-106, May 15, 1992).

general public (through insurance premiums and tax-supported government programs) paid over half of these costs. GAO concluded that state laws mandating safety belt use should be strengthened.

Results in Brief

NHTSA reported rates of safety belt use of 62 percent in 1992 and 67 percent in 1994. NHTSA recognized that it could not precisely measure belt use nationwide because its methodology relied on individual state surveys that did not measure belt use consistently. In late 1994, the agency conducted a special nationwide survey to gather more data on the use of restraints. This survey found the rate of safety belt use to be only 58 percent. NHTSA's survey suggests that while the use of safety belts has increased substantially from the 11 percent reported in 1982, considerable progress is still needed if DOT is to meet its current goal of 75-percent use of safety belts by 1997.

The four states—California, Hawaii, North Carolina, and Washington—that have achieved rates of over 80-percent use of safety belts have comprehensive programs, including strong laws on the mandatory use of safety belts, visible and aggressive enforcement of these laws, and vigorous programs to inform and educate the public. Most of the successful states have "primary enforcement" laws, meaning that enforcement officials can stop and ticket a vehicle's occupants solely for not using their safety belts. California reported an increase in safety belt use of 13 percentage points within 1 year after changing to a primary enforcement law from a secondary one (which allows a vehicle's occupants to be ticketed for not using safety belts only if they have been stopped for another violation). Ten states have primary enforcement laws, while 39 states (including the District of Columbia) have secondary enforcement laws.

Several federal actions could increase the use of safety belts. An effective federal strategy would be to encourage the states to have comprehensive programs that include all the elements that work together to increase safety belt use—primary enforcement laws with aggressive enforcement, requirements that all occupants of vehicles that have belts installed use them, fines that discourage noncompliance, and public education. The current federal policy, contained in the Intermodal Surface Transportation Efficiency Act of 1991, encourages the states to have laws mandating seat belt use by the occupants of passenger cars' front seat. The act does not require the occupants of passenger cars' back seats or any occupant of a light truck or van to use safety belts and does not specify primary or

secondary enforcement. Given the increased number of light trucks being sold and the relatively low rate of belt use in these vehicles, special attention is needed to increase the rate of belt use by the occupants of light trucks.

Principal Findings

Safety Belt Use Has Improved, but Great Potential Remains

The available measures of the rates of safety belt use show large increases nationwide since 1982, when NHTSA reported a use rate of 11 percent. NHTSA's estimates, however, indicate that the increase in belt use nationwide has moderated in recent years. Although it is relatively certain that safety belt use has increased overall, the precise rate of belt use in the United States is unknown. NHTSA recognized that its estimate of 67-percent use in 1994 might not accurately represent the nationwide use rate because this estimate was based on state surveys that used different methodologies and thus did not measure belt use consistently. For example, 22 states surveyed only passenger cars, while 20 states surveyed cars, light trucks, and vans. Also, some states counted only the drivers' use of safety belts, while others included other passengers' use as well. To supplement the state surveys and to obtain additional data on the use of restraints, NHTSA conducted a nationwide survey on belt use during October and November 1994. This survey found a nationwide use rate of 58 percent—63 percent in passenger cars and 50 percent in light trucks. The rate for occupants of light trucks is important because these vehicles now constitute about 40 percent of the new vehicles sold.

NHTSA could increase the reliability of the national average based on the state surveys if the agency developed tighter guidelines for the surveys and if the states consistently used those guidelines. However, these changes are unlikely to occur, since the states' laws on safety belt use vary significantly and NHTSA no longer offers financial incentives to encourage the states to improve their surveys. Using state surveys and the 1994 nationwide survey, NHTSA has estimated that the rate of belt use nationwide is either 67 or 58 percent. Given NHTSA's estimates, a substantial increase in belt use must occur if DOT's goal of 75-percent belt use by 1997 is to be met.

Successful State Programs Contain Several Key Components

Wide differences in the states' laws, enforcement, and other activities concerning safety belts have contributed to belt use rates in 1994 ranging from a low of 32 percent to a high of 84 percent, according to reports by the states. Four states reported rates of over 80-percent belt use, while six reported rates of less than 50-percent use. Those states that have been most successful in increasing belt use generally have primary enforcement laws, visible and aggressive enforcement, and active public information and education programs. Of the 10 states GAO visited, the 3 states with primary enforcement laws averaged rates of belt use about 20 percentage points higher than the 6 states with secondary enforcement laws. California is the only state where recent data show the effect of switching from a secondary to a primary enforcement law. That state reported an increase in safety belt use of 13 percentage points within 1 year (1993) after changing its law from secondary to primary enforcement and informing motorists of the change through news coverage. California officials said that enforcement activity increased only slightly, while belt use increased substantially because of an increased understanding on the part of the public that ticketing could occur. The states' estimates of belt use for 1994 show that use in the states with primary enforcement laws averaged 15 percentage points higher than use in the states with secondary enforcement laws.

Through concentrated enforcement efforts, many of the states GAO visited were able to substantially increase the use of safety belts. For example, North Carolina, a state with a primary enforcement law, reported an increase in its belt use rate from 65 to 80 percent in 1993 as a result of an active program of operating safety belt checkpoints throughout the state. Also, Idaho, a state with a secondary enforcement law, reported an increase in its rate of belt use from 35 to 53 percent over a 2-year period as a result of increased enforcement. Public information and education campaigns are also very important for increasing safety belt use. For example, California used a concentrated information and education campaign between November 1989 and November 1990 and reported an increase in belt use from 42 to 52 percent.

Improving Federal Strategies for Increasing Belt Use

The Intermodal Surface Transportation Efficiency Act of 1991 encourages the states to have laws mandating safety belt use by the occupants of passenger cars' front seat. Those states not having such laws must transfer up to 3 percent of their federal-aid highway funds to their state highway safety programs. The act does not specify whether (1) the state law should involve primary or secondary enforcement, (2) occupants of other vehicles

such as light trucks and vans or all occupants of any vehicle equipped with safety belts should be included, or (3) fines should be assessed against violators of the belt use laws. Both NHTSA and the National Transportation Safety Board have strongly supported the use of primary enforcement by all states.

Since the enactment of the Intermodal Surface Transportation Efficiency Act in 1991, seven states that had no law have adopted secondary enforcement laws. Four states that had laws have revised them: Two of these states changed from primary to secondary enforcement laws, and two changed from secondary to primary enforcement laws. Fines for not using safety belts have remained low. Only four states assess fines over $25—one more than GAO reported in 1992. Also, in 1992 the laws in 17 states did not require the occupants of light trucks or vans to use belts, while the laws in 7 states do not require it now. Light trucks are an increasing problem because of their unfavorable rates of rollover, ejection of occupants, and safety belt use and because increasing numbers of these vehicles are being sold.

Several actions could increase the use of safety belts. The House Committee on Appropriations recently directed NHTSA, as part of its 1996 program, to develop and distribute a model safety belt law in order to more aggressively encourage seat belt use nationwide. In addition, the states could implement comprehensive belt use programs by enacting laws that provide for

- primary enforcement, so that enforcing safety belt laws does not depend on enforcing other traffic safety laws;
- coverage of all occupants in all vehicles with belts installed, including the occupants of passenger cars' rear seats and the occupants of light trucks and vans; and
- aggressive enforcement and higher fines to encourage belt use.

Strong federal involvement has the advantage of facilitating the nationwide implementation of comprehensive strategies that have proven successful in the states in increasing belt use and reducing deaths, injuries, and the costs to society. A disadvantage is that the states would have less discretion to structure their own programs.

Matters for Congressional Consideration

Increased seat belt use has the potential to avoid thousands of deaths and serious injuries and save billions of dollars in medical costs, lost productivity, and other expenses that result annually when the occupants of motor vehicles do not use safety belts. The federal government's role in encouraging seat belt use is ultimately a policy decision for the Congress. Current federal legislation provides for both grants and penalties to encourage the states to enact seat belt laws or improve the enforcement of existing laws. Comprehensive programs that include primary enforcement laws, aggressive enforcement, and vigorous public education offer the best opportunity for increasing belt use. If the Congress wants to promote such programs nationwide, it could encourage the states to adopt primary enforcement laws that cover all the occupants of all the vehicles in which belts are installed. Those states that do not enact such comprehensive laws could continue to be subject to the provision in the Intermodal Surface Transportation Efficiency Act requiring a transfer of up to 3 percent of their federal-aid highway funds to their state highway safety programs.

Recommendation to the Secretary of Transportation

In view of the large difference in the rates of seat belt use between the occupants of passenger cars and those of light trucks, we recommend that the Department of Transportation provide special emphasis and targeted programs to increase the use of safety belts by the occupants of light trucks.

Agency Comments

GAO provided copies of a draft of this report to DOT for its comments. GAO met with agency officials, including the Director, Office of Occupant Protection, NHTSA. These officials agreed with GAO's findings, conclusions, matter for congressional consideration, and recommendation. The officials provided a number of editorial and technical comments, which have been incorporated into the report where appropriate.

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Abbreviations

CODES	Crash Outcome Data Evaluation System
DOT	Department of Transportation
FARS	Fatal Accident Reporting System
GAO	General Accounting Office
GES	General Estimates System
ISTEA	Intermodal Surface Transportation Efficiency Act
NHTSA	National Highway Traffic Safety Administration
NOPUS	National Occupant Protection Use Survey
NORP	National Occupant Restraint Program
NTSB	National Transportation Safety Board

Introduction

The use of safety belts has long been considered an effective way to reduce deaths and injuries on the nation's highways. The Department of Transportation (DOT) estimates that 10,000 additional lives could be saved annually if all of the occupants of motor vehicles used safety belts. Safety belt technology has existed for more than a century, but belts were not installed in new cars sold in the United States until the mid-1960s. Even after the belts were available, relatively few people used them. In 1984, New York became the first state to enact a law mandating the use of safety belts. Other states soon enacted similar laws. Currently, 48 states and the District of Columbia have some form of law on using belts. DOT's National Highway Traffic Safety Administration (NHTSA) has estimated that safety belt use increased from 11 percent in 1982 to 67 percent in 1994.

High Costs of Traffic Accidents and Nonuse of Safety Belts

More than 40,000 people have died in traffic accidents in the United States almost every year since 1960. In 1966, 50,894 fatalities occurred on the highways; in 1994, about 40,700 people died. Although crashes of airplanes and trains receive more attention from the media, the number of highway fatalities far exceeds those that occur in all other modes of transportation combined. NHTSA estimates that annually

- about 20,000 occupants of motor vehicles die in crashes while not using safety belts,
- about 600,000 occupants are injured in crashes while not using safety belts,
- more people are killed or seriously injured in road crashes than are the victims of crimes, and
- traffic crashes cost society over $130 billion annually.

NHTSA estimates that from 1982 through 1994, 65,290 lives were saved by safety belts, and about 1.5 million moderate to critical injuries were prevented. Despite these successes, enormous costs are still generated when people do not use safety belts. NHTSA reported in June 1994 that not using belts results in 10,000 deaths and 200,000 moderate to critical injuries annually.[1] NHTSA estimates that these deaths and injuries cost society $20 billion annually in medical costs, lost productivity, and other injury-related expenses.

[1]Estimating the Benefits From Increased Safety Belt Use, U.S. DOT, NHTSA, Office of Regulatory Analysis Plans and Policy.

History of Safety Belts

Safety belts were developed in the 1880s to keep people from bouncing off horse-drawn buggies. However, automobile manufacturers did not offer safety belts in vehicles until the 1950s. In 1961, a few states required that belts be installed in the new cars sold in their states. In 1962, manufacturers began to install safety belt anchorages at the factory, making it easier for car dealers or owners to add safety belts later. In 1964, U.S. manufacturers began making safety belts standard equipment in the front seat of their cars.

Various analyses have been conducted to show what happens to belted and unbelted occupants of vehicles involved in crashes. Figure 1.1 shows how a steering wheel, instrument panel, and windshield absorb crash forces affecting an unbelted dummy.

Figure 1.1: Unbelted Dummy in Crash

Source: Insurance Institute for Highway Safety.

In May 1992, we reported the results of various studies on the effectiveness of safety belts, laws on the mandatory use of belts, and the costs of not using belts.[2] These studies showed that using safety belts generally reduced the rates of both fatalities and serious injuries by 50 to 75 percent in crashes involving motor vehicles. The studies also showed that state laws on safety belt use reduced both fatalities and serious injuries by 5 to 20 percent, even though the use of belts was relatively low

[2]Highway Safety: Safety Belt Use Laws Save Lives and Reduce Costs to Society (GAO/RCED-92-106, May 15, 1992).

during the periods in which these studies were performed. Most studies that addressed hospital costs reported that the crash victims who had used belts averaged 60 to 80 percent lower hospital costs than those who had not used belts. The studies also found that the occupants not using belts who were injured in crashes paid less than one-half of their hospital costs, since most of the costs were paid through insurance premiums or Medicare and Medicaid. The tax-supported programs paid between 8 and 28 percent of the hospital costs.

Federal and State Laws Promote Safety Belts

The Congress and federal agencies have encouraged the installation and use of safety belts since the mid-1960s, and the states began enacting laws on safety belt use in the mid-1980s. Under the initial federal efforts, safety belts were required to meet minimum standards. Since few occupants of vehicles voluntarily used manual safety belts, DOT issued a rule in 1984 mandating that passive restraints—automatic safety belts and airbags—be phased in beginning with 1987 model year cars. Under the rule, the installation of passive restraints could be avoided if states representing two-thirds of the U.S. population enacted satisfactory laws mandating safety belt use. This provision focused attention on mandatory use laws and prompted automobile manufacturers and others to provide funding and support for such laws. The first state law mandating safety belt use was enacted in New York in 1984; by 1986, a total of 22 states and the District of Columbia had such laws in effect.

Since DOT's data showed little increase in safety belt use between 1987 and 1990, the Congress acted in 1991 to again focus attention on increasing the use of safety belts. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) (P.L. 102-240) included financial incentives—grants and penalties—to encourage the states to enact basic safety belt laws and increase belt use. ISTEA provided for grants for up to 3 years to those states that had laws mandating safety belt use and that achieved minimal levels of belt use. The grants totaled $12 million per year for fiscal years 1992 through 1994. ISTEA also required those states that did not have basic safety belt laws to transfer up to 3 percent of their federal-aid highway funds to their state highway safety programs. Maine and New Hampshire are the only states that do not have laws on safety belt use.

Objectives, Scope, and Methodology

This report's objectives were to determine (1) the nation's progress in achieving goals for the use of safety belts, (2) the strategies used most successfully by some states to increase safety belt use, and (3) federal

strategies that could help increase this use. Our work was requested by the Chairman and Ranking Minority Member, Subcommittee on Transportation and Related Agencies, House Committee on Appropriations.

To conduct our work, we visited NHTSA's headquarters in Washington, D.C., the agencies responsible for highway traffic safety programs in 10 states (California, Colorado, Idaho, Maryland, Mississippi, New Hampshire, New Jersey, New York, North Carolina, and South Carolina), and the seven NHTSA regional offices with responsibility for the 10 states. We judgmentally selected the 10 states to include a cross section of state safety belt programs. In making our selections, we considered whether a state's survey on safety belt use had been approved by NHTSA, whether the state had a law on safety belt use involving primary or secondary enforcement, the fine the state assessed for noncompliance with the law, the state's reported rate of safety belt use (so that we selected states with relatively high and low use), and the period in which the state's last survey on safety belt use had been conducted. At NHTSA and the state agencies, we obtained and reviewed pertinent documents and discussed activities concerning safety belts with officials. More specifically, at the various locations, we

- obtained and reviewed pertinent documents, including NHTSA's Regional Action Plans and the states' Highway Safety Plans, which described the state's strategies for increasing the use of safety belts and provided information on past successes;
- reviewed materials developed for public information and education campaigns and for community-based traffic safety programs;
- discussed with state officials what the federal government is currently doing to increase safety belt use, what is and is not working well, and what changes are desirable;
- reviewed appropriate laws and regulations and other relevant documents;
- reviewed the methodologies NHTSA used to calculate the rate of seat belt use nationwide;
- analyzed the methodologies used in state surveys to determine whether the states were consistent in how the surveys were planned and conducted; and
- reviewed NHTSA's guidelines on the state surveys of safety belt use to determine the extent to which the guidance provides for consistent surveys.

Also, as requested, we met with the Canadian officials responsible for implementing safety belt programs to learn what strategies Canada had used to achieve that country's reported 90-percent rate of safety belt use.

We provided DOT with a draft of our report for review and comment. We conducted our review between June 1994 and December 1995 in accordance with generally accepted government auditing standards.

Safety Belt Use Has Increased, but National Goals Have Not Been Met

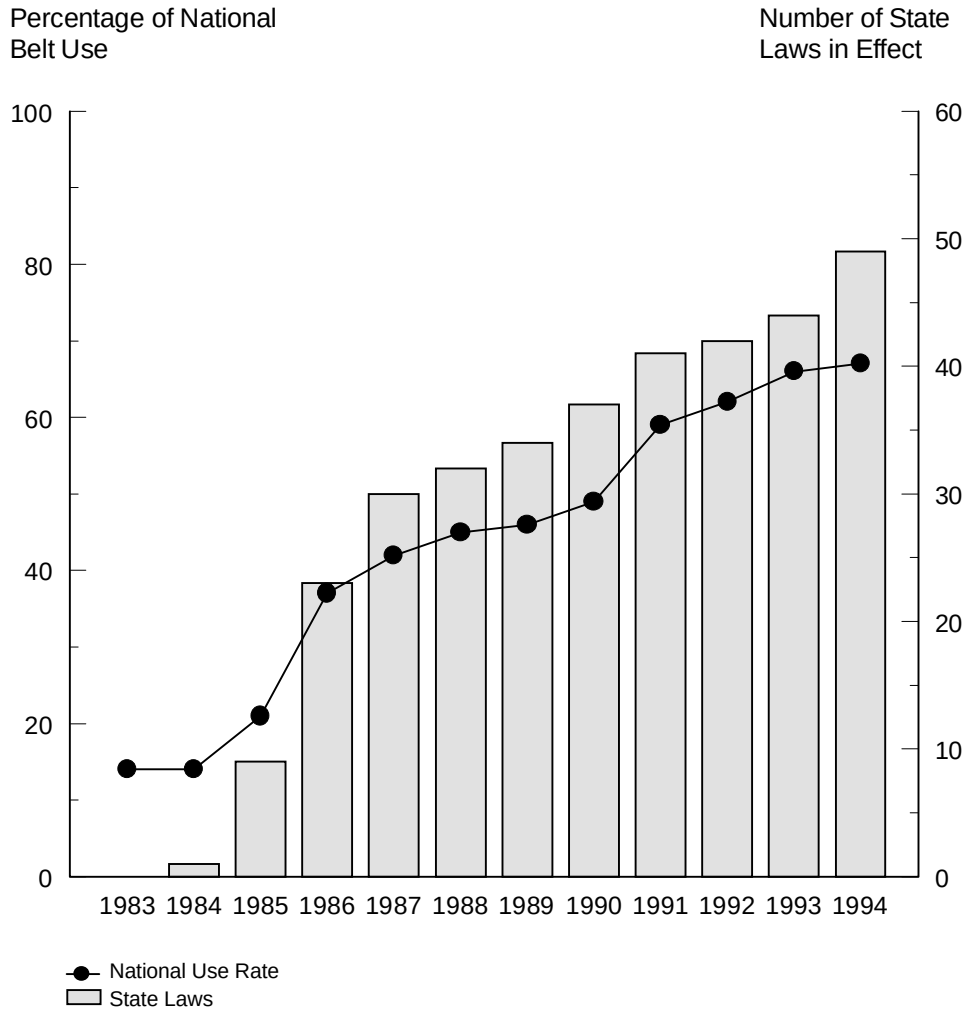
NHTSA has reported that safety belt use increased from 11 percent in 1982 to 67 percent in 1994. However, DOT's recent goals for safety belt use nationwide have not been met. For example, DOT had a goal of 70-percent belt use by the end of 1992 and reported belt use in 1992 to be 62 percent. DOT's current goal is to reach a rate of 75-percent belt use nationwide by 1997. Using two different methodologies, NHTSA has estimated the rate of safety belt use nationwide in 1994 to be either 67 or 58 percent.

NHTSA recognized that its methodology for estimating the 67-percent nationwide rate of belt use was not precise because it relied on individual state surveys that did not measure belt use consistently. For example, 22 states surveyed only passenger cars, while 20 states surveyed cars, light trucks, and vans. Also, some states counted belt use by drivers only, while others included use by other passengers as well. During October and November 1994, NHTSA conducted a nationwide survey to gather more detailed data on the use of restraints. This survey found a nationwide use rate of 58 percent—63 percent in passenger cars and 50 percent in light trucks. The rate in light trucks is important because these vehicles now constitute about 40 percent of the new vehicles sold. Given NHTSA's estimates of a 58-percent or 67-percent nationwide rate of belt use in 1994, significant progress must be made to meet DOT's goal of a nationwide rate of 75-percent belt use by 1997.

NHTSA's Data Indicate Increases in Safety Belt Use

NHTSA has used various methodologies for estimating the rates of safety belt use, and all show substantial increases since the early 1980s. NHTSA's data indicate that the increase has been gradual from one year to the next with two exceptions. First, the largest increase occurred during 1985-86 when the first state safety belt laws went into effect. The second largest increase occurred during 1991-93 when ISTEA provided financial incentives for the states to enact safety belt laws and NHTSA initiated new programs with state enforcement agencies. The estimates indicate relatively small increases in belt use before 1985, from 1987 through 1990, and between 1993 and 1994. Figure 2.1 shows the changes in safety belt use nationwide since the early 1980s relative to the number of state laws on safety belt use.

Figure 2.1: Safety Belt Laws and Use Rates

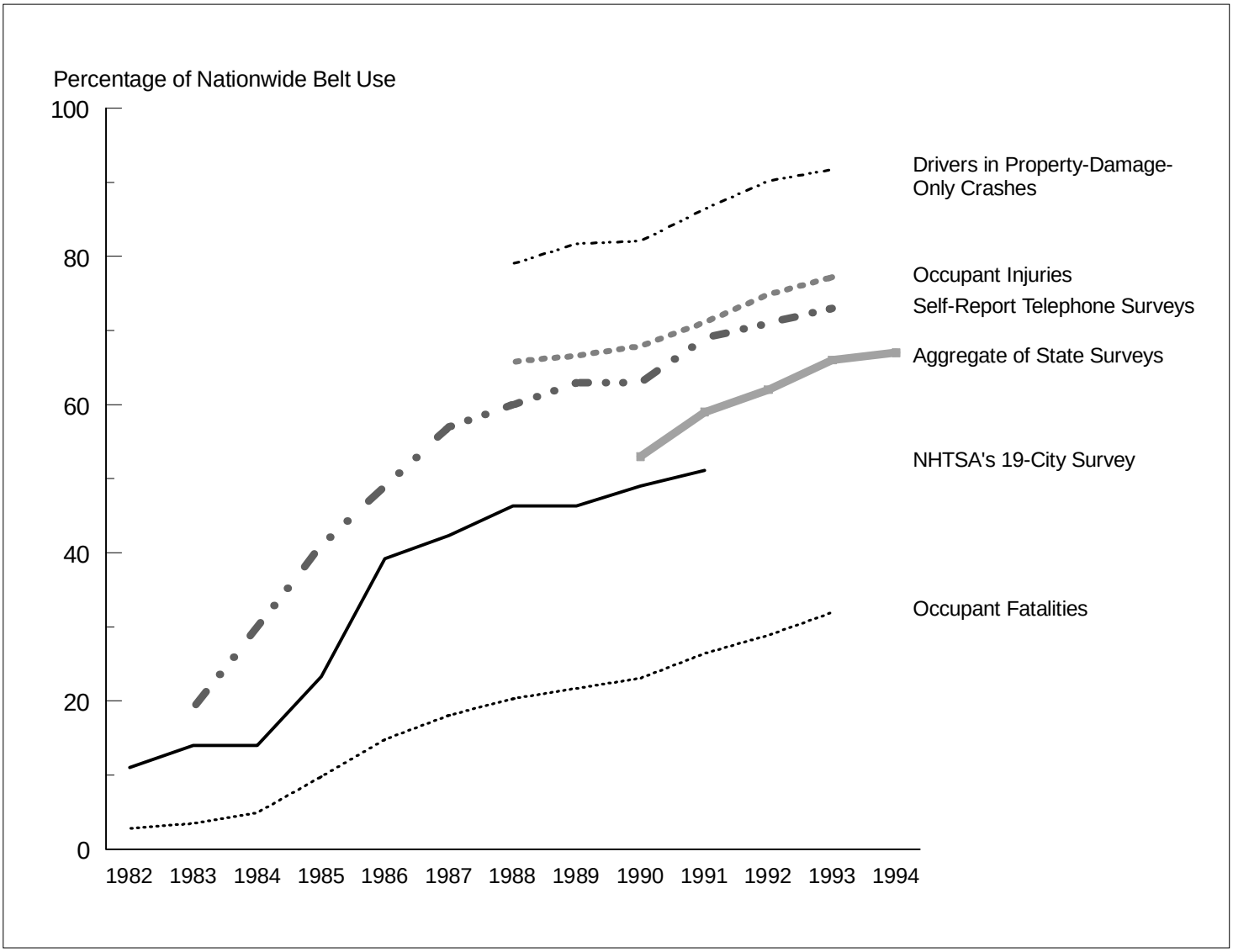


Source: NHTSA. Information for 1983-90 came from an annual NHTSA survey of 19 cities; information for 1991-94 came from the state surveys.

Measures of safety belt use over time have been available from a variety of sources, such as data about the occupants of vehicles involved in crashes, telephone surveys, and surveys of belt use that NHTSA performed until 1991 in 19 cities. For reasons discussed below, the various sources show very different rates of belt use. However, as figure 2.2 shows, all of the data

sources show a substantial increase in belt use since the early 1980s. In addition, the indicators show larger increases during periods of increased federal and state emphasis on safety belt programs.

Figure 2.2: Nationwide Rates of Safety Belt Use



Source: NHTSA.

These other sources show different but not necessarily more reliable use rates than those generally quoted by NHTSA and shown in figure 2.1. From 1982 to 1991, NHTSA used a survey that sampled belt use in 19 cities as an indicator of the nationwide rate of belt use. These surveys were useful for tracking changes in use rates in the particular cities included in the study, but the results from the sample cities could not be statistically extrapolated to metropolitan areas not in the sample or to any nonmetropolitan area. A telephone survey has been conducted almost every year since 1983, and the results show higher belt use than NHTSA has reported. This higher result is understandable because other studies have shown that respondents to telephone surveys tend to report higher use than is actually observed.

Data about the occupants of vehicles involved in crashes indicate belt use rates both higher and lower than NHTSA's two reported estimates, but these different results can be explained logically. NHTSA's Fatal Accident Reporting System (FARS) contains data only from crashes in which someone died. Belt use by the victims in these crashes tends to be low because people who use belts tend to be injured or uninjured rather than killed, so they are more likely to be reported, not in FARS, but in NHTSA's General Estimates System (GES) as involved in a crash resulting in injury or property damage only. In addition, the belt use reported in the GES data is higher because the data generally come from statements made by the vehicles' occupants, who tend to tell police officers that they were complying with belt use laws. This tendency is particularly evident in crashes involving property damage only and no apparent injury.

While the rates of safety belt use from the federal data on crashes are of limited value in estimating belt use nationwide, they can be useful for NHTSA and the states in evaluating the reasonableness of the use rates shown in the state surveys. The results of the state surveys can be expected to be higher than the FARS results and lower than the GES results for each state for the reasons explained above. NHTSA has developed a model that uses FARS data to predict actual belt use, and these results have been compared with the results from state surveys. While the model does not consider all of the relevant differences among the states, NHTSA officials told us that these comparisons of estimates of safety belt use from the state survey data and FARS generally support the reasonableness of the results of the state surveys.

Figure 2.2 also demonstrates the importance of changes in the surveys' methodology and the effects such changes can have on the results of an

analysis. Figure 2.1 shows NHTSA's analysis of nationwide rates of belt use between 1983 and 1994. According to NHTSA, the sources of the information were the 19-city survey from 1983 through 1990 and the state surveys from 1991 through 1994. Figure 2.2 shows that there were 2 years—1990 and 1991—in which the rates from both the 19-city survey and the state surveys were computed. The state surveys, using a different methodology, showed results 4 percentage points higher in 1990 and 8 percentage points higher in 1991 than the 19-city survey showed. As a result, a substantial portion of the 10-percentage point increase shown in figure 2.1 between 1990 and 1991 was caused by the change in the surveys' methodology. Although NHTSA may have used the best available data for those years, the change in methodology is an important factor to consider when analyzing the trend.

67-Percent Belt Use Rate for 1994 Is Not Reliable

NHTSA's estimate of a 67-percent nationwide rate of safety belt use for 1994 is not reliable because the rate is based on state surveys that used different methodologies that do not consistently measure belt use. For example, 22 states surveyed only passenger cars, while 20 states surveyed cars, light trucks, and vans; the other states surveyed two of the three vehicle categories. Five states measured belt use by drivers only, and the others measured use by drivers and occupants of the vehicles' right front seat; no state surveyed belt use by the occupants of the rear seats. The methodologies used for the state surveys also varied in selecting observation locations and in weighting the results. Some states exempted sparsely populated areas from their sampling plans, while others considered all geographic areas eligible for sampling. Also, some states conducted annual surveys, while others did not.

NHTSA estimated the 67-percent nationwide rate of safety belt use for 1994 by using 34 state surveys conducted in 1994, 16 surveys conducted before 1994, and information on belt use from Wyoming's crash data. NHTSA calculated the nationwide use rate by taking each state's most recent rate and weighting the rate by each state's population as a proportion of the total U.S. population. In our opinion, this methodology does not provide a reliable estimate of the nationwide rate of safety belt use because it relies on state surveys that use very different methodologies. NHTSA has acknowledged that the state surveys on safety belt use differ in design. However, NHTSA pointed out that 28 states—representing over 70 percent of the U.S. population—conducted probability-based observational

surveys.[1] Nevertheless, the agency also said that the remaining states conducted surveys in which their observation sites, while usually adequate in number, were not randomly selected. As a result, no confidence intervals[2] can be calculated from these survey results.

In our May 1992 report, we found that statewide data on safety belt use was questionable.[3] NHTSA analysts had told us that the statewide rates of safety belt use provided by the states were generally not based on probability sampling techniques that would provide statistically valid estimates. The states had used a variety of methods that differed in reliability. The states' data on the rate of belt use were particularly important at that time because ISTEA provided for grants to the states on the basis of these rates. Funds were allocated to the states during fiscal years 1992-94 in part on the basis of the rates of safety belt use as measured by the state surveys.

To improve the quality of the data in the state surveys, in June 1992 NHTSA finalized guidelines for state observational surveys of belt use. These guidelines allowed the states substantial latitude in designing and carrying out the surveys. Although the guidelines were very flexible and NHTSA helped the states conform with the guidelines, only 28 states received NHTSA's approval of their survey methodology. NHTSA officials said that some additional states might be performing a survey that either conforms to the guidelines or nearly conforms, but these states did not need NHTSA's approval of their survey plan. Since the grants are no longer available, there is no financial incentive for the states to have their survey plan conform with NHTSA's guidelines.

A NHTSA contractor commented on the use of data from the state surveys for developing a nationwide belt use estimate as follows:[4]

"Available state estimates of safety belt use cannot be used to produce a national estimate. Review of the designs of all states that have conducted state-level surveys of occupant restraint systems has confirmed that results across states are not comparable and cannot be used to produce a national estimate."

[1]A probability-based survey is one in which the units (i.e., vehicles) sampled are chosen with a known likelihood or probability.

[2]A confidence interval is a range around the estimate that is calculated to indicate how closely the result could be reproduced in a complete count of the universe using the same measurement methods.

[3]GAO/RCED-92-106.

[4]National Safety Belt Survey Sample Design: Final Report (Washington Consulting Group, Washington, D.C.: Apr. 15, 1994).

We agree with the contractor's comments. However, NHTSA officials said that the lack of consistency among the state surveys does not preclude using the surveys to develop a reasonable annual estimate of belt use nationwide. They also said that it was important for states to continue to perform surveys so that each state can identify trends and specific local problems with belt use.

NHTSA's Most Recent Survey Reveals 58-Percent Rate of Belt Use

Recognizing that the data from the state surveys were limited in scope, NHTSA in 1994 conducted a special national analysis—the National Occupant Protection Use Survey (NOPUS). Data were collected by observing traffic at about 4,000 randomly selected sites in 25 states during October, November, and December 1994. NOPUS was used to estimate the nationwide rate of belt use and to obtain detailed data on (1) belt use by vehicle type and the occupant's age and gender and (2) the misuse of belts.

The initial results from NOPUS were released by NHTSA in early 1995 and showed an overall nationwide rate of safety belt use of 58 percent for 1994. These results indicate, among other things, that the drivers tend to use safety belts more frequently than the passengers in the right front seat and that belt use is higher in the western United States than in the rest of the country. The NOPUS' breakout by vehicle type showed an overall rate of 63-percent belt use for the occupants of passenger cars and a 50-percent rate of use for the occupants of light trucks.[5] This breakout for light trucks is particularly important because these vehicles make up about 40 percent of the new vehicles sold. NHTSA recently estimated that annually 3,600 occupants of light trucks die and 54,000 are injured because they do not use safety belts.[6] This disparity in belt use rates between the occupants of passenger cars and light trucks indicates that special emphasis and targeted programs may be needed to increase belt use in light trucks. Part of the disparity could relate to the fact, discussed in chapter 4, that several states' laws on belt use do not cover the occupants of light trucks.

NHTSA officials believe that NOPUS' findings generally support the estimates of the nationwide rate of belt use calculated from the state surveys but agree that comparing the rates in the NOPUS and the state surveys is difficult. NHTSA plans to conduct another NOPUS survey if funds become

[5]In our May 1992 report on safety belts, we mentioned this disparity in safety belt use between the occupants of passenger cars and light trucks. The recent NOPUS data on the disparity support the limited data that were available at the time of our report.

[6]Estimating the Benefits From Increased Safety Belt Use, NHTSA Office of Regulatory Analysis, Plans and Policy, June 1994.

available, but the agency plans to continue using the state surveys to annually estimate the nationwide rate of belt use. The 67-percent weighted average from the state surveys and the 58-percent rate from NOPUS both fall within the range of estimates of belt use based on other data. Both estimates reveal that substantial progress must be made if DOT's goal of 75-percent belt use by 1997 is to be achieved.

Conclusions

Safety belt use increased from 11 percent in 1982 to a reported 67 percent in 1994. Much of the increase resulted from the adoption of laws mandating safety belt use by 48 states and the District of Columbia. Increases in belt use can also be noted during the years in which federal funds were provided to the states for improving their safety belt programs. Belt use in light trucks and vans has remained relatively low. These vehicles are not covered by federal law or by the laws of several states.

NHTSA has recognized that individual state surveys do not measure belt use consistently. NHTSA could improve the guidelines for the state surveys, but the effect of such improvements could be minimal since the state laws vary significantly and NHTSA does not offer financial incentives to encourage the states to improve their surveys. Given NHTSA's two reported nationwide rates of belt use—67 or 58 percent—significant progress must be made if the nation is to achieve DOT's goal of a rate of 75-percent use of safety belts by 1997.

Primary Enforcement Laws and Aggressive Enforcement Are Key to Increased Belt Use

The states that are most successful in increasing safety belt use have comprehensive programs that include primary enforcement laws, visible and aggressive enforcement, and vigorous public information and education programs. Primary enforcement laws allow law enforcement officials to stop and ticket a vehicle's occupants solely for not using their safety belts. Ten states currently have safety belt use laws allowing primary enforcement, while 39 states including the District of Columbia have laws allowing for only secondary enforcement. NHTSA estimated that the rates of belt use in the states with primary enforcement laws were 15 percentage points higher in 1994 than the rates in the states with secondary enforcement laws.

Successful State Safety Belt Programs Contain Several Components

The states' laws on safety belt use differ widely in enforcement, coverage, and fines, but the most successful programs share several common key components. Appendix I shows the 1994 rates of safety belt use that the states reported to NHTSA, as well as some information about the belt laws in each state. As reported by the states, the rates of belt use in 1994 ranged from a low of 32 percent to a high of 84 percent; four states reported rates of over 80-percent belt use, while five reported rates of less than 50-percent use.

To understand the key components of a successful safety belt program and how they work together to increase belt use, we visited 10 states and their respective NHTSA regional office. As shown in table 3.1, the 10 states we visited included 3 states with primary enforcement laws, 6 states with secondary enforcement laws, and 1 state with no law.

Table 3.1: State Laws and Reported Belt Use Rates for 10 States

State	Effective date[a]	Seats	Primary vehicles covered	Fine	Use rate
States with primary enforcement laws (3)					
California	1/1/86	All	Passenger cars, vans, and small trucks	$20	83%
North Carolina	10/1/85	Front	Passenger vehicles for under 11 passengers	$25	81%
New York	12/1/84	Front	Motor vehicles except for special use	$50	72%
States with secondary enforcement laws (6)					
Maryland	7/1/86	Front	Passenger/ multipurpose vehicle, bus, truck, and tractor	$25	69%
New Jersey	3/1/85	Front	Passenger automobiles	$20	64%
South Carolina	7/1/89	Front	Passenger cars, trucks, vans, and recreational vehicles	$10	64%
Idaho	7/1/86	Front	Motor vehicle weighing under 8,000 pounds	$5	61%
Colorado	7/1/87	Front	Passenger cars, vans, recreational vehicles, and small trucks	$15	54%
Mississippi	3/20/90	Front	Motor vehicles for under 11 passengers	$25	43%
State with no safety belt law (1)					
New Hampshire	N/A[b]	N/A	N/A	N/A	54%

[a]Date first law mandating safety belt use became effective.

[b]N/A = not applicable.

Source: NHTSA and state highway safety programs.

Officials in each NHTSA regional office and state we visited stressed that primary enforcement laws were the best way to increase safety belt use but that the other components were needed to maintain that rate of increase. They also stated that in the absence of a primary enforcement law, the most effective way to increase safety belt use was a secondary enforcement law combined with active community involvement in law enforcement and public education and information activities aimed at increasing the use of safety belts. Figure 3.1 shows that the 3 states with

primary enforcement laws we visited significantly increased belt use after adopting such a law. Of the 10 states we visited, the average belt use of the 3 states with primary enforcement was about 20 percentage points higher than the average belt use of the 6 states with secondary enforcement.

Figure 3.1: Trends in Safety Belt Use for Three States With Primary Enforcement Laws

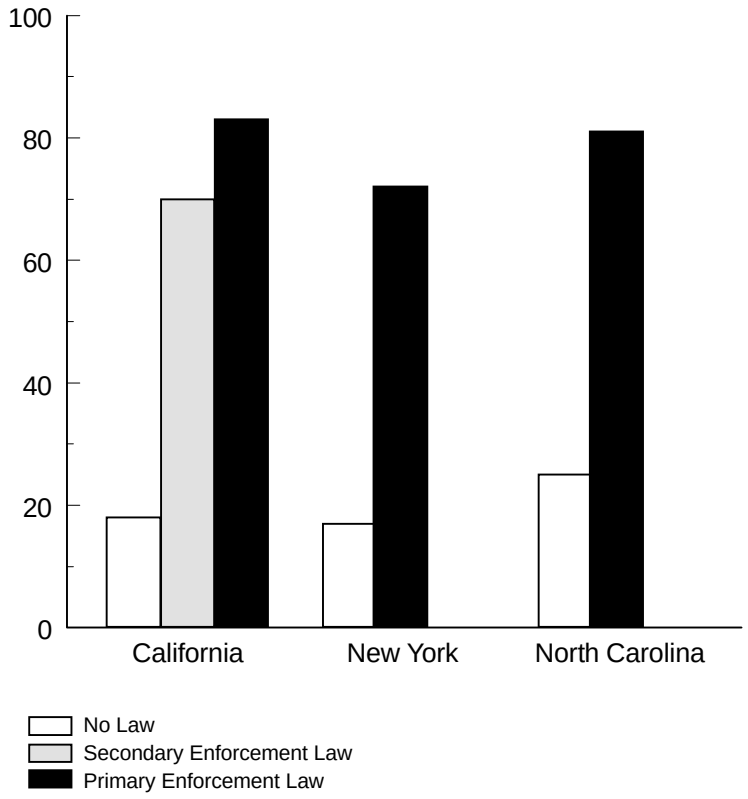
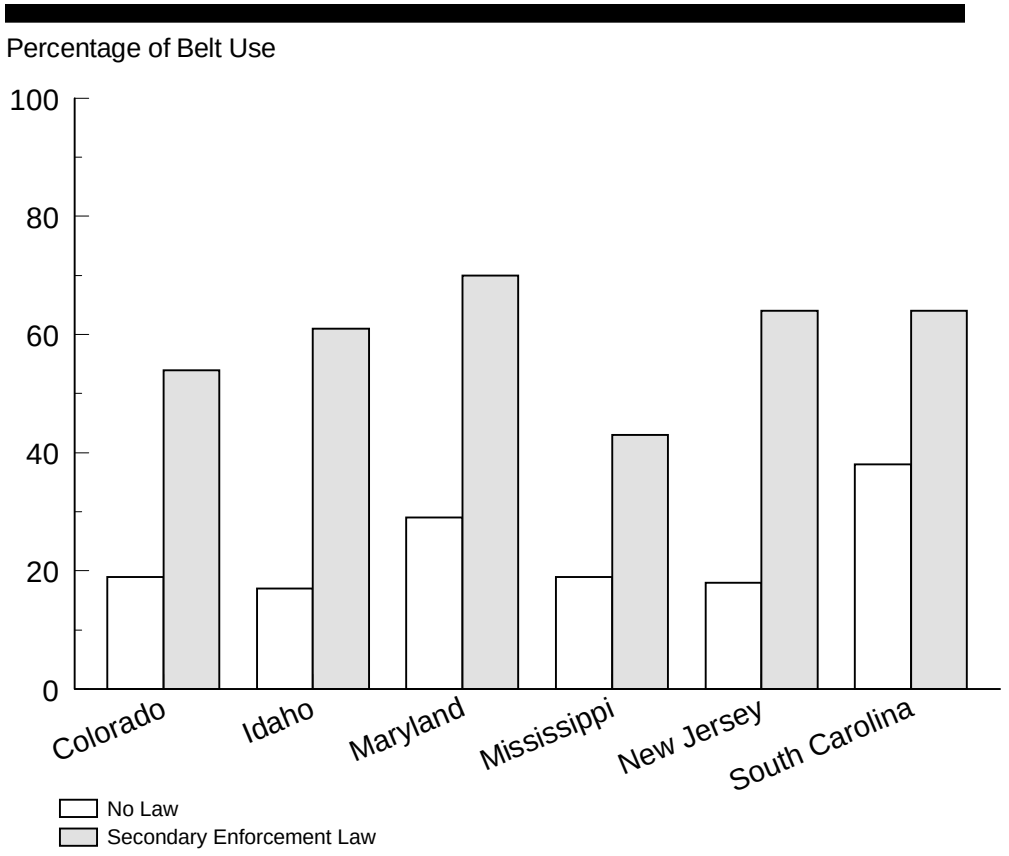


Figure 3.2 shows that the six states with secondary enforcement laws we visited experienced increases in safety belt use after adopting such a law. However, the two figures together show that the overall rates of belt use for the states with secondary enforcement are much lower than the rates of the states with primary enforcement.

Figure 3.2: Trends in Safety Belt Use for Six States With Secondary Enforcement Laws



Primary Enforcement Laws Are Key to Increasing Safety Belt Use

States with primary enforcement laws have been the most successful in increasing safety belt use. This success is the result of law enforcement officers stopping and assessing fines to a vehicle's occupants solely for not using their safety belts. Officials of state safety belt programs work with law enforcement agencies to encourage enforcement and also to help educate and inform the public about the law and the consequences of noncompliance. According to state officials, one of the most successful ways to reach the public is by involving community groups in programs aimed at increasing safety belt use.

The ability of primary enforcement laws to increase safety belt use is best illustrated by California's upgrade of its law mandating safety belt use from a secondary enforcement law to a primary enforcement law. In November 1992, California reported a rate of safety belt use of 70 percent. At that time, California's secondary enforcement law had been in place for

about 7 years. On January 1, 1993, California implemented a primary enforcement law, resulting in an increase in safety belt use of 13 percentage points for a statewide rate of 83 percent in late 1993, according to the results of a state survey. California officials actively publicized this change in the law. A survey of some California drivers conducted during March through September 1993 found that 90 percent of those surveyed knew that they could be stopped for violating a belt law alone and 75 percent felt that the law was being strictly enforced. California increased only slightly the number of citations issued during this period. Therefore, NHTSA officials believe that the change to a primary enforcement law is the primary reason for the significant increase in belt use.

Primary enforcement laws increase safety belt use, but sustained and increased safety belt use can be better achieved when these laws are supported with enforcement and public education and information activities. North Carolina provides an example of how these activities, when associated with a primary enforcement law, can dramatically increase safety belt use. Before implementing its primary enforcement law in October 1985, North Carolina had a rate of safety belt use of 24 percent. During a 15-month period when only warnings were issued to violators, the reported rates of safety belt use ranged from 41 to 49 percent. On January 1, 1987, citations began to be issued for not using a belt, and the reported rate of belt use quickly increased to 78 percent. However, after a few years, state surveys showed that the rate of belt use had dropped back to 60 percent.

In September 1993, North Carolina embarked on a multiyear campaign—"Click It or Ticket"—to further increase safety belt use and reduce related injuries and fatalities. This intensive enforcement and publicity campaign is credited with increasing North Carolina's reported rate of safety belt use by 15 percentage points in 3 months—65 to 80 percent—and with achieving North Carolina's current rate of 81 percent. The campaign featured increased and highly visible enforcement through the use of safety belt checkpoints. These activities were publicized locally, and the message provided to the public was that activities to enforce the safety belt law were the major focus of local law enforcement agencies during the first 4 weeks of the program. This highly visible program was also directly endorsed by North Carolina's governor, who cited the high costs society pays for individuals who do not use their safety belts. State officials report that in its first 6 months, the "Click It or Ticket" campaign

saved 45 lives, prevented 320 disabling injuries, and saved more than $51 million in health care and other costs.

New York has also used enforcement and public education and information activities to sustain and increase the rate of safety belt use that the state achieved after it passed the nation's first law mandating safety belt use on December 1, 1984. Before the passage of this law, New York's rate of safety belt use was estimated to be 16 percent. Within 6 months, the state's reported rate of belt use increased to 57 percent. New York now reports a belt use rate of 72 percent. This gain was primarily due to the emphasis placed on enforcing the law through police training and an increase in the number of citations issued. New York has also used public information campaigns and special workshops on restraints for children. NHTSA officials told us that the state's ability to continue to positively affect the rate of safety belt use results from their emphasis on establishing and incorporating community-based networks into programs to improve traffic safety.

Secondary Enforcement Laws Can Increase Safety Belt Use

States with secondary enforcement laws are also successful in increasing safety belt use, but their success is limited by the difficulty in effectively enforcing the law. Today, 38 states and the District of Columbia have secondary enforcement laws, which allow a vehicle's occupants to be ticketed for not using safety belts after they have been stopped for another violation. The success of secondary enforcement laws depends on how well the states work with law enforcement agencies to encourage enforcement and reach out to community members to educate and inform them about the laws and the importance of using safety belts. The states' efforts to strengthen laws on restraints for children also contribute to increasing adults' use of safety belts.

For the six states with secondary enforcement laws that we visited, the laws contributed greatly to increasing the rates of safety belt use. Also important were aggressive enforcement and public education and information activities. For example, Idaho was able to increase its reported rate of belt use by 24 percentage points—from 35 percent in June 1990 to 59 percent in September 1993—through an increased emphasis on education and enforcement at the local level. Idaho used some of its highway safety funds to provide grants to the local law enforcement agencies that administered these programs. These agencies provided the community with information and education on safety belts and child restraints, and trained law enforcement officers on the use of

restraints and the need for increased enforcement. To receive these grants, the enforcement agencies were required to have a policy of writing one safety belt citation for every five citations for hazardous violations. This approach greatly increased the number of citations issued for safety belt violations and resulted in a statewide rate of belt use of 61 percent in 1994.

New Jersey was also able to increase its rate of safety belt use substantially through increased enforcement activities. From 1990 to 1991, New Jersey doubled the number of safety belt citations issued, resulting in a reported increase of 18 percentage points—from 50 percent to 68 percent—in its rate of safety belt use. New Jersey also was very active in public information and education, including a "101 Days of Summer" publicity campaign that emphasized why it was important to use safety belts and activities connected with "Buckle Up America Week." New Jersey's safety officials are attempting to upgrade the state's safety belt law to a primary enforcement law because they believe this change could immediately increase the state's rate of safety belt use by up to 12 percentage points. New Jersey reported a current rate of safety belt use of 64 percent.

Other states with secondary enforcement laws we visited have not experienced the level of increase in use rates that Idaho and New Jersey have. Colorado, for example, reported an increase in its use rate to 51 percent from 18 percent when it implemented its law on July 1, 1987, but has not been able to make substantial progress since that time. As of January 1995, Colorado reported a use rate of 54 percent. However, the state believes its rate will likely increase as its many activities are implemented. For example, the state is training law enforcement officers to enforce the safety belt law and is conducting a "Drive Smart Colorado" campaign that assists community leaders in developing strategies and programs to ensure the safety of the traveling public. Also, Colorado recently amended its law on restraints for children to increase the age of the children covered by the law from 4 to 16.

New Hampshire, which has no law on mandatory belt use, shows how having a law on restraints for children and aggressive public information and education about that law can contribute to increased adult use of safety belts. In 1984, New Hampshire found that only 16 percent of drivers were using safety belts. Since then, the largest reported annual increase in New Hampshire's rate of safety belt use by adults—from 37 percent in 1988 to 50 percent in 1989—coincided with an increase in the age of the children covered by the law on restraints for children from up to age 4 to

up to age 12.[1] This change in the law provided New Hampshire with the opportunity to educate and inform the public about the child restraint law and the consequences of not using safety belts and then being involved in a traffic accident. In September 1994, New Hampshire reported a rate of safety belt use by adults of 54 percent. State officials said that this latest increase can be attributed to another change in the child restraint law (effective Jan. 1, 1994), which requires children up to age 4 to be restrained in a proper restraint system—a car seat.

Conclusions

The states that are most successful in increasing their rates of safety belt use have comprehensive programs that include mandatory primary enforcement laws that are visibly and aggressively enforced. These states also actively educate and inform the public about the laws, their benefits, and the consequences of noncompliance. Those states that do not have mandatory safety belt laws involving primary enforcement can also achieve increased safety belt use through increased enforcement of their secondary enforcement laws and through effective efforts to educate and inform the public. However, given the benefits in increased use rates that primary enforcement laws provide, the effectiveness of the state programs that are currently based on secondary enforcement laws could be dramatically increased through the implementation of primary enforcement laws, assuming the other program elements are continued.

[1]The Insurance Institute for Highway Safety has been critical of New Hampshire's methodology for measuring safety belt use. The Institute believes that the state's reported use rate is higher than the actual rate of belt use because of an alleged bias in the state's sampling criteria for the site survey.

Federal Strategies for Increasing Safety Belt Use

Stronger state laws on safety belt use could increase the rates of belt use, annually preventing thousands of deaths and serious injuries and saving up to $20 billion. Various studies have shown that the public pays for most of the costs resulting from not using safety belts through higher taxes and insurance premiums. While various federal actions could be taken to increase safety belt use, an effective strategy would encourage the states to have comprehensive programs, including primary enforcement laws with aggressive enforcement, coverage of all occupants in vehicles with belts installed, fines that discourage noncompliance, and public education. The current federal policy, contained in ISTEA, encourages the states to have a law mandating safety belt use that covers occupants of passenger cars' front seats. ISTEA does not specify a primary or secondary enforcement law and does not require occupants of passenger cars' rear seats or any occupants of light trucks and vans to use safety belts.

Nonuse of Safety Belts Generates Large Costs to Society

In June 1994, NHTSA reported[1] that the nonuse of safety belts by occupants of passenger cars results in about 6,200 deaths and 150,000 moderate to critical injuries each year. Additionally, 3,600 occupants of light trucks and multipurpose vehicles die and 54,000 are injured unnecessarily because they do not use safety belts. NHTSA estimated that these deaths and injuries cost society $20 billion annually in medical costs, lost productivity, and other injury-related expenses. Most of these costs are borne by society in the form of tax-supported programs and insurance premiums.

In response to a mandate in ISTEA,[2] NHTSA analyzed data from seven states to determine the benefits of medical care for crash victims and who pays for that care. This Crash Outcome Data Evaluation System (CODES) project linked statewide data from police reports on motor vehicle crashes with computerized data from emergency medical services, hospital emergency departments, hospital discharges, and other activities so that the costs of the medical treatment of people injured in traffic crashes could be tracked. CODES obtained data on about 880,000 vehicle drivers for various periods between 1990 and 1992 in the seven states. The final report is expected to be provided to the Congress in February 1996.

[1]Estimating the Benefits From Increased Safety Belt Use, DOT, NHTSA, Office of Regulatory Analysis Plans and Policy (June 1994).

[2]NHTSA has prepared a draft report entitled Report to Congress on the Benefits of Safety Belts and Motorcycle Helmets Based on Data from CODES—The Crash Outcome Data Evaluation System. The draft includes an analysis of data from seven states.

The preliminary data from CODES indicates there is a direct relationship between safety belt use and the medical costs resulting from traffic crashes. The average charges for all drivers (including those not hospitalized) in the CODES study who were involved in crashes was $562 for those not using safety belts and $110 for those using belts. Thus, those drivers using safety belts averaged 80 percent lower charges. For crash victims who were actually admitted to hospitals, the average charges were $13,937 for those not using safety belts and $9,004 for those using belts, which indicates a 35-percent reduction in hospital charges when safety belts were used.

The data from CODES are consistent with the data from other studies. Our May 1992 report on the effectiveness of safety belts presented the results from eight studies containing data on the effectiveness of safety belts in reducing hospital charges. All the studies showed that hospital costs were lower for the vehicle occupants using safety belts than for the occupants not using belts. The victims who used belts had average hospital costs that were from 27 to 87 percent lower than those of the victims who did not use belts; most of the studies showed costs between 60 and 80 percent lower. Stated another way, most of the studies showed the hospital costs for the crash victims who did not use belts to be 2-1/2 to 5 times the cost for the victims who used belts. The studies also provided data showing that safety belts reduce other costs related to injuries in traffic crashes, such as ambulance costs or insurance claims costs for personal injury. While the studies discussed in that report indicated a higher rate of temporary and permanent disability for the victims who did not use belts, the data on such long-term effects were generally not available. Unfortunately, none of the studies captured information on the level of income replacement resulting from providing disability or welfare benefits to victims who did or did not use belts.

CODES and other studies have shown that society pays a large part of the costs of medical treatment for those injured in traffic crashes. Preliminary data from CODES show that the public paid 16 percent of these costs through such programs as Medicare and Medicaid. About 69 percent was paid by private insurance, which spread the cost to all who pay insurance premiums. At the time the victims were discharged from the hospital, only 15 percent of the charges were classified as paid by others, generally “self payers.” NHTSA pointed out in its draft report that these self payers often are unable to pay their bills, and the cost of providing this care is ultimately passed on through higher charges for those who do pay.

CODES data show that the general public may pay a larger portion of the costs than some of the earlier data showed. NHTSA published a report in January 1992 that used data from five states to estimate the costs of hospital care for people injured in motor vehicle crashes in 1990 and the sources of payment of those costs.[3] Those data show that 29 percent was paid by government sources, 52 percent by insurance, and 19 percent by others. Five studies of hospital costs that we reviewed for our May 1992 report[4] also collected data on medical payments for crash victims. Among the victims who did not use belts, from 8 to 28 percent were covered by Medicare or Medicaid, from 41 to 55 percent were covered by insurance, and the remaining 22 to 49 percent were considered self payers. Some costs not covered by public programs or insurance ultimately will not be paid by the injured person or the person's family, so a portion of the costs to self payers will be paid by other sources of funding for the hospitals.

Federal Efforts Have Increased Belt Use, but State Laws Are Not Comprehensive

The federal government has recognized the benefits of safety belts and has been requiring their installation and encouraging their use since the mid-1960s. Federal efforts have been effective in encouraging the states to enact basic laws on mandatory safety belt use. NHTSA has not been successful, however, in encouraging the majority of states to enact a primary enforcement law that covers occupants in all types of motor vehicles that have belts installed.

NHTSA has encouraged the states to enact a law mandating safety belt use and has distributed material for the states and others to use in urging the public to use safety belts. NHTSA has also initiated national campaigns for public information and awareness and has assisted in state and local campaigns to increase safety belt use. In addition, the states receive federal funding to help them implement highway safety programs. About $170 million was requested for fiscal year 1996 for assistance to the states under the federal highway safety program. DOT encourages the states to use the funds in support of program areas that are national priorities. The Secretary of Transportation has established a goal of a nationwide rate of 75-percent belt use by 1997, in place of an earlier goal of 70-percent use by 1992. NHTSA has worked with the states and local agencies to achieve these goals.

[3]Joan S. Harris, Source of Payment for the Medical Cost of Motor Vehicle Injuries in the United States, 1990, DOT HS 807 800, U.S. DOT, National Highway Traffic Safety Administration (Jan. 1992).

[4]GAO/RCED-92-106.

NHTSA's primary focus in increasing safety belt use has been through encouraging states to enact stronger laws and through related efforts in enforcement and public education. Officials in the states we visited told us that NHTSA's assistance has helped them develop safety belt programs at the state and local levels. They also said that the federal funds have been an important element in state and local activities for education and enforcement. To varying degrees, the states have used NHTSA's public information materials and have joined in the federal promotional campaigns.

NHTSA has encouraged the states to strengthen their safety belt laws. However, most state laws provide for secondary enforcement and minimal fines for violations, cover only occupants of the vehicles' front seat, and often exempt the occupants of light trucks. Our May 1992 report concluded that stronger and more comprehensive laws were needed and that society could save billions of dollars annually through increased safety belt use. As discussed in chapter 3 of this report, the most effective state laws have strong enforcement provisions and cover all occupants of passenger cars, light trucks, and vans. Since our 1992 report, nine states have enacted new laws on belt use, but these laws are similar to the earlier laws—generally providing for secondary enforcement and relatively low fines. Overall, little progress has been made recently in getting the states to adopt stronger and more comprehensive safety belt laws.

As table 4.1 shows, most state laws cover the occupants of the front seat only, and some exempt the occupants of light trucks and/or vans. Ten states provide for primary enforcement, and 39 states (including the District of Columbia) provide for secondary enforcement. Only 11 state laws cover the occupants of rear seats, and 7 state laws exempt the occupants of light trucks and vans. Only 4 states assess fines for violations of belt use laws that exceed $25, and 13 states assess fines of $10 or less, including 2 states that do not assess any fine.

Table 4.1: Examples of Differences in States' Safety Belt Laws

Requirements	Number of states
Coverage	
Only occupants of front seat	38
All occupants	11
Light trucks and/or vans exempted	7
Enforcement	
Primary	10
Secondary	39
Fines	
Over $25	4
$11 to $25	32
$10 or less	13

Source: NHTSA's data (see app.I).

Although 49 states (including the District of Columbia) now have laws on safety belt use, compared with 42 in 1991, the laws could be stronger and more comprehensive. Ten states have primary enforcement laws—the same number as in 1991. While California and Louisiana have enacted a primary enforcement law since 1991, Mississippi and Wisconsin have changed from primary to secondary enforcement.[5] The states' fines for violating belt use laws have changed little since 1991, and most are so low that they have little influence on motivating nonusers of belts to buckle up.

NHTSA has recognized the value of stronger state laws and has worked with the states on these issues but has not developed for use by the states a model law on mandatory safety belt use that requires primary enforcement, coverage of all occupants in vehicles that have belts installed, and fines sufficient to encourage belt use. Instead, NHTSA has encouraged the states to establish their own safety belt goals, pass stronger laws, and design and improve safety belt programs, and has supported education and media campaigns to increase awareness about safety belts. As part of NHTSA's fiscal year 1996 appropriations process, the report of the House Committee on Appropriations states that

"the Committee believes that more aggressive action needs to be taken to achieve a 75 percent seat belt usage rate by 1997. Specifically, the Committee directs NHTSA to develop and distribute it to all states a model seat belt use law as part of its 1996 program."

[5]Louisiana's primary enforcement law became effective in September 1995, and fines for noncompliance begin in November 1995. Although Mississippi has changed from primary to secondary enforcement, the state now provides for a fine for violations of its belt law, which it did not do before.

The National Transportation Safety Board (NTSB) in July 1995 urged state governments to adopt stricter methods of enforcing safety belt laws and to consider tougher penalties for drivers and passengers who do not use them. Citing the effectiveness of stronger laws, NTSB has recommended that the states:

"Enact legislation that provides for primary enforcement of mandatory safety belt use laws. Consider provisions such as adequate fine levels and the imposition of driver license penalty points."

NTSB sent its recommendations to all the states with a secondary enforcement law and those without safety belt laws, asking the states to report any actions taken on its recommendations.

Federal Legislation Could Encourage Stronger State Safety Belt Laws

Our May 1992 report discussed the relevant provisions of ISTEA and stated that "the act's provisions may do little to encourage states to strengthen their existing laws." The grants established by ISTEA to encourage belt use were available for a 3-year period—1992-94—and did not require strong state laws as a condition of receiving the grants. The penalty provision transfers the fiscal year 1995 funds of the states that have no safety belt law as of October 1, 1993. This provision transfers up to 3 percent of a state's federal-aid highway funds to the state's highway safety programs. Under current law, in 1996 only Maine and New Hampshire will be subject to the safety belt penalty, which is estimated at about $1.6 million for each state.

ISTEA requires the states to have laws on mandatory safety belt use to avoid the penalty, but it does not require primary enforcement or state fines for nonuse of belts. Also, the act applies only to the occupants of passenger vehicles' front seats and defines passenger vehicles to exclude vehicles constructed on a truck chassis. As a result, state laws do not have to include the occupants of passenger cars' rear seats or any occupants of pickup trucks or many vans, even though over 10,000 occupants of such vehicles die each year in crashes.

While the number of deaths resulting from crashes of light trucks and vans might be sufficient reason for focusing greater attention on increasing belt use in these vehicles, other data also point to this need. Recent data on crashes show that occupants killed in light trucks were ejected at twice the rate of occupants of passenger cars. NHTSA officials told us that safety belts are very successful in preventing such ejections. NHTSA estimated that

annually 3,600 occupants of light trucks die and 54,000 are injured because they do not use safety belts. Also, a 1994 national survey of belt use showed an overall rate of 63-percent use for occupants of passenger cars and 50 percent for occupants of light trucks.[6] The disparities between the use rates in cars and light trucks indicate that special emphasis and targeted programs are needed to increase belt use by the occupants of light trucks. NHTSA currently does not have such emphasis or programs.

Federal Role in Encouraging Safety Belt Use

NHTSA officials told us that they have limited authority to encourage the states to enact stronger safety belt laws—primary enforcement, higher fines for nonuse, and coverage for all occupants of vehicles. Additionally, NHTSA officials told us that the current political environment that favors local and state initiatives over federal efforts has further reduced the agency's ability to influence state and local activities.

The state officials we interviewed reflected the attitude that the states welcome federal funds but not federal requirements or advice. They told us that the states still want federal funds for their programs but do not want any federal influence on how the funds are spent. They generally agreed that federal financial and technical assistance have helped them increase belt use, thereby reducing deaths, injuries, and the related costs to society. Several said that the positive changes might not have occurred without NHTSA's influence and the conditions under which the states could accept federal funds under ISTEA.

While NHTSA's focus has been on encouraging the states to enact and enforce laws on safety belt use, other federal agencies have required, through federal regulations and an executive order, that certain occupants of vehicles use safety belts. The Federal Aviation Administration requires each occupant over 2 years old in an airplane to use safety belts during takeoff and landing.[7] Likewise, the Federal Highway Administration requires commercial drivers of interstate trucks and buses to use safety belts.[8] Furthermore, Executive Order 12566, issued in September 1986, requires federal employees to use safety belts when driving on official duty. Federal efforts have been effective in encouraging federal employees to use safety belts in motor vehicles. For example, 48 federal organizations

[6]In our May 1992 report, we mentioned this disparity in safety belt use between the occupants of passenger cars and light trucks. The recent data on this disparity support the limited data that were available at the time of that report.

[7]14 C.F.R. 121.311.

[8]49 C.F.R. 392.16.

reported a rate of at least 90-percent belt use during 1993 based on observational surveys.

Although federal and state officials often disagree on the roles that federal and state agencies should play in traffic safety, several recent polls indicate general public acceptance of laws on mandatory safety belt use. A recent nationwide public opinion poll of 1,000 people by McKeon and Associates found strong support for safety belt laws. A large majority opposed any weakening or repeal of the laws. These results support findings in individual states. For example, California reported widespread public knowledge about and compliance with the state's recent primary enforcement law. Also, a poll conducted in 1994 for South Carolina found that 88 percent of the state's residents supported the state's law on mandatory safety belt use.

Canadian Safety Belt Laws Are Strong and Very Successful

Safety belt use laws and programs in Canada have been very effective in achieving a high rate of belt use. As of mid-1994, Canada reported that its nationwide rate of belt use was about 90 percent in passenger cars and 88 percent in all vehicles, including vans and light trucks. Five of the 12 Canadian jurisdictions reported rates of belt use over 90 percent. Only one jurisdiction reported a use rate lower than 75 percent. In comparison, NHTSA estimates that the rate of safety belt use in the United States in 1994 averaged either 58 percent or 67 percent, depending on the methodology used.

Laws mandating safety belt use were enacted in all 12 Canadian jurisdictions between 1976 and 1992; most were enacted during the 1980s. All the jurisdictions' laws require primary enforcement (compared with 20 percent of the states in the United States), and all the laws cover occupants of light trucks and vans. Fines for noncompliance are generally higher in Canada than those in the states, and five Canadian jurisdictions provide for demerit points against driver's licenses for violating belt use laws. In contrast, no U.S. state requires demerit points for such violations. Four states, however, provide demerit points for violating laws on restraints for children.

Canada's success with safety belts appears to result in large part from designating increased belt use as a top national priority. Safety belt use in Canada had leveled off at about 75 percent between 1987 and 1989. In 1989, Canadian officials endorsed the recommendation "to have each jurisdiction set itself the goal of reaching a seat belt use rate of 95% for all

occupants by 1995." The Canadian Council of Motor Transport Administrators developed a strategy, known as the National Occupant Restraint Program (NORP), to assist the jurisdictions in reaching the goal of 95-percent. NORP involved a 6-year strategy in two phases. Phase I was a short-term strategy during late 1989 and all of 1990 that included centralizing the development of training and briefing materials and the delivery of those materials through coordinating committees in each jurisdiction. Phase II, covering 1991-95, involved coordinating, in each jurisdiction, intensive campaigns for enforcement and awareness as well as efforts to reduce the number of exemptions from the laws on safety belt use.[9]

The province of Newfoundland's experience illustrates how the Canadian strategy has worked. The province enacted its law on mandatory safety belt use in 1982. In 1989, the rate of belt use was observed to be 64 percent. In 1990, Newfoundland adopted demerit points for violations of the law, and belt use increased to 84 percent. The demerit system assesses 2 points for most driving infractions, including nonuse of belts, and the accumulation of 12 points in a 2-year period results in suspension of the license. As public awareness campaigns and enforcement programs continued in 1991, belt use increased to 91 percent. One of the strategies recommended by NORP was the issuance of at least 4,000 citations for safety belt violations per year per million population; the rate for 1991 in Newfoundland was 12,525. In 1992, Newfoundland removed many of the exemptions in its belt use law, and the rate of use reached almost 95 percent. The rate remained above 95 percent during 1993 and 1994. This high level of belt use was maintained despite a decrease in the number of citations issued per million population from 12,525 in 1991 to 507 in 1993. A Canadian official said the public has been motivated more by the demerit points provided by the law than by the $45 fine.

Conclusions

The Congress faces difficult decisions in balancing the federal and state roles concerning safety belts while reducing deaths, injuries, and the costs to society. Increases in the rate of belt use can still be made in many states through better enforcement of existing laws, but the larger increases are likely to be achieved through stronger and more comprehensive state laws on belt use. Stronger state laws could help reduce the thousands of deaths and serious injuries and save up to $20 billion in costs annually because

[9]Belt use laws in some Canadian jurisdictions include exemptions for people with certain medical conditions, police transporting someone in custody, persons held in custody by the police, ambulance attendants while treating patients, delivery route drivers making frequent stops and traveling under 40 km/hr, and taxicab drivers.

safety belts are not used. The general public, through higher taxes and insurance premiums, pays most of the medical costs for those who fail to use safety belts. The large number of deaths and injuries and the costs to society for nonuse of safety belts will likely continue unless the states adopt stronger and more comprehensive safety belt laws.

Federal strategies can be improved in a variety of ways. The House Committee on Appropriations recently directed NHTSA to develop and distribute to the states in 1996 a model safety belt law in order to more aggressively encourage nationwide use of safety belts. States could be encouraged to implement comprehensive safety belt programs that provide for

- primary rather than secondary enforcement;
- coverage of all of the occupants in all of the vehicles in which belts are installed, including the occupants of passenger cars' rear seats and the occupants of light trucks and vans; and
- aggressive enforcement and higher fines/penalties to encourage belt use.

Strong federal involvement has the advantage of facilitating the nationwide implementation of comprehensive strategies that have proven to be successful in the states in increasing belt use and reducing deaths, injuries, and the costs to society. A disadvantage is that the states would have less authority to structure their own programs.

NHTSA has reported that the rate of belt use by the occupants of light trucks is only 50 percent. Considering that light trucks now constitute about 40 percent of the new vehicles sold and are increasingly being used to transport passengers, deaths, injuries, and costs could be avoided by giving special attention to increasing belt use by the occupants of these vehicles.

Matter for Congressional Consideration

Increased seat belt use has the potential to avoid thousands of deaths and serious injuries and save billions of dollars in medical costs, lost productivity, and other expenses resulting annually from the nonuse of safety belts. The federal government's role in encouraging safety belt use is ultimately a policy decision for the U.S. Congress. Current federal legislation provides for both grants and penalties to encourage the states to enact safety belt laws or improve enforcement of existing laws. Comprehensive programs that include primary enforcement laws, aggressive enforcement, and vigorous public education offer the best

opportunity for increasing belt use. If the Congress wants to promote this type of program nationwide, it could encourage the states to adopt a primary enforcement law that covers all occupants in all vehicles in which belts are installed. Those states that do not enact such a comprehensive law could continue to be subject to the provision in the Intermodal Surface Transportation Efficiency Act requiring a transfer of up to 3 percent of their federal-aid highway funds to their state highway safety programs.

Recommendation to the Secretary of Transportation

In view of the large differences in the rates of safety belt use between the occupants of passenger cars and the occupants of light trucks, we recommend that the Department of Transportation provide special emphasis and targeted programs to increase belt use by the occupants of light trucks.

Agency Comments and Our Evaluation

We provided copies of a draft of our report to DOT for its comments. We met with agency officials, including the Director, Office of Occupant Protection, NHTSA, and these officials agreed with the report's findings, conclusions, matter for congressional consideration, and recommendation. The officials agreed that an effective way to increase the nationwide rate of safety belt use is for the states to have a primary enforcement law that contains fines to discourage noncompliance and is aggressively enforced. They agreed that such a law should also cover all of the occupants of all motor vehicles in which belts are installed. The officials provided a number of editorial and technical comments, which we have incorporated in the report where appropriate.

State Laws on Safety Belt Use

State	Effective date	Enforcement	Fine	Seats	Key belt use provisions	Usage rate (%)[a]
Alabama	July 18, 1992	Secondary	$25	Front	Motor vehicles after model year 1964 designed to carry no more than 10 persons	55
Alaska	Sept. 12, 1990	Secondary	$15	All	Motor vehicles equipped with safety belts	69
Arizona	Jan. 1, 1991	Secondary	$10	Front	Motor vehicles after model year 1971 designed to carry 10 or fewer passengers	60
Arkansas	July 15, 1991	Secondary	$30	Front	Motor vehicles except for buses and other public conveyances	51
California	Jan. 1, 1986	Primary	$20	All	Passenger motor vehicles designed to carry no more than 10 persons and trucks of less than 6,000 lbs unladen weight	83
Colorado	July 1, 1987	Secondary	$15	Front	Passenger cars, small trucks, vans, taxis, ambulances, and recreational vehicles	54
Connecticut	Jan. 1, 1986	Primary	$37	Front	Passenger motor vehicles (passenger car, station wagon, camper, trucks with load capacity of 1,500 lbs or less, vanpool)	72
Delaware	Jan. 1, 1992	Secondary	$20	Front	Motor vehicles except for farm tractors, medical vehicles, and letter carriers	63
District of Columbia	Dec. 12, 1985	Secondary	$15	Front	Motor vehicles with seating capacity of eight passengers or fewer	62
Florida	July 1, 1986	Secondary	$20	Front	Motor vehicles, trucks of unladen weight more than 5,000 lbs except buses and farm tractors	61
Georgia	Sept. 1, 1988	Secondary	$15	Front	Passenger cars after model year 1964 designed to carry 10 passengers or less	57
Hawaii	Dec. 16, 1985	Primary	$20	Front	Motor vehicles except medical, emergency, rental, and commercial vehicles and buses	84
Idaho	July 1, 1986	Secondary	$5	Front	Motor vehicles with weight under 8,000 lbs except for medical and emergency vehicles	61

(continued)

State	Effective date	Enforcement	Fine	Seats	Key belt use provisions	Usage rate (%)[a]
Illinois	July 1, 1985	Secondary	$25	Front	Motor vehicles manufactured after 12/31/64 except special-use vehicles	68
Indiana	July 1, 1987	Secondary	$25	Front	Passenger motor vehicles manufactured after 12/31/64 (including buses but excluding trucks, tractors, and recreational vehicles)	56
Iowa	July 1, 1986	Primary	$10	Front	Motor vehicles after model year 1965 except special-use vehicles	73
Kansas	July 1, 1986	Secondary	$10	Front	Passenger cars and vans manufactured with safety belts and designed to carry 10 passengers or fewer	70
Kentucky	July 13, 1994	Secondary	$25	All	Motor vehicles manufactured after 12/31/65 and designed to carry no more than 10 passengers	58
Louisiana	July 1, 1986	Primary	$25	Front	Passenger cars, vans, and trucks having gross weight 6,000 lbs or less (including pickups) manufactured after 1/1/81	50
Maryland	July 1, 1986	Secondary	$25	Front	Passenger cars, multipurpose vehicles, trucks with capacity of 3/4 ton or less and gross weight of 7,000 lbs or less	69
Massachusetts	Feb. 1, 1994	Secondary	$25	All	Motor vehicles manufactured after 7/1/66 except buses	47
Michigan	July 1, 1985	Secondary	$25	Front	Motor vehicles manufactured after 1/1/65 except buses	66
Minnesota	Aug. 1, 1986	Secondary	$25	Front	Passenger cars, pickup trucks, vans, and recreational vehicles manufactured after 12/31/64	57
Mississippi	Mar. 20, 1990	Secondary	$25	Front	Motor vehicles designed to carry 10 passengers or fewer except for all-terrain vehicles, trailers, and special-use vehicles	43

(continued)

State	Effective date	Enforcement	Fine	Seats	Key belt use provisions	Usage rate (%)[a]
Missouri	Sept. 28, 1985	Secondary	$10	Front	Motor vehicles manufactured after 12/31/67 designed to carry 10 passengers or fewer except trucks	68
Montana	Oct. 1, 1987	Secondary	$20	All	Motor vehicles except special-use vehicles	69
Nebraska	Jan. 1, 1993	Secondary	$25	Front	Motor vehicles with safety belts installed by manufacturer	63
Nevada	July 1, 1987	Secondary	$25	All	Motor vehicles of unladen weight of less than 6,000 lbs with installed belts	71
New Jersey	Mar. 1, 1985	Secondary	$20	Front	Passenger automobiles manufactured after 6/30/66	64
New Mexico	Jan. 1, 1986	Primary	$25	Front	Motor vehicles designed to carry 10 passengers or fewer except trailers, school buses, and trucks	79
New York	Dec. 1, 1984	Primary	$50	Front	Motor vehicles except medical vehicles, taxis, buses, and other special-use vehicles	72
North Carolina	Oct. 1, 1985	Primary	$25	Front	Motor vehicles designed for carrying 10 passengers or fewer except trailers and special-use vehicles	81
North Dakota	July 14, 1994	Secondary	$20	Front	Motor vehicles manufactured with safety belts and designed to carry no more than 11 passengers except special-use vehicles	32
Ohio	May 6, 1986	Secondary	$25	Front	Passenger cars, commercial cars, commercial tractors, and trucks with factory-equipped safety belts	62
Oklahoma	Feb. 1, 1987	Secondary	$10	Front	Passenger cars (excluding trucks, tractors, pickups, vans, recreational vehicles, farm-use vehicles, passengers with medical excuses, and postal carriers)	45

(continued)

State	Effective date	Enforcement	Fine	Seats	Key belt use provisions	Usage rate (%)[a]
Oregon	Dec. 7, 1990	Primary	$95	All	Motor vehicles with safety belts installed except for pickup trucks of 8,000 lbs or less and special-use vehicles	77
Pennsylvania	Nov. 23, 1987	Secondary	$10	Front	Passenger cars, trucks, and motor homes manufactured after 6/30/66 except special-use vehicles	72
Rhode Island	June 18, 1991	Secondary	No	All	Motor vehicles manufactured after 6/30/66 except special-use vehicles	58
South Carolina	July 1, 1989	Secondary	$10	Front	Passenger cars, trucks, vans, recreational vehicles manufactured after 6/30/66 except special-use vehicles	64
South Dakota	Jan. 1, 1995	Secondary	$20	Front	Passenger cars, trucks, vans, recreational vehicles manufactured after 12/31/72 except special-use vehicles	40
Tennessee	Apr. 21, 1986	Secondary	$25	Front	Motor vehicles after model year 1968 with gross weight 8,500 lbs or less except special-use vehicles	60
Texas	Sept. 1, 1985	Primary	$25	Front	Passenger cars designed to carry 10 passengers or less (including trucks with rated capacity of not more than 1,500 lbs) except passengers with medical excuses and postal carriers	71
Utah	Apr. 28, 1986	Secondary	$10	Front	Motor vehicles manufactured after 6/30/66 except special-use vehicles	53
Vermont	Jan. 1, 1994	Secondary	$10	All	Motor vehicles except special-use vehicles	68
Virginia	Jan. 1, 1988	Secondary	$25	Front	Motor vehicles except special-use vehicles	72
Washington	June 11, 1986	Secondary	$25	All	Motor vehicles including passenger cars, multipurpose passenger vehicles except trailers, buses, trucks, and special-use vehicles	81

(continued)

State	Effective date	Enforcement	Fine	Seats	Key belt use provisions	Usage rate (%)[a]
West Virginia	Sept. 1, 1993	Secondary	$25	Front	Motor vehicles manufactured after 12/31/66 designed to transport 10 passengers or fewer except trailers and special-use vehicles	58
Wisconsin	Dec. 1, 1987	Secondary	$10	All	Motor vehicles manufactured after 12/31/71 except special-use vehicles	64
Wyoming	June 8, 1989	Secondary	No	Front	Motor vehicles (including pickup trucks) designed to carry 11 persons or fewer and primarily used to transport persons except special-use vehicles	[b]

Note: Total safety belt use laws: 48 states and the District of Columbia. New Hampshire and Maine have no use laws.

[a]Reported in December 1994.

[b]No usage rate provided.

Source: NHTSA Traffic Safety Programs, Nov. 1995.

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