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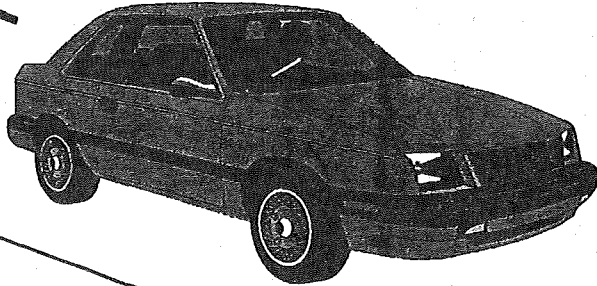
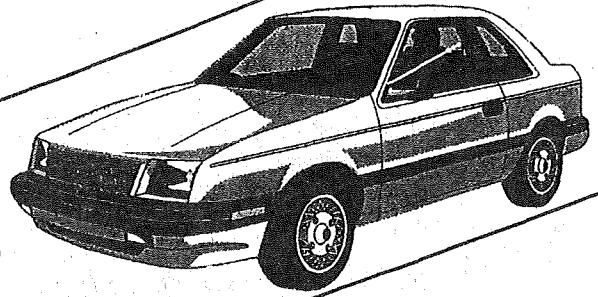
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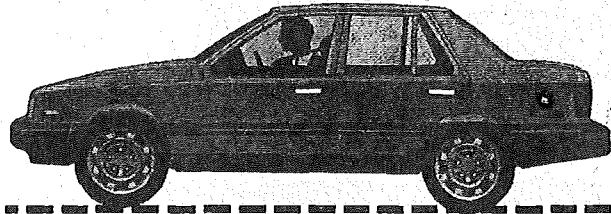
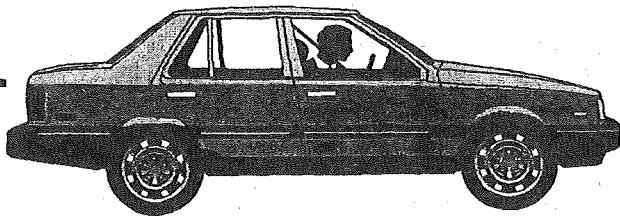
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# Safety belt use in Maine, 1995

## Executive Summary



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for the  
Bureau of Highway Safety  
Department of Public Safety  
State of Maine

June, 1996

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## Safety Belt Use in Maine, 1995 EXECUTIVE SUMMARY

Three out of every five persons who die in vehicle crashes would have survived if they had been wearing their safety belts. Average hospitalization costs are nearly \$5,000 less for persons injured in crashes and hospitalized, if they were wearing their safety belts at the time of the crash. Nationally, about sixty-seven percent of motorists use their safety belts.<sup>1</sup>

In the absence of a mandatory use law for adults until early 1996, the rate at which motorists in Maine have worn their safety belts has been about half the national rate.<sup>2</sup> In November 1995, Maine voters narrowly approved a referendum question establishing a secondary enforcement law requiring all persons to wear safety belts, or, in the case of children and infants, be appropriately placed in child restraint devices (CRDs). The study reported here is an observation study of safety belts and child restraint device use conducted in late summer *before the referendum vote took place*. It provides a pre-mandatory-use baseline to help the Bureau of Highway Safety measure the effect of changes in the law, and also serves as one measure of the extent to which use rates had changed in the immediately prior years without a mandatory use law, but with intensive efforts directed toward public information and education.

The research project was conducted jointly by the Survey Research Center of the Edmund S. Muskie Institute of Public Affairs at the University of Southern Maine and the Margaret Chase Smith Center for Public Policy at the University of Maine, under a contract with the Bureau of Highway Safety, Department of Public Safety of the State of Maine. The field observation and data processing were conducted by the Muskie Institute, while the Smith Center provided research design, sampling and analysis expertise, and prepared this report.

*Four-leg intersections as primary observation sites.* Observations were recorded from two vantage points at each of forty full-signalled intersections,

## *Safety Belt Use in Maine, 1995: Executive Summary*

which were selected using a standard unbiased sampling procedure, supplemented by an additional sample of twenty rural intersections with stop signs, but without full sets of lights. The sampling design was developed consistent with National Highway Traffic Safety Administration (NHTSA) guidelines supplied by the Maine Bureau of Highway Safety. In all, observations of 10,710 passenger vehicles and the restraint use or nonuse of 16,975 occupants were recorded.

### INTERSECTION OBSERVATION STUDY FINDINGS

*Overview: Compliance with the law.* The data gathered in the intersection observation study indicate substantial, but by no means universal, compliance with the law requiring child restraint devices for children aged three and under. The law requiring safety belts for children aged four through eighteen (as the law required at the time of the observations) is less frequently observed, with only 61% of the children observed to be properly restrained. Even fewer adults, for whom there was at the time of observation no mandatory use safety belt law, wear safety belts.

#### Adults aged 19 and over

Persons aged nineteen and over at the time of the study were not required by Maine law to wear safety belts. (The law now applies to all adults.) However, almost half (47%) of persons aged 19 and over wore a safety belt in 1995, an increase from 33% in 1991. Adult men are less likely to wear safety belts than adult women.

#### Children and youth

*Children aged 15 through 18.* Although vehicle occupants were required to use appropriate safety restraint until their 19th birthday under Maine law at the time the 1995 observations were conducted, those in their

## Safety Belt Use in Maine, 1995: Executive Summary

mid to late teens have the next to the lowest safety belt use rate of any age group.

Children aged 15 through 18 would have been in late elementary school, junior high school, and high school when the law was extended in 1991 to require safety belt use through the age of nineteen. Their 1995 use rate at 48% is almost identical to that of persons aged 19 and over, and it is higher than the 29% use rate for their approximate age cohort of children who would have been 11 through 15-year-olds four years earlier in 1991, suggesting that more children may be using belts as they grow older. However, these point-in-time data cannot show conclusively whether that is the case.

In the fifteen through eighteen age group, females are more likely to use their safety belts than males, especially when they are driving: 54% of the female drivers use their safety belts, but only 42% of the males. As passengers, females' use rate in this age group is 57%, while that of the males is 44%.

*Children aged 11 through 14.* The percentage of eleven through fourteen year old children wearing safety belts -- 65% -- is more than twice what it was in 1991, when only 29% were properly restrained. More children in this age group are seated in the right front (passenger) seat than any other position, and are therefore quite vulnerable to injury in a crash.

The 11 through 14 age group is important because it is they who will be driving in a few years, and who may be in a position to influence the use of safety belts by persons who are passengers in their vehicles. This group has been and should continue to be a target for safety belt education efforts in the junior high and middle schools, and high schools. The increase in safety belt use in this age group from 29% in 1991 to 65% in 1995 is even greater than might have been expected from an extrapolation of the 1991 use rates for the younger four through ten year old cohort, suggesting that some preteens and early teenagers who had not used safety restraints as younger children are using them now.

## Safety Belt Use in Maine, 1995: Executive Summary

*Children aged 4 through 10.* Compliance with the "buckle up" requirement is higher among children estimated to be aged four through ten than among those aged eleven through fourteen. Almost three-quarters (72%) of the four through ten year-olds wear their safety belts.

Safety belt use rates among elementary school aged children have increased dramatically since 1991, from about five in ten children to about seven in ten. However, the use rate for these children has declined from the 81% rate at which their age cohort was installed in child restraint devices as infants through three year olds in 1991. While safely restrained as very young children, apparently some of these elementary school aged children have been allowed to lapse into unsafe practices just as they are reaching the age at which they are able to buckle themselves in on their own initiative.

*Toddlers aged one through three.* The law now requires children aged one through three years to be properly installed in a CRD, whether or not they are travelling with their parents or legal guardians. (The law in 1991 allowed an exception for children travelling with persons who were not their parents or legal guardians and a CRD was not available, in which case they were to be properly secured by a seat belt, if one were available.)

As with the entire "under four" age group, a high proportion (84%) of children aged one through three are properly restrained in CRDs, an increase from 78% in 1991.

None of the observed children in this age group are totally without restraint except for a very small number held in the lap of another person, and about twenty-five children incorrectly installed in CRDs.

*Infants in their first year of age.* Almost all (92%) of these infants were found to be in CRDs, but 19% of those in CRDs were not correctly placed. Most frequently the incorrect placement meant that the devices were not facing backward, which is the safest position for infants.

### Passengers' use of safety belts related to use by driver



## ***Safety Belt Use in Maine, 1995: Executive Summary***

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As in the 1991 study, buckling up is a friend-and-family affair. When drivers wear their safety belts, the other occupants of the vehicle (who are most likely family and friends of the driver) are three to four times more likely to be appropriately restrained than they are when the driver is not wearing a seat belt. In addition, the presence of a passenger in the middle front position in the front seat, which is often not a true seating position or a particularly safe one, is associated with nonbelted drivers.

### **Comparison with other geographic areas**

While safety belt use in Maine has increased since 1991, it still ranks among the states with the lowest rates.<sup>3</sup> As of December 1994, Maine's use rate was 36%, third lowest from the bottom of a list of states, the District of Columbia, and Puerto Rico. Maine's rate surpassed only those of Rhode Island (32%) and North Dakota (32%). Even if the most recently obtained rate of 50% use (including adults and children in CRDs) were matched against the rank-ordered states, and assuming no change in the other states' rates, Maine would rank no higher than 7th or 8th from the bottom of the list.

### **Driver Restraint Use by Site and Vehicle Characteristics**

*In-state and out-of-state vehicle registration.* Drivers of Maine-registered vehicles have lower safety belt use rates than any out-of-staters. The driver safety belt use rate for Maine passenger vehicles is 43%, compared to a high of 87% for drivers of vehicles with Canadian registration (where each province has its own belt use law); 64% for drivers of other (non-Maine) New England vehicles; 78% for vehicles registered in New York, New Jersey, and Pennsylvania; and 64% for other states in the United States.

*Size and type of vehicle.* It is likely that selection of a vehicle and the propensity to buckle up or not are both related to age, lifestyle, and personality characteristics. The drivers with the highest rates of safety belt use are those who are driving station wagons: 59% of them are buckled up. Drivers of economy cars are next, with 55% wearing seat belts. Drivers of

## *Safety Belt Use in Maine, 1995: Executive Summary*

intermediate-sized cars, of vans, and of jeep-type sport utility vehicles all exhibited the same safety belt use rate: fifty percent.

Drivers of sports and GT-type cars wear safety belts less often: 37% of them are buckled up. Least likely to wear safety belts are the drivers of pickup trucks: only 23% of these drivers comply with safety recommendations. The driver belt use rates in these two categories of vehicles have increased only slightly since 1991, when 31% of GT/sport car drivers and 21% of pick-up truck drivers wore safety belts.

*Helmet use by motorcycle riders.* Although helmet use was not a specific focus of this study, the opportunity was taken to observe the use or non-use of helmets by persons operating and riding on the 124 motorcycles that stopped before the observers. Helmets are used by motorcycle operators at about the same rate at which adults wear safety belts: 45% of the motorcycle operators are helmeted, as are 44% of their passengers statewide.

### Summary

Safety restraint use rates in Maine for all ages increased from 36% in 1991 to 50% in 1995. Part of that increase may be accounted for by a 1992 change in the law requiring safety belts for youth up to their 19th birthday.

It is among adults that safety belt use has increased markedly from 33% among those aged 16 and over in 1991 to 47% among those 19 and over in 1995. It is important to note that these results were obtained in the summer of 1995 before the November referendum in which the voters narrowly approved a mandatory safety restraint use law for Maine. The referendum had not attracted much attention at the time the observations were conducted, so it is unlikely that it had much effect on behavior.

Infants and young children are much more likely to be installed in restraint devices or to wear safety belts than are older children. As high a proportion as 92% of infants are in child restraint devices (although some are

## *Safety Belt Use in Maine, 1995: Executive Summary*

improperly installed), and about seven in ten elementary school-age children are wearing safety belts. From that age, however, usage declines, such that slightly fewer than half of teenagers wear safety belts. Their usage rates are very similar to those of adults of all ages.

Before the implementation of the mandatory use law, Maine ranked among the lowest 10% of states in terms of compliance with safe practice. While this ranking of states depends as much on the activities of the other states as upon what is done in Maine, it is clear even from the observations in Maine that out-of-staters use their safety belts far more often than people from Maine. The effect of the change in the law, of course, remains to be seen.

Orono, Maine  
June 27, 1996

1. U. S. Department of Transportation, National Highway Traffic Safety Administration, *Three of five unbelted motorists in fatal crashes would have survived, study reports*, (press release 9-96), Feb. 15, 1996.
2. Suzanne K. Hart, *Child Restraint Device and Safety Belt Use in Maine, 1991*, Edmund S. Muskie Institute of Public Affairs, University of Southern Maine, prepared for the Bureau of Highway Safety, Department of Public Safety, State of Maine, August 1992; and Deidre Hungerford, David Kovenock, and James Sorg, *Maine Seat Belt Use Observation Study, February 1986: Preliminary Summary*, Northeast Research, Orono, Maine, 1986.
3. National Highway Traffic Safety Administration World Wide Web site, February 2, 1996: <http://www.nhtsa.dot.gov/fedworld/nhtsa-ts/final'94.txt>