

Safety Belt Use in Maine

1998



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

	State of Maine
KF	by
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Portland, Maine

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Safety Belt Use in Maine, 1998 EXECUTIVE SUMMARY

Research findings from 1996 show that three out of every five persons who died in vehicle crashes would have survived if they had been wearing their safety belts. Average hospitalization costs were 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 69% of motorists use their safety belts.¹

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 had been about half the national rate.² 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 the fall of 1998, nearly three years after the new law had been implemented. Comparisons of these 1998 data with the 1997 and 1995 findings (and, in some instances, the 1991 data) provide the Bureau of Highway Safety with the primary measure of the effect of changes in the law by showing the extent to which use rates have changed following implementation of the new law.

The research project was conducted by the Survey Research Center of the Edmund S. Muskie School of Public Service at the University of Southern Maine, under a contract with the Bureau of Highway Safety, Department of Public Safety of the State of Maine. All of the field observations, data processing, and preparation of this report were conducted by the Muskie School staff.

Types of intersections selected as primary observation sites. Observations were recorded at one hundred-twenty different intersections from around the state, both signalized and non-signalized, which were selected using a standard unbiased sampling procedure. The sampling design was developed consistent with the new standardized guidelines from the National Highway Traffic Safety Administration (NHTSA). In all, observations of 6,110 passenger vehicles and the restraint use or nonuse of 8,470 occupants were recorded.

Sampling and estimating protocols. In 1998, NHTSA began to institute new standardized sampling and estimating protocols for all states to follow in their Safety Belt

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Use studies. These procedures were developed to ensure comparability among findings from state to state. The new estimation formulae are intended to provide each state with very precise estimates of their statewide belt use rates. These formulae provide a statistically sound method to calculate weights that will help adjust sample data to better reflect the volume and types of traffic found in all intersections in a state, not just those selected for observation.

One of the results of adopting new estimation methods, however, is that this year's findings and those of previous years are not entirely comparable. Different statistical methods can produce slightly different results, which is why NHTSA is moving to standardized methods. In Maine, the previous method for estimating use rates shows that the 1998 rate is essentially unchanged from 1997; the new method finds a decline of 2 percentage points (the "old" rate is still well within the margin of error for the "new" rate). We support the use of the new estimation formulae and NHTSA's efforts to bring consistency and uniformity to all of the states' Safety Belt Use studies, but wish to remind readers that the statistical procedures utilized in previous years are not quite equivalent to those used in 1998.

Subgroup analyses. This report includes findings from many subgroups, such as for different age groups, seating positions within vehicles, type of car, etc. We urge readers to keep in mind that many of these groups have very low numbers and, therefore, the point estimates of their use rates are much less precise than those for the entire sample.

INTERSECTION OBSERVATION STUDY FINDINGS

Overview: Compliance with the law. The overall restraint use was essentially unchanged from 1997 to 1998. However, by some measures (age, seating position, etc.), we have identified some changes. 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 is much less frequently observed, with only 54% of the children observed to be properly restrained, compared to 69% in 1997. A somewhat higher percentage of adults wear safety belts.

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Adults aged nineteen and over

Almost all occupants of passenger vehicles are now required to wear safety belts (there are a few exemptions). Over half (59%) of persons aged nineteen and over wore a safety belt in 1998, unchanged from 1997 and up from 47% in 1995. Adult men are still less likely to wear safety belts than adult women.

Children and youth

Children aged fifteen through eighteen. Since 1991, Maine law has required fifteen to eighteen year olds to use appropriate safety restraints; teens are well accustomed to the idea of wearing their seat belts. Yet those in their mid to late teens have the lowest safety belt use rate of any age group.

Unlike in 1997, the use rate for this age group is considerably lower than that of persons aged nineteen and older. Furthermore, the 1998 rate of 43% for fifteen to eighteen year olds is much lower than the 1997 use rate (58%) for the same age group. The 1998 figure has now declined back to the 1995 level.

In the fifteen through eighteen age group, females continue to be more likely to use their safety belts than males, 48% to 39% respectively. Among drivers, the use rates are closer, with 44% of female drivers and 41% of male drivers being properly restrained. In previous studies, female drivers in this age category were much more likely to be belted than were male drivers: in 1997, 64% of the female drivers used their safety belts, but only 47% of the males used theirs. As passengers, females' use rate in this age group is 51%, while that of the males is only 38%. This represents a major reversal in the belt use trend, as the females and males have declined from 66% and 52% in 1997.

Children aged eleven through fourteen. The percentage of eleven through fourteen year old children wearing safety belts -- 71% -- has declined slightly since the 1997 study. This number has increased substantially since 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 eleven through fourteen 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 middle schools, junior highs, and high schools.

Safety Belt Use in Maine, 1998

Children aged four through ten. Compliance with the "buckle up" requirement is lower among children estimated to be aged four through ten than among those aged eleven through fourteen. Fewer than two-thirds (60%) of the four through ten year-olds wear their safety belts, which is much lower than the 77% observed in 1997.

Safety belt use rates among elementary school aged children have increased since 1991, from about half of the children in this age group in 1991 to 60% now. However, the use rate for these children appears to have declined from the rates at which their age cohorts were secured in child restraint devices in the prior studies. While safely restrained as very young children, apparently many of these elementary school aged children (as well as older 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. Maine law requires children aged one through three years to be properly buckled in a CRD, whether or not they are traveling with their parents or legal guardians. Until 1991, the law allowed an exception for children traveling 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 (89%) of children aged one through three are properly restrained in CRDs, an increase from 84% in 1995 but a minor drop from the 90% recorded in 1997.

Very few of the observed children in this age group were totally without restraint. A small number were held in the lap of another person, and eight children were incorrectly secured in CRDs.

Infants in their first year of age. All of the infants observed were found to be in CRDs, but 14% of them were not correctly placed. Most frequently the incorrect placement meant that the devices were not facing backward, which is the safest position for infants.

Results for these two youngest age groups are very encouraging; for the vast majority of youngsters, efforts to comply with the law have been made. We wish to stress here, however, that all of these findings are based on very quick observations. While almost all of the children in CRDs appeared to be properly restrained, recent research has shown that many children are actually incorrectly secured and many CRDs are improperly attached to the car. For our study, detailed checking of CRD use was impossible; our results are limited to the *appearance* of correct or incorrect use.

Passengers' use of safety belts related to use by driver

As in the earlier studies, buckling up continues to be 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 nearly three 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

Maine's safety belt use relative to other states has improved modestly since 1995.³ As of December 1995, Maine's use rate was 50%, the fifth lowest from the bottom of a list of all fifty states, the District of Columbia, and Puerto Rico. Maine's rate surpassed only those of Mississippi (46%), Oklahoma (46%), North Dakota (42%), and South Dakota (40%). By 1997, Maine's use rate had risen to number thirty-five on the list. At the time of this report, NHTSA had not yet released the current figures, so no new comparisons can be given.

Driver Restraint Use by Site and Vehicle Characteristics

In-state and out-of-state vehicle registration. Drivers of Maine-registered vehicles have higher safety belt use rates than those observed for many of the out-of-staters. The driver safety belt use rate for Maine passenger vehicles is 60% (up from 57% in 1997), compared to a high of 62% for drivers of vehicles registered in New York, New Jersey, and Pennsylvania. Use rates for cars with Canadian registrations (where each province has its own belt use law) were down from 82% a year ago to 57% in the current study; other (non-Maine) New England vehicles dropped to 47% (from 68% in 1997), while 67% of drivers in vehicles from other states in the United States were belted. We stress that the observed use rates for vehicles with out-of-state plates are reported here for information purposes only. There weren't enough observations of any other states to be able to make conclusive comparisons between Maine and any other state.

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. As in previous years, the drivers with the highest rates of safety belt use are those who are driving station wagons: 70% of them are buckled up, a slight increase from 1997's rate of

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68%. Drivers of economy cars are next, with 65% wearing seat belts, followed by intermediate sized cars (63%), and jeep-type sport utility vehicles at 62%. Drivers of vans have a 61% use rate.

Drivers of sports and GT-type cars wear safety belts less often: 56% of them are buckled up. Least likely to wear safety belts are the drivers of pickup trucks: only 43% of these drivers comply with the law.

Use rates have improved slightly for drivers of several types of vehicles. Drivers of intermediate sized cars had a rate of 62% in 1997, jeeps and SUV drivers were up from 60% a year ago, sports cars increased from 52% and pick up truck drivers improved from their previous rate of 36%. Van drivers declined from 65% and economy car drivers went down from 67% in 1997.

Helmet use by motorcycle riders. In previous years, we have reported helmet use and non-use by motorcyclists. This information was recorded again in 1998 but because the observations were conducted in mid- to late October, frequently in bad weather, only about 20 motorcycles were observed. Due to the insignificant number, we do not relate any data regarding helmet use in this report.

Summary

Safety restraint use rates in Maine for all ages increased from 50% in 1995 to 61% in 1997. They dropped slightly to 59% in the 1998 study. The latest study was conducted in the fall of 1998, two and a half years after the new mandatory safety belt law took effect. Because there was little change in Maine's safety belt education programs between 1995 and 1998, it is likely that most of the increase is a result of the impact of the new law.

Safety belt use among adults has increased markedly during the 90's, rising from 33% among those aged sixteen and over in 1991 to 59% among those nineteen and over in 1998 (it should be noted that these are not entirely comparable figures due to the different age groupings used in the 1991 study).

Infants and young children are much more likely to be secured in restraint devices or to wear safety belts than are older children. In the 1998 study, all of the infants observed were in child restraint devices (although some were improperly restrained), and 60% of elementary school-age children were wearing safety belts. From that age, however, usage varies, such that 71% of eleven to fourteen year olds use their belts while

fewer than half (43%) of fifteen to eighteen year olds wear safety belts.

Many of these figures represent markedly higher levels of compliance with Maine's safety belt requirements from the earliest studies. 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 appears from the NHTSA data and the observations in Maine that most out-of-staters still use their safety belts more often than people from Maine. With the implementation of the new law, however, Maine is now closing the gap.

Despite the increased overall rates from 1995 to 1998, there is cause for concern in the current data. Rates for children age four to ten and teenagers from fifteen to eighteen years old are markedly lower in 1998 than they were in 1997. Explanations for these differences are unknown—perhaps the fifteen year olds observed in October 1998 were more likely to be travelling to and from school with their friends and not using their belts, while more of the teenagers observed in August 1997 were travelling with their parents and were required to buckle up. Whatever the causes of these differences, it seems clear that children must continue to be a target for new, more effective educational campaigns to increase safety belt use.

Portland, Maine April 15, 1999

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INTRODUCTION

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 were 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 69% of motorists use their safety belts.⁴

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 had been about half the national rate.⁵ 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 the fall of 1998, nearly three years after the new law had been implemented. Comparisons of these 1998 data with the 1997 and 1995 findings (and, in some instances, the 1991 data) provide the Bureau of Highway Safety with the primary measure of the effect of changes in the law, by showing the extent to which use rates have changed following implementation of the new law.

The research project was conducted by the Survey Research Center of the Edmund S. Muskie School of Public Service at the University of Southern Maine, under a contract with the Bureau of Highway Safety, Department of Public Safety of the State of Maine. All of the field observations, data processing, and preparation of this report were conducted by the Muskie School staff.

The study was designed to determine the rate of safety restraint use in Maine as part of the development of an annual statewide comprehensive highway safety plan as required by the National Highway Traffic Safety Administration (NHTSA) and the Federal Highway Administration (FHWA) pursuant to the Federal Highway Safety Act of 1966. It incorporates the new standardized design requirements developed by NHTSA in an effort to ensure reliability and comparability of findings between each of the states.

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METHODOLOGY

Selection of full-signaled intersections as observation sites. Observation sites must afford opportunity for a reasonably representative flow of multi-purpose traffic, while allowing observers a safe viewing position as well as a clear vantage point in front of which vehicles pass slowly enough to permit careful observation and recording of a number of characteristics of the vehicles and all their occupants. For these reasons, full-signaled intersections, at which there is a red, yellow, and green traffic light at a crossroads where traffic comes to a full stop, were selected as observation sites.

At the full-signaled traffic sites, travel is likely to represent varied origins and destinations; is relatively heavier (which probably originally prompted the installation of the full set of signal lights); and the flow of traffic periodically comes to a full stop, usually allowing a clear view of occupants and time to record observations of multiple vehicles. Full-signaled intersections are also likely to have sidewalks, traffic islands, or other safe and raised surfaces from which observers may look down into vehicles.

Observers were instructed to start their observations with the second vehicle in line at the signal light, on the assumption that stopping for or running red lights is behavior that may be related to restraint use because it involves reluctance or willingness to take risks. Observers were to record data concerning as many passenger (noncommercial) vehicles as possible during the time the traffic was stopped for the light.

Selection of less congested intersections as observation sites. In addition to the sites described above, observations were made from a selection of rural non-signalized intersections to assure inclusion of travel with more rural origins and destinations. These intersections had stop signs rather than signal lights.

Sampling. The 1998 sample was selected by the National Highway Traffic Safety Administration (NHTSA). The sampling design was developed to ensure compliance with NHTSA's standardized guidelines. The sampling process was designed to provide a confidence level of 95% with an acceptable margin of error of plus or minus five percent. This resulted in a final sample size of one hundred-twenty intersections, twice as many as

selected in previous studies.

To achieve the proper distribution of types of traffic in the state, Maine's sixteen counties were divided into five regions, based on geographic and demographic similarities. The regions were defined as:

South—Cumberland and York counties

West—Androscoggin, Franklin, and Oxford counties

North/Downeast—Aroostook and Washington counties

Central—Kennebec, Penobscot, Piscataquis, and Somerset counties

Coast-Hancock, Knox, Lincoln, Sagadahoc, and Waldo counties.

Intersections (both signalized and non-signalized) were then selected from each region with probability proportional to the traffic volume measured in thousands of vehicles entering each intersection, according to Maine Department of Transportation (MDOT) data.

Observations were conducted from a single vantage point at each of the one hundred-twenty intersections; previous studies had utilized two observers at each intersection. In all, observations of 6,110 passenger vehicles and the restraint use or nonuse of 8,470 occupants were recorded. A list of the towns and cities in which observations were made appears as Table 22.

Weighting. Consistent with NHTSA guidelines, the data were weighted to reflect the regional sampling design and the average daily traffic volume measured in thousands of entering vehicles at the selected intersections. The weighting simply adjusts the actual number of vehicles observed to reflect the expected number of vehicles, based on the traffic volume in the region where the intersection is located.

One effect of the weighting is to produce results reported in fractions of observations. The weights are decimal rather than integer weights, and the fractional observations are the result of multiplying a simple observation count by the decimal weight. In the tables in this report, the decimal frequencies have all been rounded, as have the percentages reflecting the weighted data. The unavoidable effects of

proportionately weighted data are that results for subsets of data may not always sum precisely to totals presented elsewhere, and rounded percentages do not always sum exactly to 100% nor always translate directly into whole numbers of observations.

Observation times and days. Observations were made at one hundred twenty locations throughout the state for sixty minutes each, on a structured schedule of observation times and days that would maximize the opportunity to study variations in restraint use by time and by day of week. Intersections were randomly assigned to a day and time for observations, although consideration did have to be given for trips to locations that required lengthy travel times. Each day and time had an equal probability of selection.

The observation assignments were allocated across a schedule of time slots that began at 7:00 a.m. and ended at 6:00 p.m. on each of the seven days of the week. Observations were conducted from October 2 through October 27, 1998.

Observer training. Observers were trained using a study-specific training manual written for this project by the Muskie School's Survey Research Center, based upon a manual developed by the National Highway Traffic Safety Administration,⁶ upon materials from the Transportation Research Institute at the University of Michigan⁷, and the manual produced by the Muskie School for earlier observation studies. The observers were trained to recognize vehicle types and sizes as well as driver and passenger gender, age group and restraint type. The training involved not only use of the written materials and oral presentation, but also demonstrations and field practice.

INTERSECTION OBSERVATION STUDY FINDINGS.

Restraint Use by Age and Gender

Contents of this section. This section of the report contains descriptions of the restraint use behavior of male and female adults and children of several age groups, as well as the variations in use of safety restraints by persons in various seating positions in

the vehicles.

Where possible and appropriate, comparisons are made to the restraint use rates of similar demographic groups in the 1995 and 1997 studies (and, in some instances, the 1991 data). Those comparisons can address questions about changes in use rates that may have been prompted by changes in the law, by educational efforts targeted to specific age groups, or by the risk-taking behaviors characteristic of particular age groups.

Comparing age group-specific use rates with results of prior studies. These data may be used to suggest whether the safety restraint use behaviors of children endure as the children age. With data from three successive observation studies conducted in 1995, 1997 and 1998, we can roughly compare the use rates of children in the later studies with the use rates for the age group to which they belonged in earlier studies. For example, use rates of children in the eleven to fourteen year old age group in 1995 may be compared to the use rates for children aged four years older – fifteen to eighteen -- in 1998. Because observers recorded only the estimated age *group* of vehicle occupants, not a specific year of age, these comparisons are, of course, not exact. Also, the age groupings do not correspond exactly from one study to another. However, these data can begin to help understand the relationship of early childhood behavior to later behavior.

There are at least two logical explanations for differences in behavior exhibited by different age groups at one point in time. One is that there are differences in "generations." For example, today's junior high school students may be different from those of several years ago. The second is that behavior may change throughout one's life cycle; for example, a teenager may not think or behave in the same way as s/he did in late elementary school. These data cannot indicate which of these explanations is "correct" in describing age group differences. However, because they are collected at two points in time, the data can suggest whether members of an age group use safety restraints at a higher rate than would have been expected if only generational change were operating; that is, if they have simply carried with them the behavior learned at the earlier age. In addition, knowing that use rates may decline at certain ages may help educators plan messages and curricula to reinforce earlier behavior or anticipate later behavior.

Safety Belt Use in Maine, 1998

Overview: Compliance with the law. The data gathered in the intersection observation study indicate substantial (87%), 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 is less frequently observed, with only 54% of the children observed to be properly restrained. This compliance rate for children four and over is heavily affected by the fact that only 43% of teens between fifteen and eighteen were properly restrained. Adult use is slightly higher at 59%. Figure 1 presents a summary of rates of appropriate use.

Figure 1 1998 Maine Safety Belt Use Observation Study

Summary, restraint use and non-use

Number of observations and percent of use and non-use, by age group

Number of observations

Age (Est.)	Lap/ shoulder belt	CRD: correct	CRD: incorrect	In lap of another	No restraint	Total
<1	0	14	2	0	0	16
1-3	2	99	9	1	3	114
4-10	208	4	0	2	140	355
11-14	81	0	0.	0	34	114
15-18	151	0	0	0	197	313
19+	4,440	0	0	0	3084	7,523
TOTAL	4,882	116	11	3	3,458	8,470

Presence/absence of restraint; restraint type

Percentages

Presence/absence of restraint; restraint type

Age (Est.)	Lap/ shoulder belt	CRD: correct	CRD: incorrect	In lap of another	No restraint	Total (by age group)	Total Correct Use
<1	0%	86%	14%	0%	0%	100%	86%
1-3	2%	87%	8%	1%	3%	100%	87%
4-10	59%	1%	0%	*	40%	100%	60%
11-14	71%	0%	0%	0%	29%	100%	71%
15-18	43%	0%	0%	0%	57%	100%	43%
19+	59%	0%	0%	0%	41%	100%	59%
TOTAL	58%	1%	*	*	41%	100%	59%

Note: Data are weighted, and the resulting non-integer frequencies are rounded for presentation in this table. Percentages are also rounded. The result of rounding may be percentages that sum to slightly more or less than exactly 100%.

Numbers in italics represent appropriate use. *Less than 1%, but not zero

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Adults aged nineteen and over

Prior to the new law, persons aged nineteen and over were not required to wear safety belts. The law now applies to all adults. Over half (59%) of persons aged nineteen and over wore a safety belt in 1998 (Table 17), the same as the reported rate in 1997 and much higher than the 47% observed in 1995.

Drivers aged nineteen and over are slightly more likely than their adult passengers to wear a belt (Table 2): while 60% of these drivers wear safety restraints, only 56% of all adult passengers wear theirs. By seating position, 58% of right-front seat passengers are properly restrained; 45% of those in the seat immediately behind the driver wear belts; 57% of those in the middle back seat (which often either has no belt, or is not even a true seating position) wear them; 47% of those in the seat behind the front seat passenger do so. In the additional rear seats, such as in vans, 63% of the passengers observed were wearing belts. Except for the driver and the additional rear seats, most of these safety belt use rates are slightly lower than the corresponding 1997 figures. Rates for the middle back seat and the additional rear seats appear to have improved, but there are so few of them (9 and 11, respectively) that the figures should be viewed with caution.

Adult men are still less likely to wear safety belts than are adult women (Tables 3 and 4). Just over half of male drivers (54%) wear safety belts, while over two-thirds (70%) of female drivers wear them. These rates have increased from 41% and 56%, respectively, in1995, and 52% and 67% in 1997. Fewer than half of adult male right-front seat passengers wear a safety belt (46%), which is down from 48% in 1997. Nearly two-thirds of the adult female passengers (65%) in that seating position wear one, down from 66% a year ago.

Sixty-one percent of females in the seat immediately behind the driver, 58% of the adult females in the seat behind the front seat passenger, and 43% of those in the back middle seat wear their safety belts.

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Children and youth

Children aged four through eighteen. Like all other passengers, children aged four through eighteen at the time the observations were made (Fall, 1998) were required by Maine law to wear safety belts.

In this study, the observers were asked to distinguish within this age group between children aged four through ten, preteens and teens aged eleven through fourteen, and older teenagers aged fifteen through eighteen. The observation results for children in these age groups are discussed below.

Children aged four through ten. Compliance with the "buckle up" requirement is lower among children estimated to be aged four through ten than among those aged eleven through fourteen. Only 60% of the four through ten year-olds wear their safety belts, or their child safety seats or booster seats for the youngest in this age group (Table 17). This represents a decline from the 77% use rate observed in 1997.

In 1998, 28% of the children aged four through ten were seated in the right front passenger seat (Table 11). Belt use rates are quite high (72%) for this age group at this seating position, but are down from 81% in 1997.

Children aged eleven through fourteen. The percentage of eleven through fourteen year old children wearing safety belts (71%) is more than twice what it was in 1991, when only 29% were properly restrained. It is important to note that the comparable age group in the 1991 study was eleven through fifteen years, not fourteen. By 1995, 65% of eleven through fourteen year olds were properly restrained; in 1997, the reported rate was 73%, slightly higher than for 1998.

More children (48%) 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 (see

Table 13). Sixty-nine percent of the children in the eleven through fourteen age group in the right front passenger seat are wearing seat belts, down from 78% in 1997. Seat belt use among this group varies across seating positions. Seventy-six percent of the eleven through fourteen year-olds in the seat immediately behind the driver are wearing belts; 56% of those in the middle back seat; and 67% of those in the seat behind the front passenger are wearing safety belts.

The eleven through fourteen age group is important because they will be driving in a few years and will 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 middle schools, junior highs and high schools.

Children aged fifteen through eighteen. Only 43% of the fifteen to eighteen year olds observed in 1998 were properly restrained, compared to a rate of 58% in 1997 and 48% in 1995. Those in their mid to late teens have consistently had the lowest safety belt use rate of any age group. Unlike in previous years, use rates for those in their late teens were considerably lower than those of people aged nineteen and over. Cohort analysis from the 1995 data suggests that some preteens and early teenagers who had used safety restraints at that age were no longer using them as fifteen to eighteen year olds. If so, this represents a serious step backwards. Further research and data analysis may help to better understand this change.

In the fifteen through eighteen age group, females are more likely to use their safety belts than males (48% compared to 39%). Among drivers, however, the distinction is minor: 44% of the female drivers use their safety belts, while 41% of the males do so (Tables 15 and 16). As right front seat passengers, females' use rate in this age group is 50%, while that of the males is 39%. It appears that the use rates for females in this age group have declined more significantly than for males, especially among drivers.

Summary: Children aged four through fourteen. Almost two-thirds (62%) of the elementary school aged children were wearing their safety belts, down from approximately 76% in 1997; all of the decline was among the four to ten year olds. A higher proportion (76%) of the children in this age group wear safety belts or are properly buckled in restraint devices when riding in the right front seat. Restraint use is also high (74%) in the seat behind the driver. The use of restraints is very low (32%) in the middle back seat (Table 12).

Children from birth through three years. Compliance with the law and with good practice in restraining their children is very high among parents of children in this age group. These infants and toddlers are required to be in child restraint devices, and about 87% of them are apparently properly restrained (Table 17), a very slight decrease from 1997 when the reported proper CRD restraint rate was 88%. Another 9% are in CRDs, but not properly so. Common improper uses of a CRD included not having children belted in, or not having the CRD attached to the car seat. In addition, some CRDs were placed sideways in the seat, and some were held by another person.

In 1995, 82% of children from birth through three were properly riding in CRDs, and 8% were improperly buckled in CRDs. By 1997, these rates had increased to 88% and 8%. It is clear that parents are very concerned about the safety of their youngest children and, for the most part, are trying to comply with the law.

Infants in their first year of age. In 1998, all of these infants were found to be in CRDs. It should be pointed out, however, that of the infants who were observed to be in CRDs, 14% were not correctly placed (Tables 8 and 17). This rate is the same as that reported in 1997. Most frequently the incorrect placement meant that the devices were not facing backward, which is the safest position for infants.

Prepared for the Bureau of Highway Safety, Department of Public Safety, State of Maine; by the Edmund S. Muskie School of Public Service, University of Southern Maine February, 1999

Safety Belt Use in Maine, 1998

Toddlers aged one through three. The law requires children aged one through three to be properly restrained 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 was available.

As with the entire "under four" age group, a high proportion (87%) of children aged one through three are properly restrained in CRDs (see Table 17 and Figure 1), an increase from 84% in 1995 but a slight decrease from 88% in 1997. A very small number of children in this age group are held in the lap of another person, and eight children are incorrectly secured in CRDs (see Figure 1).

The bulk of children aged one through three years (85%) are equally distributed between the seat behind the driver, the seat behind the front passenger, or in the middle back seat (see Table 10). Good practice suggests that in the event of a crash the back seat of a car is a safer place for an infant or toddler than the front seat. Small children riding in the front seat are at risk of severe injury in a crash because protuberances such as the gear shift, the steering wheel, the knobs on the dashboard and radio, and the lower part of the dashboard itself (which is usually not as thickly padded as the top edge) are all at head, face, and neck level for a small child.

Passengers' use of safety belts related to use by driver

As in all prior studies, 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 nearly three times more likely to be appropriately restrained than they are when the driver is not wearing a seat belt (Table 21). 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 1995, it still ranks only in the middle of all the states (see Table 22).⁸ As of December 1995, Maine's use rate was 50%, fifth lowest from the bottom of a list of all fifty states, the District of Columbia, and Puerto Rico. By 1997, Maine's use rate had risen to number thirty-five on the list.

Comparison of 1998 with 1995 and 1997 Maine data

Four earlier studies in Maine have been conducted for the Bureau of Highway Safety of the Maine Department of Public Safety. The first was completed by Northeast Research for the School of Public Health of the Boston University Medical School,⁹ and the more recent studies, by the Edmund S. Muskie School of Public Service at the University of Southern Maine.¹⁰

The 1998 study is the fourth conducted by the Muskie School's Survey Research Center. Although there have been variations, each study has utilized similar methodologies. In each case, intersections were selected randomly with probability of selection proportional to traffic volume. The sampling, observer training, observation methods, and information collected in the 1998 study have undergone only minor changes from the earlier studies. The biggest change in 1998 involves the adoption of NHTSA's sampling design, which resulted in conducting observations at twice as many intersections, with a more representative distribution of locations and types of traffic than in earlier studies.

In 1995, 82% of children through age three were properly restrained, and children in the back seat were slightly more likely to be properly restrained than those in the front. By 1997, 88% of children through age three were correctly restrained; children in the back seat were much more likely to be properly restrained than were those in the front. In 1998, the same level of use was still being maintained. Those in the back seats continue to use CRDs at a higher rate than those in front. It may be that parents who make children buckle up are more likely than those who ignore restraints to place their children in safer seating positions. The 1998 results show this to be an area of some considerable success. In 1995, 70% of all children in this age group were seated in the back seat, which is generally a safer position than the front seat. In 1997, the number had increased to 82%. The number has now risen to 89% in 1998.

In 1995, 70% of all children aged four through fourteen (72% of those aged four through ten and 65% of those eleven through fourteen) were properly restrained, a considerable increase over the 1991 figures. Use rates increased further in the 1997 study, with 76% of the four through fourteen year olds properly restrained (77% of the four through ten year olds and 73% of those eleven through fourteen). However, in 1998 we find a considerable drop in the four to ten age group, with only 60% of these youngsters correctly belted. The rate for the eleven to fourteen year olds showed a slight drop to 71%.

Adult use of safety belts has steadily increased. In 1995, 46% of drivers aged fifteen and over wore lap and shoulder belts; in 1997, 59% did so, as in 1998 (Table 5). In 1995, 51% of those fifteen and over in the passenger seat wore their belts; in 1997, 61% wore them. The figure drops in 1998 to 57%. In 1995, 47% of those fifteen and over wore their safety belts in the back seat; and in 1997, 57% used them. Backseat usage has also declined in 1998, down to 48%.

Summary: Change from 1995 to 1998. In 1995 and 1997, the trend had been towards increasing restraint use by virtually every measure (age, seating position, type of vehicle, etc.). In 1998, however, the overall increase has ended and some significant declines have appeared. Usage rates for four to ten year olds have dropped by 17 percentage points; rates for fifteen to eighteen year olds have declined by 15 percentage

points. Perhaps most importantly, the decreases noted in this report represent the first shift in what had been a steady pattern of increasing restraint use. Age-related use rates will need to be watched in the future to determine if an ongoing change in attitudes and behaviors is beginning to develop.

Driver Restraint Use by Site and Vehicle Characteristics

In this portion of the report, only the driver's use of safety belts will be examined in detail. As described in the text above, the driver's use or non-use of a safety belt is strongly related to the use or non-use of restraints by others in the vehicle.

In-state and out-of-state vehicle registration. The 1998 observations were conducted in the month of October, and, therefore, included less tourist traffic than in previous studies: 94% of the observed vehicles were from Maine, up from 88% in 1997. The other five New England states accounted for nearly 4% of the vehicles; New York, New Jersey and Pennsylvania (as a group), less than 1%; other states, 1%; and Canada, less than 1%. Seatbelt use for Maine passenger vehicles has jumped from 57% in 1997 to 60% in 1998.

Size and type of vehicle. There are some clear differences in driver safety belt use rates according to the type of vehicle the driver is operating (See Table 18). 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, so it is not surprising that these differences occur.

The drivers with the highest rates of safety belt use are those who are driving station wagons: 70% of them are buckled up, a slight increase from 1997's rate of 68%. Drivers of economy cars are next, with 65% wearing seat belts, followed by intermediate

sized cars (63%), and jeep-type sport utility vehicles at 62%. Drivers of vans have a 61% use rate.

Drivers of sports and GT-type cars wear safety belts less often: 56% of them are buckled up. Least likely to wear safety belts are the drivers of pickup trucks: only 43% of these drivers comply with the law.

Day of the week. Observations were conducted on all days of the week, and while there are variations in safety belt usage on the various days (Table 18), there is no readily explained pattern to the findings. The assignment of days and times of observation to the sites was systematic and unbiased, but the number of observations obtained on each day varied considerably because the traffic volume at the selected intersections varied. Use rates are higher on Mondays (which, surprisingly, had the lowest rate in 1997), and are relatively consistent across other days except on Wednesday and Friday, when the rate is somewhat lower.

Time of day. Safety belt use varies throughout the day (Table 18). Use rates are highest during the "rush hours" with 71% of drivers belted between 7am and 8am, 63% from noon to 1pm, and 61% from 5 to 6pm.

Weather and road conditions. Unlike in earlier years, observers encountered a great deal of bad weather. Contrary to expectations, however, the highest usage rates were on the clear, sunny days (61%) and the lowest rates were on the rainy and cloudy days (59% and 58%, respectively). About one-third of all observations were conducted on clear days, one-third of the observation periods were rainy and about a third were cloudy.

Safety Belt Use in Maine, 1998

Urban and rural locations. The MDOT assigns an urban or rural designation to every controlled intersection in the state. Based on those designations, just over half of all intersections selected for observation were in rural areas. Due to the higher traffic volume at urban intersections, however, approximately three-fourths of the actual (unweighted) vehicles observed were in urban areas and only 23% were rural. It is likely that this more accurately reflects the true distribution of urban/rural traffic than did the previous studies, in which urban/rural was defined at the county level. Sixty percent of urban occupants were properly restrained and 55% of those in rural areas were belted. The data are weighted by the MDOT's average traffic flow data.

Summary

Safety restraint use rates in Maine for all ages increased from 36% in 1991 to 50% in 1995 to 61% in 1997. In 1998, the overall rate declined slightly to 59%. Much of the most recent increase may be accounted for by the 1996 change in the law requiring safety belts for all vehicle occupants.

It is among adults that safety belt use has increased markedly from 33% among those aged sixteen and over in 1991, to 59% among those nineteen and over in 1997, and in 1998.

Infants and young children are much more likely to be buckled in restraint devices or to wear safety belts than are older children. All of the infants observed in 1998 were in child restraint devices, although some were not properly placed. Use rates for four to ten year olds dropped off from 77% in 1997 to only 60% in 1998. While the figure for eleven to fourteen year olds dropped only slightly from 73% in 1997 to 71% in 1998, the fifteen to eighteen year olds declined markedly, from the 58% recorded in 1997 to 43% only one year later. It is the findings for the four to ten and the fifteen to eighteen age groups that raise the greatest concern in the 1998 study.

Prepared for the Bureau of Highway Safety, Department of Public Safety, State of Maine; by the Edmund S. Muskie School of Public Service, University of Southern Maine February, 1999 In previous years, Maine had implemented changes in the seat belt law shortly before the observation studies began. In 1998, there were no major changes. This may be the biggest explanation for the fact that there was little change in overall use rates during that time. Despite the overall levels, however, we now see some areas of declining use. It appears that more educational efforts, and possibly further legal incentives, may be necessary to ensure that Maine's trend towards greater safety in passenger vehicles will continue.

ENDNOTES

- 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. U.S. Department of Transportation, National Highway Traffic Safety Administration, *Observed* Safety Belt Use Rates Reported by States as of February 1998. (1998). Washington, DC: Author.
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- 8. U.S. Department of Transportation, National Highway Traffic Safety Administration, *Observed* Safety Belt Use Rates Reported by States as of February 1998. (1998). Washington, DC: Author.
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Prepared for the Bureau of Highway Safety, Department of Public Safety, State of Maine; by the Edmund S. Muskie School of Public Service, University of Southern Maine February, 1999

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Restraint Use In Passenger Vehicles By Seating Position Statewide

Maine, 1998 *All Ages*

Lap/Shoulder ^a	59%	Lap/Shoulder [®]	18%	Lap/Shoulder*	58%
No Restraint	41%	CRD-Correct	7%	CRD-Correct	*
		CRD-Incorrect	6 %	CRD-Incorrect	*
		In Lap ^b	6 %	In Lap ^b	0%
		No Restraint	63%	No Restraint	42%
U N=6,110		Ø N=39		© N=1,691	
Lap/Shoulder [®]	52%	Lap/Shoulder ^a	25%	Lan/Shoulder ^a	44%
CRD-Correct	14%	CRD-Correct	28%	CRD-Correct	14%
CRD-Incorrect	1%	CRD-Incorrect	1%	CRD-Incorrect	1%
In Lap ^b	0%	In Lap ^b	*	In Lap ^b	*
No Restraint	32%	No Restraint	46%	No Restraint	41%
A N 226		A N 110		A N 054	
<u>0</u> N=220		U N=118		0 N=251	
Lap/Shoulder [®]	56%	Lap/Shoulder [®]	58%	Lap/Shoulder*	55%
CRD-Correct	10%	CRD-Correct	22%	CRD-Correct	27%
CRD-Incorrect	0%	CRD-Incorrect	0%	CRD-Incorrect	0%
In Lap ^b	0%	In Lap ^b	0%	In Lap ^b	0%
No Restraint	34%	No Restraint	20%	No Restraint	18%
					-
Ø N = 14**		❸ N=4**		• N = 17**	

Cells in table reflect seating position in the vehicle shown below.

N = 8,470 persons (weighted data)5,973 passenger vehicles (non-commercial, no motorcycles)

- *Note*: Data are weighted, and the resulting non-integer frequencies are rounded for presentation in this table. Percentages are also rounded. The result of rounding may be percentages which sum to slightly more or less than exactly 100%.
- *Key*: [®]Wearing lap and shoulder belt ^bIn the lap of another person *less than 1%, but not zero



Restraint Use In Passenger Vehicles By Seating Position Statewide

Maine, 1998

Persons Aged 19 and Over

Lap/Shoulder ^a No Restraint 0 N=5,942	60% 40%	Lap/Shoulder ^a No Restraint ❷ N=17**	3% 97%	Lap/Shoulderª No Restraint € N = 1,401	58% 42%
Lap/Shoulderª No Restraint	45% 55%	Lap/Shoulder ^a No Restraint	57% 43%	Lap/Shoulder ^a No Restraint	47% 53%
O N = 68		6 N=9**		⊙ N=79	
Lap/Shoulderª No Restraint	57% 43%	Lap/Shoulder ^a No Restraint	100% 0%	Lap/Shoulderª No Restraint	60% 40%
Ø N=3**		© N=2**		• N=4**	

Cells in table reflect seating position in the vehicle shown below.

Note: Data are weighted, and the resulting non-integer frequencies are rounded for presentation in this table. Percentages are also rounded. The result of rounding may be percentages which sum to slightly more or less than exactly 100%.

Key: "Wearing lap and shoulder belt

*less than 1%, but not zero



Restraint Use In Passenger Vehicles By Seating Position Statewide

Maine, 1998

Males Aged 19 and Over

Lap/Shoulder ^a No Restraint 0 N=3,224	54% 46%	Lap/Shoulder ^a No Restraint ❷ N = 1 * *	0% 100%	Lap/Shoulder ^a No Restraint € N = 409	46% 54%
Lap/Shoulder ^a No Restraint	28% 72%	Lap/Shoulder ^a No Restraint	100% _0%	Lap/Shoulder ^a No Restraint	30% 70%
Lap/Shoulder [®]	100%	Lap/Shoulder [®]	0%	U N = 29** Lap/Shoulder ^a	0%
No Restraint	0%	No Restraint	100%	No Restraint Ω N = 2**	100%

Cells in table reflect seating position in the vehicle shown below.

- *Note*: Data are weighted, and the resulting non-integer frequencies are rounded for presentation in this table. Percentages are also rounded. The result of rounding may be percentages which sum to slightly more or less than exactly 100%.
- Key: "Wearing lap and shoulder belt

*less than 1%, but not zero



Restraint Use In Passenger Vehicles By Seating Position Statewide

Maine, 1998

Females Aged 19 and Over

Lap/Shoulder ^a No Restraint 0 N = 2,624	70% 30%	Lap/Shoulder ^a No Restraint ❷ N=14**	6% 94%	Lap/Shoulder ^a No Restraint ❷ N = 1,030	65% 35%
Lap/Shoulder ^a No Restraint	61% 39%	Lap/Shoulderª No Restraint	43% 57%	Lap/Shoulder ^a No Restraint	58% 42%
O N = 55		G N = 11**		O N = 68	
Lap/Shoulder ^a No Restraint Ø N = 2**	0% 100%	Lap/Shoulder ^a No Restraint ⓒ N = 0	0% 100%	Lap/Shoulder ^a No Restraint ❷ N=4**	25% 75%

Cells in table reflect seating position in the vehicle shown below.

- *Note*: Data are weighted, and the resulting non-integer frequencies are rounded for presentation in this table. Percentages are also rounded. The result of rounding may be percentages which sum to slightly more or less than exactly 100%.
- Key: "Wearing lap and shoulder belt

*less than 1%, but not zero



Restraint Use In Passenger Vehicles By Seating Position Statewide

Maine, 1998

Persons Aged 15 and Over

Lap/Shoulderª	61%	Lap/Shoulder®	5%	Lap/Shoulderª	59%
No Restraint	39%	No Restraint	95%	No Restraint	41%
U N=5,972		❷ N=20**		じ N=1,570	
Lap/Shoulderª	54%	Lap/Shoulderª	42%	Lap/Shoulderª	50%
No Restraint	46%	No Restraint	58%	No Restraint	50%
4 N=98		S N=16**		6 N=122	
Lap/Shoulderª	19%	Lap/Shoulder ^a	100%	Lap/Shoulderª	59%
No Restraint	81%	No Restraint	0%	No Restraint	41%
N = 6**	- :	8 N=1**		9 N = 7**	

Cells in table reflect seating position in the vehicle shown below.

Note: Data are weighted, and the resulting non-integer frequencies are rounded for presentation in this table. Percentages are also rounded. The result of rounding may be percentages which sum to slightly more or less than exactly 100%.

Key: "Wearing lap and shoulder belt

*less than 1%, but not zero



Restraint Use In Passenger Vehicles By Seating Position Statewide

Maine, 1998

Males Aged 15 and Over

Lap/Shoulder ^a	54%	Lap/Shoulder ^a	0%	Lap/Shoulder ^a	46%
No Restraint	46%	No Restraint	100%	No Restraint	54%
D N=3,308		e N=1**		B N=467	
Lap/Shoulder [®]	38%	Lap/Shoulder ^a	50%	Lap/Shoulder ^a	34%
No Restraint	62%	No Restraint	50%	No Restraint	66%
4 N = 30		5 N=2**		6 N=41	
Lap/Shoulder ^a	31%	Lap/Shouider*	100%	Lap/Shoulder ^a	100%
No Restraint	69%	No Restraint	0%	No Restraint	0%
• N=3**		8 N = 1**		9 N = 1**	

Cells in table reflect seating position in the vehicle shown below.

Note: Data are weighted, and the resulting non-integer frequencies are rounded for presentation in this table. Percentages are also rounded. The result of rounding may be percentages which sum to slightly more or less than exactly 100%.

Key: *Wearing lap and shoulder belt

*less than 1%, but not zero



Restraint Use In Passenger Vehicles By Seating Position Statewide

Maine, 1998

Females Aged 15 and Over

Lap/Shoulder ^a	70%	Lap/Shoulder ^a	5%	5% Lap/Shoulder®		
No Restraint	30%	No Restraint	95%	No Restraint	34%	
0 N = 2,664		2 N = 19**		❸ N=1,103		
Lap/Shoulder ^a	61%	Lap/Shoulder ^a	40%	Lap/Shoulder ^a	58%	
No Restraint	39%	No Restraint	60%	No Restraint 42		
4 N=68		6 N = 14**		6 N = 80		
Lap/Shoulder [®]	0%	Lap/Shoulder [®]	0%	Lap/Shoulder [®]	43%	
No Restraint	100%	No Restraint 09		No Restraint	57%	
1 N = 2		3 N = 0		9 N = 5**		

Cells in table reflect seating position in the vehicle shown below.

- *Note*: Data are weighted, and the resulting non-integer frequencies are rounded for presentation in this table. Percentages are also rounded. The result of rounding may be percentages which sum to slightly more or less than exactly 100%.
- Key: "Wearing lap and shoulder belt
 - ^bIn the lap of another person,
 - *less than 1%, but not zero
 - **Interpret with caution. Number of cases too small to permit calculation of meaningful percentages



Restraint Use In Passenger Vehicles By Seating Position Statewide

Maine, 1998

Infants Less Than 1 Year Old

		Lap/Shoulder ^a	0%	Lap/Shoulder ^a	0%
NOT		CRD-Correct	48%	CRD-Correct	100%
APPLICABLE		CRD-Incorrect	52%	CRD-Incorrect	0%
		In Lap ^b	0%	In Lap ^b	0%
		No Restraint	0%	No Restraint	0%
0 N = 0		2 N=2**		B N=3**	
Lap/Shoulder*	0%	Lap/Shoulder*	0%	Lap/Shoulder*	0%
CRD-Correct	100%	CRD-Correct	100%	CRD-Correct	83%
CRD-Incorrect	0%	CRD-Incorrect	0%	CRD-Incorrect	17%
In Lap ^b	0%	In Lap ^b	0%	In Lap⁵	0%
No Restraint	0%	No Restraint	0%	No Restraint	0%
4 N = 4**		S N=4**		6 N=5**	
Lap/Shoulder*	0%	Lap/Shoulder*	0%	Lap/Shoulder*	0%
CRD-Correct	0%	CRD-Correct	0%	CRD-Correct	0%
CRD-Incorrect	0%	CRD-Incorrect	0%	CRD-Incorrect	0%
In Lap ^b	0%	In Lap ^b	0%	In Lap ^b	0%
No Restraint	0%	No Restraint	0%	No Restraint	0%
7 N = 0		8 N=0		() N = 0	

Cells in table reflect seating position in the vehicle shown below.

- *Note*: Data are weighted, and the resulting non-integer frequencies are rounded for presentation in this table. Percentages are also rounded. The result of rounding may be percentages which sum to slightly more or less than exactly 100%.
- Key: "Wearing lap and shoulder belt
 - ^bIn the lap of another person

*less than 1%, but not zero



Restraint Use In Passenger Vehicles By Seating Position Statewide

Maine, 1998

Children From Birth through 3 Years

NOT APPLICABLE		Lap/Shoulder ^a CRD-Correct CRD-Incorrect In Lap ^b No Restraint	0% 60% 40% 0% 6%	Lap/Shoulder ^a CRD-Correct CRD-Incorrect In Lap ^b No Restraint	9% 75% 16% 0% 0%
1 N = 0		2 N = 8**		e N=11**	
Lap/Shoulder ^a CRD-Correct CRD-Incorrect In Lap ^b No Restraint N = 47	0% 93% 3% 0% 5%	Lap/Shoulder ^a CRD-Correct CRD-Incorrect In Lap ^b No Restraint S N = 46	5% 89% 1% 3% 3%	Lap/Shoulder ^a CRD-Correct CRD-Incorrect In Lap ^b No Restraint 6 N = 38	3% 82% 8% 3% 3%
Lap/Shoulder ^a CRD-Correct CRD-Incorrect In Lap ^b No Restraint 1 N = 2**	0% 100% 0% 0%	Lap/Shoulder ^a CRD-Correct CRD-Incorrect In Lap ^b No Restraint No Restraint	0% 63% 0% 37%	Lap/Shoulder ^a CRD-Correct CRD-Incorrect In Lap ^b No Restraint (2) N = 2**	0% 100% 0% 0%

Cells in table reflect seating position in the vehicle shown below.

- *Note*: Data are weighted, and the resulting non-integer frequencies are rounded for presentation in this table. Percentages are also rounded. The result of rounding may be percentages which sum to slightly more or less than exactly 100%.
- Key: "Wearing lap and shoulder belt

^bIn the lap of another person *less than 1%, but not zero



Restraint Use In Passenger Vehicles By Seating Position Statewide

Maine, 1998

Toddlers Aged 1 through 3 Years

				· · ·	
		Lap/Shoulder ^a	0%	Lap/Shoulder ^a	12%
NOT		CRD-Correct	65%	CRD-Correct	66%
APPLICABLE		CRD-Incorrect	35%	CRD-Incorrect	22%
		In Lap ^b	0%		0%
		No Restraint	0%	No Bestraint	0%
			070	No nostrant	0,0
1 N = 0		2 N=6**		€ N = 8	
Lap/Shoulder*	2%	Lap/Shoulder*	5%	Lap/Shoulder ^a	4%
CRD-Correct	92%	CRD-Correct	88%	CRD-Correct	82%
CRD-Incorrect	3%	CRD-Incorrect	2%	CRD-Incorrect	7%
In Lap⁵	0%	In Lap ^b	3%	In Lap⁵	4%
No Restraint	5%	No Restraint	3%	No Restraint	4%
4 N = 43		6 N=42		6 N = 33	
Lap/Shoulder [®]	0%	Lap/Shoulder ^a	0%	Lap/Shoulder ^a	0%
CRD-Correct	100%	CRD-Correct	63%	CRD-Correct	100%
CRD-Incorrect	0%	CRD-Incorrect	0%	CRD-Incorrect	0%
In Lap⁵	0%	In Lap⁵	37%	In Lap ^b	0%
No Restraint	0%	No Restraint	0%	No Restraint	0%
7 N = 2**		8 N=3**		e N = 2**	

Cells in table reflect seating position in the vehicle shown below.

- *Note*: Data are weighted, and the resulting non-integer frequencies are rounded for presentation in this table. Percentages are also rounded. The result of rounding may be percentages which sum to slightly more or less than exactly 100%.
- Key: "Wearing lap and shoulder belt
 - ^bIn the lap of another person
 - *less than 1%, but not zero
 - **Interpret with caution. Number of cases too small to permit calculation of meaningful percentages



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Restraint Use In Passenger Vehicles By Seating Position Statewide

Maine, 1998

Children Aged 4 through 10

		Lap/Shoulder [®]	50%	Lap/Shoulder ^a	73%
NOT		CRD-Correct	0%	CRD-Correct	0%
APPLICABLE		CRD-Incorrect	0%	CRD-incorrect	0%
		In Lap ^b	• 6%	In Lap ^b	0%
		No Restraint	43%	No Restraint	27%
,					
D N = 0		2 N = 10**		€ N=105	
Lap/Shoulder ^a	73%	Lan/Shoulder ^a	39%	Lan/Shoulder ^a	61%
CBD-Correct	2%	CBD-Correct	1%	CBD-Correct	1%
CRD-Incorrect	0%	CRD-Incorrect	0%	CBD-Incorrect	0%
	0%		0%		0%
No Restraint	25%	No Restraint	59%	No Restraint	38%
4 N = 86		S N = 52		6 N=81	
	-				
Lap/Shoulder ^a	0%	Lap/Shoulder [®]	51%	Lap/Shoulder ^a	80%
CRD-Correct	0%	CRD-Correct	0%	CRD-Correct	0%
CRD-Incorrect	0%	CRD-Incorrect	0%	CRD-Incorrect	0%
In Lap ^b	0%	In Lap ^b	0%	In Lap⁵	0%
No Restraint	100%	No Restraint	49%	No Restraint	20%
	·				
7 N = 1 * *		8 N=2**		9 N=5**	

Cells in table reflect seating position in the vehicle shown below.

- Note: Data are weighted, and the resulting non-integer frequencies are rounded for presentation in this table. Percentages are also rounded. The result of rounding may be percentages which sum to slightly more or less than exactly 100%.
- Key: "Wearing lap and shoulder belt ^bIn the lap of another person

*less than 1%, but not zero



Restraint Use In Passenger Vehicles By Seating Position Statewide

Maine, 1998

Children Aged 4 through 14

Lap/Shoulder [®]	100%	Lap/Shoulder ^a	53%	Lap/Shoulder ^a	76%
No Restraint	0%	CRD-Correct	0%	CRD-Correct	0%
		CRD-Incorrect	0%	CRD-Incorrect	0%
		In Lap ^b	6%	in Lap ^b	0%
		No Restraint	41%	No Restraint	24%
_					
0 N = 1		2 N = 10**		€ N=162	
1	70%	Law (Ola and Jacob	440/	Less (Oberstelles)	c20/
Lap/Shoulder*	/3%	Lap/Shoulder*	41%	Lap/Shoulder"	62%
CRD-Correct	2%	CRD-Correct	1%	CRD-Correct	1%
CRD-Incorrect	0%	CRD-Incorrect	0%	CRD-Incorrect	0%
In Lap⁵	0%	In Lap⁵	0%	In Lap⁵	0%
No Restraint	26%	No Restraint	58%	No Restraint	37%
		-		_	
4 N = 102		5 N = 62		6 N=117	
Len/Cheulder®	9404	l an /Chauldar ^a	E104	Lon/Chouldor ^a	670/
Lap/Shoulder	64 %	CDD Osmast	5170		0770
CRD-Correct	0%	CRD-Correct	0%	CRD-Correct	0%
CRD-Incorrect	0%	CRD-Incorrect	0%	CRD-Incorrect	0%
∣ In Lap⁰	0%	In Lap ^b 0%		In Lap⁰	0%
No Restraint	16%	No Restraint	49%	No Restraint	33%
_		-			
7 N = 7**		8 N = 2**		9 N=10**	

Cells in table reflect seating position in the vehicle shown below.

- *Note*: Data are weighted, and the resulting non-integer frequencies are rounded for presentation in this table. Percentages are also rounded. The result of rounding may be percentages which sum to slightly more or less than exactly 100%.
- Key: "Wearing lap and shoulder belt

^bIn the lap of another person

*less than 1%, but not zero



Restraint Use In Passenger Vehicles By Seating Position Statewide

Maine, 1998

Children Aged 11 through 14

Lap/Shoulder ^a	100%	Lap/Shoulder ^a	100%	Lap/Shoulder ^a	81%
No Restraint	0%	No Restraint	0%	No Restraint	1,9%
O N=1		2 N=1**		B N = 57	
Lap/Shoulder [®]	70%	Lap/Shoulder*	52%	Lap/Shoulder ^a	65%
No Restraint	30%	No Restraint	48%	No Restraint	35%
4 N = 17**		5 N=10**		6 N=36	
Lap/Shoulder [®]	100%	Lap/Shoulder ^a	0%	Lap/Shoulder ^a	51%
No Restraint	0%	No Restraint	0%	No Restraint	49%
Ø N=6**		8 N = 0		9 N = 5**	

Cells in table reflect seating position in the vehicle shown below.

- *Note*: Data are weighted, and the resulting non-integer frequencies are rounded for presentation in this table. Percentages are also rounded. The result of rounding may be percentages which sum to slightly more or less than exactly 100%.
- *Key*: [®]Wearing lap and shoulder belt ^bIn the lap of another person
 - *less than 1%, but not zero
 - **Interpret with caution. Number of cases too small to permit calculation of meaningful percentages



Restraint Use In Passenger Vehicles By Seating Position Statewide

Maine, 1998

Persons Aged 15 through 18

Lap/Shoulder ^a	43%	Lap/Shoulder ^a	0%	Lap/Shoulder ^a	56%
No Restraint	57%	No Restraint	100%	No Restraint	44%
0 N = 124	-	2 N = 4*	*	€ N = 1	32
Lap/Shoulder ^a	61%	Lap/Shoulder ^a	19%	Lap/Shoulder ^a	51%
No Restraint	39 %	No Restraint	81%	No Restraint	⁻ 49%
4 N=21**	×	9 N=4**	*	6 N = 2	5**
Lap/Shoulder ^a	0%	Lap/Shoulder ^a	0%	Lap/Shoulder ^a	100%
No Restraint	100%	No Restraint	0%	No Restraint	0%
1 N = 2**		3 N = 0		9 N = 1	**

Cells in table reflect seating position in the vehicle shown below.

Note: Data are weighted, and the resulting non-integer frequencies are rounded for presentation in this table. Percentages are also rounded. The result of rounding may be percentages which sum to slightly more or less than exactly 100%.

Key: "Wearing lap and shoulder belt

*less than 1%, but not zero



Restraint Use In Passenger Vehicles By Seating Position Statewide

Maine, 1998

Males Aged 15 through 18

Lap/Shoulder*	42%	Lap/Sh	noulder*	0%	Lap/Sh	oulder®	48%
No Restraint	58%	No Re	straint	0%	No Res	traint	52%
• N=	= 84	0	N = 0		€	N = 59	
Lap/Shoulder ^a	64%	Lap/Sł	noulder®	0%	Lap/Sh	oulderª	43%
No Restraint	36%	No Re:	straint	100%	No Res	straint	57%
4 N=	8**	6	N = 1 * *		6	N=12**	
Lap/Shoulder ^a	0%	Lap/Sh	noulder®	0%	Lap/Sh	oulder®	0%
No Restraint	100%	No Re:	straint	0%	No Res	straint	0%
🔊 N =	2**	8	N = 0		0	N = 0	

Cells in table reflect seating position in the vehicle shown below.

Note: Data are weighted, and the resulting non-integer frequencies are rounded for presentation in this table.

Percentages are also rounded. The result of rounding may be percentages which sum to slightly more or less than exactly 100%.

Key: *Wearing lap and shoulder belt

^bin the lap of another person

*less than 1%, but not zero



Restraint Use In Passenger Vehicles By Seating Position Statewide

Maine, 1998

Females Aged 15 through 18

Lap/Shoulder ^a	44%	Lap/Shoulder ^a	0%	Lap/Shoulder ^a	62%
No Restraint	56%	No Restraint	100%	No Restraint	38%
0 N=40		0 N=4**		6 N = 73	
Lap/Shoulder ^a	60%	Lap/Shoulder [®]	27%	Lap/Shoulder ^a	59%
No Restraint	40%	No Restraint	73%	No Restraint	41%
_		-		_	
4 N = 13**		5 N = 2**		6 N = 13**	
Lap/Shoulder ^a	0%	Lap/Shoulder*	0%	Lap/Shoulder ^a	100%
No Restraint	.0%	No Restraint	0%	No Restraint	0%
7 N = 0		8 N = 0		9 N = 1 * *	

Cells in table reflect seating position in the vehicle shown below.

Note: Data are weighted, and the resulting non-integer frequencies are rounded for presentation in this table. Percentages are also rounded. The result of rounding may be percentages which sum to slightly more or less than exactly 100%.

Key: "Wearing lap and shoulder belt

^bIn the lap of another person

*less than 1%, but not zero



Restraint Use In Passenger Vehicles By Age Statewide

Maine, 1998

AGE	Lap or Lap/Shoulder Belt	CRD Correct	CRD Incorrect	In Lap	No Restraint	<u>тот</u> N	AL
<1 Year 1 thru 3	0% 3%	89% 85%	11% 6%	0% 2%	0% 4%	18 139	100% 100%
<1 thru 3	3%	86%	6%	2%	4%	157	100%
4 thru 10 11 thru 14	64% 73%	1% 0%	0% 0%	* 0%	35% 27%	343 132	100% 100%
4 thru 14	67%	1%	0%	+	33%	475	100%
15 thru 18 19+	49% 61%	0% 0%	0% 0%	0% 0%	51% 40%	313 7,498	100%
ALL AGES	60%	2%	+	*	39%	8,443	101%

Key: *Less than 1%, but not zero

Percent of Drivers Wearing Safety Belts Under Selected Conditions

MAINE, 1998

STATE GROUP/CANADIA	N	PERCENT OF DRIVERS
(travelling in Maine)		SAFETY BELTS
Canada	(N = 14)	57%
Maine	(N = 5,614)	61%
Other New England	(N = 209)	57%
NY, NJ, PA	(N = 44)	70%
Other U.S.	(N = 92)	65%
DAY OF THE WEEK		· · · · · · · · · · · · · · · · · · ·
Sunday	(N = 500)	59%
Monday	(N = 830)	65%
· Tuesday	(N = 1,028)	63%
Wednesday	(N = 783)	56%
Thursday	(N = 1,080)	62%
Friday	(N = 927)	62%
Saturday	(N = 825)	61%
ROAD CONDITIONS		
Dry	(N = 4201)	63%
Wet	(N = 1772)	58%
WEATHER		
Sunny	(N=2,847)	64%
Rain	(N = 1,634)	59%

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TIME OF OBSERVATION	PERCENT OF DRIVERS WEARING SAFETY BELTS
7:00 - 8:00 A.M. (N=601)	64%
8:00 - 9:00 (N = 387)	59 %
9:00 - 10:00 (N = 752)	62 %
10:00 - 11:00 (N = 451)	55%
11:00 - 12:00 P.M. (N=226)	52%
12:00 - 1:00 (N=944)	65%
1:00 - 2:00 (N = 329)	60 %
2:00 - 3:00 (N = 531)	65%
3:00 - 4:00 (N = 749)	59 %
4:00 - 5:00 (N = 505)	61%
5:00 - 6:00 (N = 497)	63 %

SIZE/TYPE OF VEHICLE

Economy Car	(N = 1,516)	66%
Intermediate	(N = 1,744)	66 %
Sports, GT Car	(N = 250)	56 %
Station Wagon	(N = 295)	70 %
Van	(N = 483)	62 %
Jeep-Type	(N = 612)	66%
Pick-Up Truck	(N = 1,073)	44%

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Restraint Use, All Passengers All Passenger Vehicles All Ages All Seating Positions Urban And Rural Counties

Maine, 1998

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RESTRAINT TYPE	URBANª N	%	RURAL⁵ N	%	STATEWID N)E° %
LAP/Shoulder Belt	3,967	61%	1,067	54%	5034	60%
CRD-Correct	102	2%	37	2%	139	2%
CRD-Incorrect	6	*	4	*	10	• *
In Lap of Another	1	*	2	*	3	*
No Restraint	2,401	37%	857	44%	3,258	39%
TOTAL	6,477	100%	1,966	100%	8443	101%

Key: ^aObservations in Cumberland, York, Kennebec, Androscoggin, and Penobscot counties, weighted to adjust for traffic volume within stratum.

^bObservations in all other counties, weighted for traffic volume within stratum.

^cTotal weighted observations. Observations are weighted to adjust for oversampling rural counties relative to their traffic volume. Therefore, the statewide estimates do not reflect the simple arithmetic sum of the two strata.

*less than 1%, but not zero

Driver Safety Belt Use/Nonuse And Use/Nonuse of Restraints¹ By Others in the Vehicle, By Seating Position

Maine, 1998

When the driver IS wearing a belt...

			Restraint		63%	Restraint		82%
			No restraint 2	N = 14**	37%	No restraint	N = 1,064	18%
Restraint		82%	Restraint		88%	Restraint		81%
No restraint 4	N=149	18%	No restraint	N=65	12%	No restraint	N = 169	19%
Restraint		89%	Restraint		79%	Restraint		92%
No restraint	N=10**	11%	No restraint 3	N=5**	21%	No restraint	N = 11**	8%

When the driver is <u>NOT</u> wearing a belt...

			Restraint		11%	Restraint	27%
			No restraint		89%	No restraint	73%
			4	N = 24**		U	N = 676
Restraint		51%	Restraint		30%	Restraint	29%
No restraint		49 %	No restraint		70%	No restraint	71%
4	N = 98		6	N = 58		6	N = 108
Restraint		0%	Restraint		0%	Restraint	38%
No restraint		100%	No restraint	1	100%	No restraint	62%
0	N = 5 * *		8	N = 1 * *		9	N = 8 * *

Note: Cell entries reflect seating position in vehicle.

Key: "Restraint" means persons are traveling with proper use of safety belt or CRD. "No restraint" means persons travelling without appropriate safety restraint, or with a restraint used improperly, or in the lap of another person.



Observed Safety Belt Use Rates Reported by States to NHTSA as of February 1998

California	88%	Indiana	63%
New Mexico	87%	Nebraska	63%
Oregon	85%	Utah	63%
North Carolina	83%	Georgia	62%
Washington	82%	Missouri	62%
Hawaii	80%	New Jersey	62%
lowa	75%	Ohio	62%
Texas	75%	Wisconsin	62%
Wyoming	75%*	Maine	61%
New York	74%	South Carolina	61%
Montana	73%	Tennessee	61%
Maryland	71%	Delaware	60%
Vermont	71%	Florida	60%
Michigan	70%	Oklahoma	60%
Nevada	70%	Colorado	59%
Alaska	69%	New Hampshire	58%
South Dakota	68%	Rhode Island	58%
Louisiana	67%	West Virginia	58%
Puerto Rico	67%	Kansas	56%
Virginia	67%	Idaho	54%
Dist of Columbia	66%	Kentucky	54%
Minnesota	65%	Massachusetts	53%
Pennsylvania	65%	Alabama	52%
Connecticut	64%	North Dakota	49%
Illinois	64%	Arkansas	48%
Arizona	63%	Mississippi	48%

Population-Weighted Average — 69% * Wyoming uses a survey that is N/A and is not factored into the national average.

Source: U.S. Department of Transportation, National Highway Traffic Safety Administration, *Observed Safety Belt Use Rates Reported by States February 1998.* (1998). Washington, DC: Author.

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Table 22

Locations of Intersections Passenger restraint observation study Maine, 1998

Locations (number of intersections)

Acton (1) Andover (1) Anson (1) Auburn (4) Augusta (5) Bangor (7) Biddeford (3) Blue Hill (1) Bowdoinham (1) Brewer (2) **Brunswick** (1) Buxton (3) Camden (1) Charleston (1) Cherryfield (1) China (1) Concord Township (1) Dayton (1) Dresden (1) Eastport (1) Eliot (2) Ellsworth (3) Etna (1) Fort Fairfield (1) Fort Kent (1) Gardiner (2) Guilford (1) Hampden (2) Hartland (1) Hollis (1) Houlton (1) Kingfield (1) Kittery (1) Lewiston (6) Lisbon (1) Litchfield (1)

Livermore Falls (1) Lyman (2) Machias (1) Madawaska (1) Madison (1) Manchester (1) Milo (1) New Portland (1) New Sharon (1) Norridgewock (1) Norway (2) Orland (1) Palmyra (1) Portland (10) Presque Isle (1) Richmond (1) Rockland (1) Sanford (1) Scarborough (4) Searsport (1) Somerville (1) South Berwick (1) South Paris (2) South Portland (3) Standish (1) Union (1) Waldo (1) Waldoboro (2) Wales (1) Warren (1) Waterboro (1) Westbrook (1) Wiscasset (1) Windham (2) Winn (1) Yarmouth (2)

History of Occupant Protection Laws

EFFECTIVE <u>DATES</u>	LAWS
9-19-97	The operator is responsible for securing persons under age 18 in a safety belt/seat. Persons 18 years and older are responsible for securing themselves.
9-19-97	A law enforcement officer may take enforcement action against an operator or passenger 18 years or age or older who fails to wear a seat belt only if the officer detains the operator for a suspected violation of another law. The requirement that the operator must receive a fine for the other violation in order to be subject to a penalty for the seat belt violation has been deleted.
1-1-95	With the implementation of Tile 29A, the child safety seat law and seat belt law were combined into one law.
7-94	Driver made responsible for securing children under 4 years in a child safety seat.
10-13-93	Penalty <u>changed from fine of \$25</u> for first violation and \$50 for each subsequent violation for those aged 0 to 4 <u>to traffic infraction (up to</u> <u>\$500 fine).</u>
10-13-93	Penalty <u>changed from fine of \$25</u> for first violation and \$200 for each subsequent violation for those 4 to 19 <u>to traffic infraction (up to \$500 fine)</u> .
9-29-87	Children aged 4 to 13 years must be secured in a child safety seat or safety belt.
9-30-89	Law expanded to include children 4 to 16 years.
10-9-91	Law expanded to include persons 4 to 19 years.
9-23-83	Children aged 0 to 4 years must be secured in a child safety seat.

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