

CHILD SAFETY SEAT AND SAFETY BELT USE AMONG URBAN TRAVELERS

Results of the 1984 Survey

by

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ABSTRACT

During nine days in June 1983 and nine in June 1984, four major metropolitan areas of Virginia were surveyed to determine whether safety restraints were being used by urban travelers. Observers stationed at selected signalized intersections displayed to stopped motorists a clipboard bearing the question, Are you wearing seat belts? The observers then approached the vehicles to visually verify any response given, and recorded whether safety belts or child safety seats were being used. They also recorded the license numbers of the vehicles and the sex and approximate age of each occupant.

The passage of the Child Safety Seat Law in 1982 resulted in a dramatic increase in infant safety restraint use in 1983 over that in the 1977 baseline period. One of the objectives of the 1984 survey was to determine whether there was a change in the use of safety restraints by infants from that observed in June 1983. The rates of use found in June 1984 were nearly the same as those observed in June 1983. In 1984, 78.6% of the infant RFP's and 66.7% of the infant RP's were restrained by safety devices (child seats, safety belts, or both). The 1983 figures were 76.0% for RFP's and 66.8% for RP's (Table 6).

The 1984 data also show that when there was an infant in the car, and the infant was in a child safety seat, 30.8% of the drivers, 42.3% of the RFP's, and 81.1% of the RP's were also using restraints; when the infant was not in a child safety seat, only 11.6% of the drivers, 16.0% of the RFP's, and 15.8% of the RP's were using belts. In both cases of use and nonuse by infants, use rates by other passengers were higher in 1984 than in 1983 (Table 3). Finally, the study also identified an association between the driver's use of safety belts and the use by RFP's (Table 2).

When 1983 and 1984 survey data were compared, there was a higher rate of restraint use by drivers in 1984. Lap belts were used by 2.8% of all drivers surveyed and lap/shoulder belts were used by 17.7% in 1984; these figures were 2.0% and 14.4% in 1983 (Table 1). There was no practical or statistical difference in safety restraint use by RFP's or RP's. As in previous surveys in Virginia, a greater percentage of female drivers and RFP's used safety restraints than did males (Table 4).

The Child Safety Seat Law has been responsible for a significant increase in restraint usage by infants, and there appears to have been a "spillover effect" that has influenced increases in safety restraint usage by other categories of vehicle occupants over that found prior to the passage of this statute.

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SUMMARY OF FINDINGS

1. There was an increase in the overall percentage of drivers using safety belts between the 1983 and 1984 surveys (16.4% vs. 20.5%).
2. Use of the lap/shoulder combination accounted for 14.4% of driver belt use in 1983 and 17.7% in 1984.
3. There was no difference in the overall belt usage by RFP's and no difference in the proportions of belt usage by belt system.
4. There was no difference in the overall belt usage by RP's, but there was a decrease in the use of child seats and an increase in the use of lap belts.
5. There was a positive association between driver and RFP use of safety belts. If one used safety belts, there was an increased tendency for the other to also use them.
6. If there was an infant in the car using a child safety seat, there was an increased percentage of other occupants using safety restraints.
7. A greater percentage of female drivers and RFP's used safety belts than did males.
8. In each driver age category, belt use was higher in 1984 than in 1983.
9. In each RFP and RP age category, there was little difference in the percentages of safety belt usage in 1983 and 1984.
10. Belt use tended to be higher in newer vehicles.
11. A greater percentage of Northern Virginia drivers and RFP's used safety belts than did those in the other three survey areas.
12. Variation in the survey data relative to the time of day, area of the state, sex of the occupant, and age of the occupant were not influencing factors in safety belt usage rates.

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CONCLUSION

Based on the analysis of the data collected during June 1983 and June 1984, it was concluded that passage of the Child Safety Seat Law by the Virginia General Assembly had a major influence on the use of safety restraints by infants and a much lesser, but still positive, influence on belt usage by other vehicle occupants.

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INTRODUCTION

There is a great body of literature detailing the advantages of safety belt use by motor vehicle occupants. This literature cites the probability of reducing injuries, including fatal injuries, and projects the value of this reduction to the individual and to society in general. This evidence of injury avoidance and economic savings is so strong, and has been so for such a long period of time, that both federal and state governments have required the installation of safety belts in all new automobiles offered for sale. It is equally well known that making safety belts available does not assure their use.

Numerous efforts have been initiated by government agencies and private groups to persuade motorists to use restraining devices. There have been many public information and education campaigns using both the print and electronic media and star personalities, as well as offers of various awards (in one instance new cars) to increase safety belt usage. The public is also familiar with various engineering approaches, such as the installation of warning buzzers and lights, interlock systems, the three-point belt, and inertial reels, to promoting the use of restraints. All 50 states now require the use of child safety seats, although there are variations in the statutes. In addition, legislation was introduced during the 1984 and 1985 sessions of the Virginia General Assembly that would require the use of safety belts by drivers and front seat occupants. As yet, the legislature has not passed such a statute.

Through the years, there have been a number of investigations to determine the percentage of motor vehicle occupants using safety belts. In the early studies, the investigators used questionnaire and interview formats, while in later ones they have used a variety of observational techniques. It has been found that motorists responding to questions on their use of safety belts generally give the socially acceptable affirmative reply. Observations, however, have shown their actual belt use to be less than that stated.

Over the past five years, there have been a number of events that could influence the rate of safety belt usage in Virginia. The 1982 General Assembly passed a statute that became effective January 1, 1983, requiring children younger than 4 years of age to be restrained in child

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safety seats. Also, there have been major changes in the size, weight, and design of vehicles, both domestic and imported, that should affect safety belt use. In addition, there is the possibility that efforts to promote safety consciousness over the intervening years has produced an increase in the use of safety belts. Finally, publicity in relation to a mandatory safety belt statute in Virginia may have led some citizens to alter their belt use patterns.

PURPOSE

This phase of the study was initiated to determine the extent to which the law mandating use of child safety seats changed the percentage of infants using these safety devices. A second aspect of the study was to determine the extent of safety belt usage by all vehicle occupants and whether the percentages had changed since the survey in 1983.

SURVEY METHODOLOGY

In June 1983 and 1984, observers surveyed four metropolitan areas of the state; namely, Western Virginia (Roanoke-Salem-Vinton), Northern Virginia (Alexandria-Arlington-Fairfax-Belvoir), Central Virginia (Richmond-Henrico-Chesterfield), and Eastern Virginia (Norfolk-Virginia Beach-Hampton). Each day of the week, Sunday through Saturday, was sampled for at least one full day, and Thursday and Friday were sampled for two days.

Three sites located in different sections of the survey areas were used each day. They were chosen because the thoroughfares carried relatively high traffic volumes and provided adequate and safe vantage points for observations. Each day both primary and secondary routes were sampled. Although the study sites did not include any interstate highways, vehicles going to and from such roadways were surveyed. Three time periods were used: (1) 8:00 a.m. to 10:30 a.m., (2) 11:30 a.m. to 2:00 p.m., and (3) 3:30 p.m. to 6:00 p.m.

The observations were made at signalized intersections, and usually occupants of vehicles in the lane adjacent to the curb were surveyed. Traffic flow dictated the use of other lanes in some instances. A clipboard bearing the question, Are you wearing seat belts? was displayed by the observer to alert travelers to the purpose of the survey. After the clipboard was presented, the observer approached the car from the front at a 45° angle. Approaching at the right front fender, the observer walked along the side and past the vehicle while noting and recording the use of safety restraints. Upon seeing the question, most

occupants would reply. This reply was acknowledged, but only information verified by the observer was recorded. Persons volunteering information were acknowledged, but their comments were recorded only when their vehicles were within the guidelines specified for data collection.

At each site the observers recorded whether the driver and passengers were using only the lap belt, both the lap and shoulder belts, or no form of restraint. In addition, they recorded whether any of the infants were in approved child seats. An "approved child seat" was defined as any of those models on the list distributed by the Virginia State Police as meeting their specification. Not included were models that hooked over the car seat or those that clearly were not adequately anchored to the vehicle. The survey personnel also recorded the sex and approximate age of each occupant, their seat position in the vehicle, and the license number of the vehicle (see Figure 1).

Occupant age was divided into five categories: (1) infants (up to 4 years old), (2) pre-adults (4 to 16 years), (3) young adults (17 to 30 years), (4) middle adults (31 to 60 years), and (5) older adults (over 60 years). Vehicle age was divided into four categories: (1) pre-1963, no restraint system required by law to be installed, (2) 1963-1971, restraint systems required to be installed in vehicles prior to sale, (3) 1972-1975, a restraint system installed and coupled to a continuous buzzer, an interlock device or both, (4) 1976 to present, a restraint system installed and coupled to a 4 to 8 second buzzer. To determine the vehicle age category, the observers recorded license plate numbers on the data sheets. These numbers were submitted to personnel of the Vehicle Services Administration (VSA) at the Division of Motor Vehicles (DMV), who accessed the vehicle file and provided the model years. Model year data was then entered onto the computer tape and this information was processed at the same time as all the other data recorded on the survey forms. Because of the way vehicle license data are kept, the period of time that elapsed between data collection and submittal of license plate numbers to the DMV, the buying and selling of cars by state residents, and the mobility of the population, there was a small percentage of the surveyed vehicles for which model year designations could not be determined. This information is noted in the appropriate tables in the report.

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FIGURE 1

SAFETY BELT USAGE SURVEY FORM

Date _____ Start Time _____ Location _____
 Sheet No. _____ Stop Time _____ At _____

License Number	Driver		Mid Front		R Front		L Rear		Mid Rear		R Rear	
	Belts	Sex	Belts	Age	Belts	Age	Belts	Age	Belts	Age	Belts	Age
	L S	M P	L S	M P	L S	M P	L S	M P	L S	M P	L S	M P
	N F	M O	N A	F M	N A	F M	N A	F M	N A	F M	N A	F M
	L S	M P	L S	M P	L S	M P	L S	M P	L S	M P	L S	M P
	N F	M O	N A	F M	N A	F M	N A	F M	N A	F M	N A	F M
	L S	M P	L S	M P	L S	M P	L S	M P	L S	M P	L S	M P
	N F	M O	N A	F M	N A	F M	N A	F M	N A	F M	N A	F M
	L S	M P	L S	M P	L S	M P	L S	M P	L S	M P	L S	M P
	N F	M O	N A	F M	N A	F M	N A	F M	N A	F M	N A	F M
	L S	M P	L S	M P	L S	M P	L S	M P	L S	M P	L S	M P
	N F	M O	N A	F M	N A	F M	N A	F M	N A	F M	N A	F M
	L S	M P	L S	M P	L S	M P	L S	M P	L S	M P	L S	M P
	N F	M O	N A	F M	N A	F M	N A	F M	N A	F M	N A	F M
	L S	M P	L S	M P	L S	M P	L S	M P	L S	M P	L S	M P
	N F	M O	N A	F M	N A	F M	N A	F M	N A	F M	N A	F M
	L S	M P	L S	M P	L S	M P	L S	M P	L S	M P	L S	M P
	N F	M O	N A	F M	N A	F M	N A	F M	N A	F M	N A	F M

Restraint Use

Occupant Age

- L = Lap
- S = Shoulder
- N = None
- A = Approved Child Seat
- I = Infant (0-3 Yrs.)
- P = Pre Adult (4-16 Yrs.)
- Y = Young Adult (17-30 Yrs.)
- M = Middle Adult (31-60 Yrs.)
- O = Older Adult (61 and Up)

Figure 1. Safety belt usage survey form.

This survey was the sixth in the series and the third conducted during summer months, the first three having been conducted during February. The series was originally designed to determine whether there were fluctuations over time in the percentages of persons using seat belts and shoulder straps. The fourth was conducted during June 1977 and was the first to include observations on the use of child restraints. This information on child restraint usage was added at the request of the director of the Highway Safety Division. Subsequent to the 1977 survey, it was determined that yearly updates were not necessary and that surveys would be conducted following events expected to change the pattern of safety belt usage. The first significant event to occur after the 1977 survey was the passage of Senate Bill 413 during the 1982 session of the Virginia General Assembly. This statute is referred to as the Child Safety Seat Law and went into effect January 1, 1983. Therefore, during June 1983, nearly 6 months after the effective date of the statute, observers were in the field collecting data on the use of child restraints. At the same time, data were collected on the use of safety belts by other vehicle occupants. A year later, data were being collected during the summer of 1984 in an effort to determine whether there was a change in belt use patterns by vehicle occupants.

ANALYSIS

During the nine-day survey period in June 1983, data were collected on 9,737 occupants of 6,498 vehicles. The 1984 figures encompassed 8,981 occupants in 5,581 vehicles. Data on the number and percentages of individuals surveyed by time period, age of the automobile, area of the state, sex of the occupant, and age of the occupant are presented in Appendix Tables A-1 through A-5 and are discussed immediately below.

The number and percentage of vehicles surveyed during each of the three daily time periods are contained in Appendix Table A-1. When 1983 and 1984 time period data were compared, there was no difference in the proportions of vehicles surveyed. Each year fewer vehicles were observed during the 8:00 a.m. to 10:30 a.m. period and more during the 3:30 p.m. to 6:00 p.m. period. During 1983, 26.8% of the vehicles were surveyed in the morning, 34.3% at midday, and 38.9% in the afternoon. For 1984, the percentages were 27.2%, 34.0%, and 38.8%, respectively. These figures indicate that differences in the time period in which vehicle occupants were observed for safety belt usage were not a factor in any differences found in usage patterns.

Vehicle age data are contained in Appendix Table A-2. A new data category was added in 1984 because of an inability to identify the age of a small percentage (1.1%) of the vehicles for which belt use data were available. During both 1983 and 1984, the greatest percentage of

vehicles, 68.5% (1983) and 74.3% (1984), were in the 1976-1984 age category. This is not surprising in light of the years during which the data were collected and the number of model years in this vehicle age grouping. Corresponding to the greater percentage of vehicles in the 1976-1984 category, there were fewer vehicles in the 1972-1975 and the 1963-1971 categories. The figures for these two categories were 15.5% and 8.7% in 1984 and 19.4% and 11.9% in 1983. These data are significant in that as the newer models, with their more comfortable and convenient to use safety belts, make up an increasingly greater percentage of vehicles surveyed, there should be a greater use by the motoring public, all other factors being equal.

Appendix Table A-3 contains data on the number and percentage of vehicles surveyed in each of the four areas of the state. There was no difference in northern area percentages during 1983 (31.8%) and 1984 (31.6%). In 1984, there were slight decreases in the central (25.7% vs. 23.9%) and eastern (22.4% vs. 20.4%) area percentages, and an increase in the western area (20.1% vs. 24.1%). The observers worked three days, one a Sunday with its lower traffic volumes, in the northern area and two days in each of the other three areas. In light of the days worked, it appears that the percentage of vehicles surveyed in the eastern area was slightly underrepresented in 1984, while the percentage of vehicles in the western area was slightly underrepresented during the 1983 survey. These minor differences will not influence the overall state safety belt usage figures.

The data on the sex of the occupant are presented in Appendix Table A-4. The differences in the 1983 and 1984 percentages of male and female drivers and passengers were very minor. There were 2% more males in each of the occupant seating categories in 1984. Each year, slightly over half of the drivers, a third of the right front passengers (RFP), and 40% of the remaining passengers (RP) were male. Differences in the two years percentages are so slight that they should not influence statewide driver and passenger safety belt use patterns.

Appendix Table A-5 contains data on the age of the occupants surveyed. There was a difference in the age distributions of both drivers and passengers between the two surveys. In 1984, 34.8% of the drivers were young adults, 55.5% were middle adults, and 9.5% were older adults. The corresponding percentages during 1983 were 27.5%, 69.0%, and 3.5%. Based on the experiences of previous surveys, a greater percentage of young and older adult drivers in 1984 should hold down the statewide driver safety belt use percentage, because these drivers have traditionally been the ones with the lowest usage rates. For RFP's, the most significant changes were in the middle and older adult categories. In 1984, 39.7% and 12.5% of all RFP occupants were in these age categories and in 1983 the figures were 48.3% and 7.9%. In addition, during 1984 there were greater percentages of pre- (16.2% vs. 14.5%) and

young (29.5% vs. 26.9%) adult RFP's than in 1983. The greater percentages of young and older adults and the smaller percentage of middle adults during the 1984 survey should have a negative effect on the overall use of safety belts by RFP's during the latter survey. There were also differences in the age distributions for the RP's. In 1984, there were smaller percentages of infants, young adults, and middle adults, and greater percentages of pre- and older adults. This distribution should be a negative influence on belt use rates for RP's in 1984.

During the previous five surveys, there were few differences in the classifications of vehicles and occupants that would have been an influencing factor on statewide safety belt use. For the 1984 survey, the distributions of data according to the time of day when the occupants were observed, their sex, and the area of the state were similar to previous surveys. The influence of a greater percentage of newer cars, with the accompanying positive safety belt use effect, coupled with a greater percentage of young and older adult drivers and passengers, with the accompanying negative effect, will be determined in the remainder of this report.

The data in Table 1 show the overall use of safety belts by drivers and passengers. During the 1983 survey, 16.4% of all drivers used safety belts and in 1984, 20.5% of all drivers used them. The use of lap belts only accounted for 2.0% of total use in 1983 and 2.8% in 1984. Use of the lap/shoulder combination accounted for 14.4% of total use in 1983 and 17.7% in 1984. For RFP's, there was little real difference in total use rates, 16.2% in 1983 and 16.7% in 1984. While there were small changes in use rates of child seats, lap belts, and lap/shoulder belts, no change was greater than 0.5%. For practical purposes, safety belt use by RFP's was the same during both the 1983 and 1984 surveys. For RP's, the use of child seats as a proportion of all passengers in these seating positions was 15.7% in 1983 and 11.4% in 1984. RP lap belt use was 6.8% in 1983 but was 12.1% in 1984, a significant change. While there was a slight drop in the use of lap/shoulder belts by RP's, from 1.1% to 0.6%, these figures have little real impact because so few automobiles are equipped with these belt systems for passengers in these seating positions. The changes in use by belt system resulted in little change in overall RP use; in 1983 23.6% of all RP's used some form of safety restraint and in 1984 the percentage was 24.1%.

Even though there was a 25% increase in belt use by drivers, there was little or no change in belt use by passengers. It can also be seen that the rate of belt use by both drivers and passengers has remained at relatively low rates since the first survey in 1974.

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Table 1
Use of Seat Belts

Occupant Seat Position	Restraint Used	1983		1984	
		Number	Percent	Number	Percent
Driver	Lap Only	132	2.0	165	2.8
	Lap/Shoulder	936	14.4	1,030	17.7
	None	5,427	83.6	4,656	79.5
Right Front Passenger	Child Seat	33	1.6	24	1.2
	Lap Only	51	2.5	59	3.0
	Lap/Shoulder	246	12.1	247	12.5
	None	1,700	83.7	1,653	83.4
Remaining Passengers	Child Seat	190	15.7	131	11.4
	Lap Only	82	6.8	139	12.1
	Lap/Shoulder	13	1.1	7	0.6
	None	922	76.4	870	75.9

Data on the association between driver and passenger uses of safety belts are contained in Table 2. During the 1983 survey, when drivers were not using safety belts, 94.6% of the RFP's and 82.8% of the RP's also were not using them. When survey data were collected in 1984, 94.0% of the RFP's and 84.6% of the RP's were not using belts when riding in cars with unbelted drivers. As these figures show, there was little difference between the 1983 and 1984 data. In addition, there was little change in the use of each of the three belt systems (child seats, lap belts, and lap/shoulder belts) by RFP's. However, a smaller percentage of all RP occupants used child seats in 1984 than in 1983 (9.9% vs. 13.9%) and more used lap belts (5.4% vs. 3.1%).

In 1983, when drivers were using only a lap belt, 73.0% of the RFP's and 48.0% of the RP's were also using a safety restraint. In 1984, 73.7% of the RFP's and 53.8% of the RP's were belted when the driver was using a lap belt. During both years and in both seating categories, the lap belt accounted for the greatest percentage of use. The numbers of individuals in each of these categories are very small, primarily because there are so few vehicles in the survey sample in which only a lap belt could be used.

Restraint system usage by RFP's and RP's was greatest, during both surveys and for both seating categories, when the driver was using the lap/shoulder combination. During 1983, 70.2% of the RFP's and 56.6% of the RP's were using safety restraints. Most of the RFP usage was accounted for by the use of lap/shoulder belts (64.5%) and most of the

RP usage was accounted for in the use of child seats (25.8%) and lap belts (24.2%). During 1984, 64.0% of the RFP's and 56.0% of the RP's were using safety restraints. The majority of the RFP usage was the result of the use of lap/shoulder belts (58.7%) and most of the RP usage was in the use of child seats (18.8%) and lap belts (34.5%). Overall, RFP belt use as a function of driver belt use declined from 1983 to 1984, while that for RP's remained constant. There was, however, a significant shift in belt system use by the RP's; child seat use (as a percentage of all passengers surveyed) declined from 25.8% to 18.8% and lap belt use increased from 24.2% to 34.5%.

The data on the association between driver and passenger use of safety restraints show that as drivers progressively increased their own driving safety through the use of lap and lap/shoulder belts, there was also an increase in the use of these same safety devices by the passengers.

The focus of the data in Table 3 is on whether drivers and passengers use restraint systems when infants are in the vehicle. The 1983 survey data show that if the infant was not in a child seat, only 4.6% of the drivers, 9.8% of the RFP's, and 8.7% of the RP's were using a safety restraint. In 1984, there was a significant increase in use rates when the infant was not restrained by a child safety seat; 11.6% of the drivers, 16.0% of the RFP's, and 15.8% of the RP's were belted in some manner. If the infant was protected by a child seat in 1983, 25.1% of the drivers, 17.2% of the RFP's, and 23.1% of the RP's were also protected by a safety restraint. During 1984, if the infant was in a child seat, 30.8% of the drivers, 42.3% of the RFP's, and 81.1% of the RP's were using safety restraints. As these data show, the most important change in use rates between the two surveys was the extremely large increase in safety restraint usage rates by RP occupants (23.1% vs. 81.1%) when there was an infant in the vehicle and the infant was in a child seat. Driver and passenger use rates were higher in 1984 than in 1983, regardless of whether the infants were in a child safety seat or not. During both years, greater percentages of drivers and passengers were using restraint systems when the infant was in a child safety seat. This is an indication of a spillover effect of the Child Safety Seat Law.

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Table 2

Association Between Driver and Passenger Use of Seat Belts

<u>Occupant Seat Position</u>	<u>Occupant Use Of Belts</u>	<u>When Driver Not Using Belts</u>			
		<u>1983</u>		<u>1984</u>	
		<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Right	Child Seat	25	1.5	18	1.1
Front	Lap Only	17	1.0	24	1.5
Passenger	Lap/Shoulder	50	3.0	55	3.4
Using	None	1,598	94.6	1,528	94.0
	Child Seat	139	13.9	89	9.9
Remaining	Lap Only	31	3.1	48	5.4
Passenger	Lap/Shoulder	3	0.3	1	0.1
Using	None	830	82.8	760	84.6

<u>Occupant Seat Position</u>	<u>Occupant Use Of Belts</u>	<u>When Driver Using Lap Belts</u>			
		<u>1983</u>		<u>1984</u>	
		<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Right	Child Seat	0	----	3	7.9
Front	Lap Only	25	67.6	21	55.3
Passenger	Lap/Shoulder	2	5.4	4	10.5
Using	None	10	27.0	10	26.3
	Child Seat	4	16.0	0	----
Remaining	Lap Only	8	32.0	14	53.8
Passenger	Lap/Shoulder	0	----	0	----
Using	None	13	52.0	12	46.2

<u>Occupant Seat Position</u>	<u>Occupant Use Of Belts</u>	<u>When Driver Using Lap & Shoulder Belts</u>			
		<u>1983</u>		<u>1984</u>	
		<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Right	Child Seat	8	2.7	3	0.9
Front	Lap Only	9	3.0	14	4.4
Passenger	Lap/Shoulder	194	64.5	188	58.7
Using	None	90	29.9	115	35.9
	Child Seat	46	25.8	42	18.8
Remaining	Lap Only	43	24.2	77	34.5
Passenger	Lap/Shoulder	10	5.6	6	2.7
Using	None	79	44.4	98	44.0

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The data in Table 4 depict safety belt use according to the sex of the occupant. During 1984, male and female driver, female RFP, and male RP use was greater than in 1983. In 1983, 15.5% of the male and 17.5% of the female drivers were using safety belts, while in 1984, 19.5% of the male and 21.9% of the female drivers were using them. For RFP's, usage rates were 15.0% in 1983 and 14.2% in 1984 for males, and 16.9% in 1983 and 17.9% in 1984 for females. These changes are of little practical importance. For RP's, usage rates were 24.0% in 1983 and 27.8% in 1984 for males, and 23.4% in 1983 and 21.3% in 1984 for females. During 1983 and 1984, female drivers and RFP's were more likely to be using safety devices than were males. Male RP's had higher use rates during both surveys than did female RP's.

Table 3

Belt Use of Other Occupants In Vehicles With
Infant Passengers

Use By Other Occupants	Belt Use	When Infants Were in Child Seats			
		1983		1984	
		Number	Percent	Number	Percent
Driver	Belted	51	25.1	44	30.8
	Not Belted	152	74.9	99	69.2
Right Front Passenger	Belted	16	17.2	41	42.3
	Not Belted	77	82.8	56	57.7
Remaining Passengers	Belted	18	23.1	146	81.1
	Not belted	60	76.9	34	18.9

Use By Other Occupants	Belt Use	When Infants Were Not in Child Seats			
		1983		1984	
		Number	Percent	Number	Percent
Driver	Belted	5	4.6	10	11.6
	Not Belted	104	95.4	76	88.4
Right Front Passenger	Belted	9	9.8	12	16.0
	Not Belted	83	90.2	63	84.0
Remaining Passengers	Belted	16	8.7	20	15.8
	Not Belted	167	91.3	107	84.2

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Table 4

Belt Use by Sex of Occupant

<u>Occupant Seat Position</u>	<u>Sex Of Occupant</u>	<u>1983</u>		<u>1984</u>	
		<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Driver	Male	538	15.5	638	19.5
	Female	530	17.5	565	21.9
Right Front Passenger	Male	98	15.0	97	14.2
	Female	232	16.9	233	17.9
Remaining Passengers	Male	120	24.0	139	27.8
	Female	165	23.4	138	21.3

Data on safety belt use by survey time period are contained in Table 5. There was a four percentage point difference in driver use rates during each of the three daily time periods between the two years of survey data. Driver use was 16.5% in the morning, 14.5% at midday, and 18.1% in the afternoon during the 1983 survey. The 1984 driver use rates were 20.7% in the morning, 18.5% at midday, and 22.1% in the afternoon. Driver use patterns by daily time period are consistent with the change in overall driver use of safety belts. For each time period, the 1984 use rate was nearly 25% greater than the 1983 rate. For RFP's, the 1983 use rate was 20% lower in the morning (16.3% vs. 19.6%), nearly the same at midday (15.0% vs. 15.4%), and nearly 6% higher in the afternoon (17.3% vs. 16.3%), than the rates observed in 1984. For RP's, the 1983 use rates were nearly the same in the morning (35.1% vs. 34.9%), slightly higher at midday (20.1% vs. 19.1%), and 13% lower in the afternoon (21.3% vs. 24.0%) than the 1984 use rates. Except for drivers, variations in use rates for 1983 and 1984 were not of a nature to indicate any trends in safety belt usage.

Table 6 contains safety belt use data according to the age of the occupant. There were significant differences in the percentages of belt use by the two groups of drivers between the ages of 17 and 60. In 1983, 14.3% of the young adults (17-30 years of age) and 17.3% of the middle adults (31-60 years) were observed to be using safety restraints. In 1984, the use rates were 22.4% for young adults and 25.1% for middle adults. These figures represent nearly a 57% increase in belt use by young adult drivers and a 45% increase for middle adult drivers. There was no real difference in driver use rates for older adults (60 + years), 16.3% (1983) vs. 16.6% (1984) during the two surveys.

Table 5

Belt Use by Time Periods

<u>Occupant Seat Position</u>	<u>Period</u>	<u>1983</u>		<u>1984</u>	
		<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Driver	A.M.	287	16.5	331	20.7
	Mid.	324	14.5	369	18.5
	P.M.	457	18.1	503	22.1
Right Front Passenger	A.M.	71	16.3	82	19.6
	Mid.	114	15.0	119	15.4
	P.M.	145	17.3	129	16.3
Remaining Passengers	A.M.	86	35.1	80	34.9
	Mid.	97	20.1	90	19.1
	P.M.	102	21.3	107	24.0

When the rates of safety belt use by RFP's were categorized by the age of the occupant, there were two cases where the 1984 rates were higher, two where they were lower, and one that was the same as it was in 1983. In 1984, 78.6% of the infants and 14.9% of the young adults were using safety belts as compared to 76.0% and 11.0% in 1983. The difference in infant rates was a relatively small 3.4%, but the difference in young adult rates was in excess of 35%. In 1984, 20.1% of the pre-adult RFP's and 12.1% of the older adults were using belts; while the 1983 rates were 21.8% and 15.0%, respectively. For pre-adults, use in 1984 was down nearly 8%; and use by older adults was 19% lower in 1984. There was no difference in 1983 and 1984 use rates by middle adults, 14.7% each year.

There were only two categories of RP data, those for infants and pre-adults, where there were a sufficient number of observations of passengers for the safety belt use data to have significance. There was no difference in infant use rates in 1983 and 1984 (66.8% vs. 66.7%). However, there was almost a 33% difference in use rates by pre-adults. In 1983, 15.7% of them used a safety restraint, while in 1984 it was 20.8%.

The most important safety belt use finding relating to occupant age was the large increases in use by young adult drivers and RFP's. While it is encouraging to see this trend toward increased use, it is discouraging that only slightly over 22% of the drivers and just under 15% of the RFP's were restrained by safety belts when observed during the summer of 1984.

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Table 6

Belt Use by Age of Occupant

<u>Occupant Seat Position</u>	<u>Age of Occupant</u>	<u>1983</u>		<u>1984</u>	
		<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Driver	Pre-Adult	0	----	1	20.0
	Young Adult	254	14.3	457	22.4
	Middle Adult	777	17.3	652	25.1
	Older Adult	37	16.3	93	16.6
Right Front Passenger	Infant	38	76.0	33	78.6
	Pre-Adult	64	21.8	64	20.1
	Young Adult	60	11.0	87	14.9
	Middle Adult	144	14.7	116	14.7
Older Adult	Older Adult	24	15.0	30	12.1
	Infant	191	66.8	140	66.7
	Pre-Adult	81	15.7	116	20.8
	Young Adult	7	3.7	6	3.8
Middle Adult	Middle Adult	4	2.3	11	7.3
	Older Adult	2	5.0	4	6.0

Data on safety belt use by vehicle age are presented in Table 7. As previously described, a vehicle age category entitled "undefined" was added in 1984 as the result of problems that arose in classifying all vehicle license numbers. Safety belt usage rates were higher in 1984 for drivers of 1963-1971, 1972-1975, and 1976-1984 model year cars. The 1983 rates were 6.9%, 14.2%, and 18.8%, while those in 1984 were 12.9%, 14.7%, and 22.8%. There were too few vehicles in the pre-1963 category for use data to be meaningful, and there were no 1983 data in the undefined category to use for comparison. These figures represent a 87% difference in the 1963-1971's, 4% in the 1972-1975's, and 21% in the 1976-1984's. Driver usage increased with the recency of the model year classification. While this trend is in the right highway safety direction, it must be recognized that belt use is very low, even in the best case shown.

The 1984 survey data indicate that RFP safety belt use was higher than that in 1983 for the 1963-1971 vehicles, lower for the 1972-1975 vehicles, and of little practical difference for the 1976-1984 vehicles. For these vehicle age classifications, the 1983 use rates were 8.2%, 14.1%, and 18.3% respectively, while the 1984 rates were 10.6%, 8.7%, and 19.0%. These figures represent a 29% difference in the 1963-1971's,

38% in the 1972-1975's, and 4% in the 1976-1984's. The highest rate of use, 19.0%, was observed during the summer of 1984 and was for the 1976-1984 model year cars, the vehicle age classification having the greatest number of vehicles.

The 1983 rates of safety belt use by RP's were 15.9% for the 1963-1971's, 22.9% for the 1972-1975's, and 25.1% for the 1976-1984's. The 1984 usage rates were 17.4%, 16.7%, and 26.0% respectively. The 1984 RP use rates were 9% greater for the 1963-1971's, 27% lower for the 1972-1975's, and nearly 4% higher for the 1976-1984's. During both surveys, the highest RP use rates were for the newest classification of vehicles, which also contained more than two-thirds of the vehicles observed.

Table 7

Belt Use By Vehicle Age

<u>Occupant Seat Position</u>	<u>Vehicle Age</u>	<u>1983</u>		<u>1984</u>	
		<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Driver	Pre-63	3	15.8	1	4.8
	63-71	53	6.9	66	12.9
	72-75	178	14.2	133	14.7
	76-84	834	18.8	991	22.8
	Undefined	---	----	12	17.9
Right Front Passenger	Pre-63	1	14.3	0	----
	63-71	19	8.2	16	10.6
	72-75	60	14.1	26	8.7
	76-84	250	18.3	286	19.0
	Undefined	---	----	2	11.8
Remaining Passengers	Pre-63	0	----	0	----
	63-71	21	15.9	15	17.4
	72-75	51	22.9	28	16.7
	76-84	213	25.1	231	26.0
	Undefined	---	----	3	50.0

Safety belt use data by sex and age of the occupant are presented in Table 8. In general, female drivers had a higher rate of use than did males, and rates of use in 1984 were higher than those in 1983 for each occupant age category. The exception to this trend was by older adult male drivers during 1983. Belt use rates by young, middle, and older adult male drivers were 12.4%, 16.5%, and 17.3% in 1983 and 20.3%, 19.8%, and 14.9% in 1984. Belt use rates by young, middle, and older adult female drivers were 19.0%, 18.3%, and 14.8% in 1983 and 24.7%, 20.4%, and 19.4% in 1984. A more significant factor than male/female differences is that driver belt use in 1984 was higher for both males and females in every age category, with the exception of older adult males. Use rates were nearly 64% higher for young males and 30% higher for young females in 1984. This is an important change in light of the fact that young drivers, especially males, are the most risk prone of all drivers. The belt use rates were 20% higher for middle adult males, nearly 12% higher for middle adult females, and 31% higher for older adult females. While driver safety belt use rates were higher during 1984, it should be observed that the rates of use generally were under 20% of all drivers observed.

In both 1983 and 1984, female RFP's had a higher rate of safety belt use in every occupant age category, with the exception of infants surveyed in 1984. In 1983, female use rates were 77.4% for infants, 22.2% for pre-adults, 12.8% for young adults, 15.4% for middle adults, and 16.3% for older adults as compared to 73.7%, 21.4%, 7.7%, 12.7%, and 9.7% for males. The 1984 female RFP use rates were 75.0%, 21.6%, 17.6%, 15.8%, and 13.3% and those for males were 85.7%, 18.7%, 10.2%, 11.9%, and 8.3%. The 1984 safety belt use rates were lower than those in 1983 for female infants, male and female pre-adults, male middle adults, and male and female older adults. The 1984 usage rates were higher for male infants, male and female young adults, and female middle adults. There was a 32% increase in belt use by young male RFP's, from 7.7% in 1983 to 10.2% in 1984, and a 38% increase for young females, from 12.8% to 17.6%. This is an encouraging trend, but the fact remains that fewer than 18% of the young, middle, and older adult RFP's were observed using safety restraints.

Use rates were also computed for the various age and sex categories of passengers in the remaining seating positions. A review of Table 8 indicates just how few young, middle, and older adult RP's were using safety belts. In fact, so few of these occupants were using belts as to make the percentages of use relatively meaningless. There was little difference in 1983 and 1984 use rates by male (72.5% vs. 70.8%) and by female (63.8% vs. 63.2%) infants, but use rates both years were higher for the males. Safety belt usage was nearly 28% higher in 1984 for male pre-adults (16.5% vs. 21.1%) and nearly 38% higher for female pre-adults

(14.8% vs. 20.4%). Again, as for infants, males had higher rates of safety restraint usage during both surveys.

Table 9 presents data on safety belt use according to the area of the state surveyed. Driver safety belt use rates were higher in 1984 in each of the four survey areas. They were 38% higher in the western area (11.3% vs. 15.6%), 20% higher in the northern area (22.7% vs. 27.3%), 19% higher in the central area (13.9% vs. 16.6%), and 36% higher in the eastern area (15.1% vs. 20.5%). In both years, the highest rate of use was in the northern area, the part of the state with the greatest average income and the highest average educational level, followed, in order, by the eastern, central, and western areas.

Observed safety belt use by RFP's was lower in two areas, higher in one, and no different in one, during 1984. There was a 3% drop in the western area (13.5% to 13.1%), no change in the northern area (20.9% each year), a 6% drop in the central area (14.5% to 13.6%), and an 18% increase in the eastern area (14.2% to 16.8%). As with drivers, RFP belt use was highest in the northern area and lowest in the western area of the state.

For RP's, the 1984 rates of belt use were 7% lower in the western (23.8% to 22.1%), 18% lower in the central (25.8% to 21.1%), 13% higher in the northern (21.7% to 24.6%), and 14% higher in the eastern (24.0% to 27.3%) areas. In general, use of safety belts occurred at a higher rate among RP's in each survey area than that observed for drivers and RFP's in both the 1983 and 1984 surveys.

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Table 8

Belt Use by Sex and Age of Occupant

<u>Occupant Seat Position</u>	<u>Age of Occupant</u>	<u>1983</u>		<u>1984</u>	
		<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
<u>MALES:</u>					
Driver	Pre-Adult	0	----	1	25.0
	Young Adult	107	12.4	218	20.3
	Middle Adult	407	16.5	369	19.8
	Older Adult	24	17.3	50	14.9
Right Front Passenger	Infant	14	73.7	12	85.7
	Pre-Adult	34	21.4	31	18.7
	Young Adult	15	7.7	22	10.2
	Middle Adult	32	12.7	27	11.9
Older Adult	Older Adult	3	9.7	5	8.3
	Infant	71	72.5	68	70.8
	Pre-Adult	45	16.5	58	21.1
	Young Adult	3	4.8	3	4.5
Remaining Passengers	Middle Adult	1	1.7	8	17.4
	Older Adult	0	----	2	12.5
<u>FEMALES:</u>					
Driver	Pre-Adult	0	----	0	----
	Young Adult	147	19.0	239	24.7
	Middle Adult	370	18.3	283	20.4
	Older Adult	13	14.8	33	19.4
Right Front Passenger	Infant	24	77.4	21	75.0
	Pre-Adult	30	22.2	33	21.6
	Young Adult	45	12.8	65	17.6
	Middle Adult	112	15.4	89	15.8
Older Adult	Older Adult	21	16.3	25	13.3
	Infant	120	63.8	72	63.2
	Pre-Adult	36	14.8	58	20.4
	Young Adult	4	3.1	3	3.2
Remaining Passengers	Middle Adult	3	2.6	3	2.7
	Older Adult	2	6.3	2	3.9

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Table 9

Belt Use by Area Surveyed

<u>Occupant Seat Position</u>	<u>Survey Area</u>	<u>1983</u>		<u>1984</u>	
		<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Driver	Western	148	11.3	221	15.6
	Northern	468	22.7	505	27.3
	Central	232	13.9	232	16.6
	Eastern	220	15.1	245	20.5
Right Front Passenger	Western	53	13.5	62	13.1
	Northern	135	20.9	132	20.9
	Central	65	14.5	51	13.6
	Eastern	77	14.2	85	16.8
Remaining Passengers	Western	54	23.8	56	22.1
	Northern	81	21.7	100	24.6
	Central	68	25.8	40	21.1
	Eastern	82	24.0	81	27.3

Data on the use of safety belts according to the age of the vehicle, occupant age, and seat position of the occupant are contained in Appendix Table B-1. Appendix Table B-2 contains data on vehicle model year, area of the state surveyed, and occupant seat position. In the five previous surveys, the numbers of occupants and the numbers of belt users in each of the model year categories were large enough for comparative analyses of the observational data. For the four surveys conducted between 1974 and 1977, there were seven vehicle age categories. These model year designations were originally developed to be an indicator of the type and style of safety belts installed in vehicles. In 1983, it was necessary to combine several of the age categories because of the numbers of vehicles in the sample. Four data categories were discussed in the 1983 report. As indicated in the discussion of Appendix Table A-2, nearly three-fourths of the vehicles surveyed during the summer of 1984 were in the newest vehicle age category. From a review of the 1984 data contained in Appendix Tables B-1 and B-2, it can be seen that only the 1976-1984 category contains enough observations to allow meaningful comparisons of safety belt use. For this reason, a detailed discussion of the data elements will not be attempted in this report. These data are included only for the benefit of those readers who have been following the safety belt use trends in Virginia since these studies began in 1974 and, therefore, might wish to make their own analysis. In addition, these tables will not be included in future reports because the significance of these model year categories no longer exists.

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Appendix A-1

Time Period Data

<u>Time Period</u>	<u>1983</u>		<u>1984</u>	
	<u>Number</u>	<u>% of Total</u>	<u>Number</u>	<u>% of Total</u>
Morning	1,739	26.8	1,596	27.2
Midday	2,229	34.3	1,991	34.0
Afternoon	2,530	38.9	2,272	38.8

Appendix Table A-2

Vehicle Age Data

<u>Vehicle Age</u>	<u>1983</u>		<u>1984</u>	
	<u>Number</u>	<u>% of Total</u>	<u>Number</u>	<u>% of Total</u>
Pre-1963	19	0.3	21	0.4
63-71	772	11.9	510	8.7
72-75	1,257	19.4	906	15.5
76-84	4,450	68.5	4,355	74.3
Undefined	-----	-----	67	1.1

Appendix Table A-3

Location Data

<u>Location</u>	<u>1983</u>		<u>1984</u>	
	<u>Number</u>	<u>% of Total</u>	<u>Number</u>	<u>% of Total</u>
Western	1,307	20.1	1,414	24.1
Northern	2,067	31.8	1,850	31.6
Central	1,670	25.7	1,399	23.9
Eastern	1,454	22.4	1,196	20.4

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Appendix Table A-4

Sex of Occupant Data

<u>Occupant Seat Position</u>	<u>Sex of Occupant</u>	<u>1983</u>		<u>1984</u>	
		<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Driver	Female	3,034	46.7	2,577	44.0
	Male	3,464	53.3	3,282	56.0
Right Front Passenger	Female	1,377	67.8	1,302	65.6
	Male	655	32.2	684	34.4
Remaining Passengers	Female	707	58.6	647	56.4
	Male	500	41.4	500	43.6

Appendix Table A-5

Age of Occupant Data

<u>Occupant Seat Position</u>	<u>Age of Occupant</u>	<u>1983</u>		<u>1984</u>	
		<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Driver	Pre-Adult	0	----	6	0.1
	Young Adult	1,785	27.5	2,041	34.8
	Middle Adult	4,486	69.0	3,253	55.5
	Older Adult	227	3.5	559	9.5
Right Front Passenger	Infant	50	2.5	42	2.1
	Pre-Adult	294	14.5	321	16.2
	Young Adult	547	26.9	585	29.5
	Middle Adult	981	48.3	789	39.7
Remaining Passengers	Older Adult	160	7.9	248	12.5
	Infant	286	23.7	210	18.3
	Pre-Adult	518	42.9	560	48.8
	Young Adult	190	15.7	160	13.9
Middle Adult	Middle Adult	173	14.3	151	13.2
	Older Adult	40	3.3	67	5.8

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Appendix Table B-1

Belt Use by Vehicle and Occupant Ages

Vehicle Age	Occupant Seat Position	Age of Occupant	1983		1984		
			Number	Percent	Number	Percent	
Pre-1963	Driver	Pre-Adult	0	----	0	-----	
		Young Adult	0	----	0	-----	
		Middle Adult	3	21.4	1	7.1	
		Older Adult	0	----	0	-----	
	Right Front Passenger	Infant	0	----	0	-----	
		Pre-Adult	0	----	0	-----	
		Young Adult	0	----	0	-----	
		Middle Adult	1	20.0	0	-----	
	Older Adult	Older Adult	0	----	0	-----	
		Remaining Passengers	Infant	0	----	0	-----
			Pre-Adult	0	----	0	-----
			Young Adult	0	----	0	-----
	Middle Adult		0	----	0	-----	
	Older Adult		0	----	0	-----	
	1963-1971	Driver	Pre-Adult	0	----	0	-----
			Young Adult	13	4.9	19	9.8
Middle Adult			38	8.1	33	14.1	
Older Adult			2	5.9	14	17.3	
Right Front Passenger		Infant	3	50.0	2	66.7	
		Pre-Adult	2	5.3	5	20.0	
		Young Adult	2	2.8	2	5.0	
		Middle Adult	11	10.4	4	6.7	
Older Adult		Older Adult	1	10.0	3	13.0	
		Remaining Passengers	Infant	17	53.1	6	42.9
			Pre-Adult	4	7.0	9	19.6
			Young Adult	0	----	0	-----
Middle Adult			0	----	0	-----	
Older Adult			0	----	0	-----	

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Appendix Table B-1 Continued

Vehicle Age	Occupant Seat Position	Age of Occupant	1983		1984	
			Number	Percent	Number	Percent
1972-1975	Driver	Pre-Adult	0	----	0	-----
		Young Adult	33	9.5	65	18.5
		Middle Adult	133	15.6	55	12.1
		Older Adult	12	21.4	13	13.1
	Right Front Passenger	Infant	9	90.0	3	75.0
		Pre-Adult	14	22.6	8	14.2
		Young Adult	10	8.1	4	4.4
		Middle Adult	24	12.2	9	8.6
		Older Adult	3	9.1	2	4.7
	Remaining Passengers	Infant	39	68.4	12	46.2
		Pre-Adult	11	10.4	12	15.8
		Young Adult	0	----	0	-----
		Middle Adult	1	4.0	3	15.8
		Older Adult	0	----	1	6.7
	1976-1984	Driver	Pre-Adult	0	----	1
Young Adult			208	17.8	371	25.2
Middle Adult			603	19.2	553	22.1
Older Adult			23	16.8	66	17.8
Right Front Passenger		Infant	26	76.5	28	80.0
		Pre-Adult	48	24.8	51	21.8
		Young Adult	48	13.8	81	18.2
		Middle Adult	108	16.1	101	16.5
		Older Adult	20	17.1	25	13.9
Remaining Passengers		Infant	135	68.2	120	71.4
		Pre-Adult	66	18.8	94	21.7
		Young Adult	7	5.0	6	5.2
		Middle Adult	3	2.4	8	6.7
		Older Adult	2	6.3	3	6.1

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Appendix Table B-1 Continued

<u>Vehicle Age</u>	<u>Occupant Seat Position</u>	<u>Age of Occupant</u>	<u>1983</u>		<u>1984</u>	
			<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Unde- fined	Driver	Pre-Adult	0	----	0	-----
		Young Adult	0	----	2	8.7
		Middle Adult	0	----	10	25.6
		Older Adult	0	----	0	-----
	Right Front Passenger	Infant	0	----	0	----
		Pre-Adult	0	----	0	-----
		Young Adult	0	----	0	-----
		Middle Adult	0	----	2	28.6
	Older Adult	0	----	0	-----	
		Infant	0	----	2	100.0
		Pre-Adult	0	----	1	33.3
		Young Adult	0	----	0	-----
Middle Adult	0	----	0	-----		
	Older Adult	0	----	0	-----	

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Appendix Table B-2

Belt Use by Vehicle Age and Area Surveyed

Vehicle Age	Occupant Seat Position	Survey Area	1983		1984	
			Number	Percent	Number	Percent
Pre-1963	Driver	Western	0	-----	1	10.0
		Northern	1	20.0	0	-----
		Central	1	20.0	0	-----
		Eastern	1	20.0	0	-----
	Right Front Passenger	Western	0	-----	0	-----
		Northern	0	-----	0	-----
		Central	1	100.0	0	-----
		Eastern	0	-----	0	-----
	Remaining Passengers	Western	0	-----	0	-----
		Northern	0	-----	0	-----
		Central	0	-----	0	-----
		Eastern	0	-----	0	-----
1963-1971	Driver	Western	8	4.3	15	9.7
		Northern	25	11.6	24	17.7
		Central	10	5.0	12	10.1
		Eastern	10	6.0	15	16.3
	Right Front Passenger	Western	4	6.9	5	10.9
		Northern	6	9.7	7	17.1
		Central	1	1.8	2	6.5
		Eastern	8	14.3	2	6.1
	Remaining Passengers	Western	5	14.3	4	10.8
		Northern	8	25.8	3	20.0
		Central	2	5.4	2	16.7
		Eastern	7	23.3	6	27.3

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Appendix Table B-2 Continued

Vehicle Age	Occupant Seat Position	Survey Area	1983		1984	
			Number	Percent	Number	Percent
1972-1975	Driver	Western	35	11.4	34	13.7
		Northern	67	19.4	51	19.4
		Central	42	13.5	24	10.9
		Eastern	34	11.6	24	13.8
	Right Front Passenger	Western	17	16.2	4	4.8
		Northern	19	17.6	8	10.8
		Central	14	16.5	2	3.1
		Eastern	10	7.9	12	15.8
	Remaining Passengers	Western	15	31.3	6	12.8
		Northern	10	18.9	9	16.7
		Central	9	17.0	6	16.7
		Eastern	17	24.6	7	22.6
1976-1984	Driver	Western	105	13.0	167	17.1
		Northern	375	25.0	426	29.9
		Central	179	15.5	196	18.8
		Eastern	175	17.7	202	22.2
	Right Front Passenger	Western	32	14.0	53	15.9
		Northern	110	23.2	115	22.6
		Central	49	16.0	47	17.0
		Eastern	59	16.5	71	18.2
	Remaining Passengers	Western	35	24.5	44	26.5
		Northern	63	21.7	87	25.9
		Central	57	33.0	32	22.5
		Eastern	58	23.9	68	28.0

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Appendix Table B-2 Continued

<u>Vehicle Age</u>	<u>Occupant Seat Position</u>	<u>Survey Area</u>	<u>1983</u>		<u>1984</u>	
			<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Unde- fined	Driver	Western	0	----	4	17.4
		Northern	0	----	4	25.0
		Central	0	----	0	----
		Eastern	0	----	4	36.4
	Right Front Passenger	Western	0	----	0	----
		Northern	0	----	2	33.3
		Central	0	----	0	----
		Eastern	0	----	0	----
	Remaining Passengers	Western	0	----	2	50.0
		Northern	0	----	1	100.0
		Central	0	----	0	----
		Eastern	0	----	0	----