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Hunter, W.W., and Geissinger, S.B. (1988). Understanding and Acceptance of the North Carolina Safety Belt Use Law. Chapel Hill, NC: University of North Carolina Highway Safety Research Center.

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UNDERSTANDING AND ACCEPTANCE OF THE NORTH CAROLINA SAFETY BELT USE LAW

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University of North Carolina Highway Safety Research Center

February 1988

-HSRC-78/2/1 UNC/HSRC-78/2/1

This project was made possible by a grant from the North Carolina Governor's Highway Safety Program (Number 87-04-LE-304-05). The analysis and opinions in this report are those of the authors and do not necessarily reflect those of the sponsor.

ACKNOWLEDGEMENTS

The authors would like to express appreciation to the many persons who were involved in this research effort. Pama A. Mitchell and Bidur Basnet, University of North Carolina Journalism graduate students, critiqued the questionnaire and its adaptation to the computer assisted telephone interviewing system (CATI) and managed the interviewing process including the recruitment and training of the interviewers. Jose M. Sandoval, Research Associate, Institute for Research in Social Science, provided programming for the transfer of the questionnaire to the CATI system and in organizing the data for analysis, as well as assisting in the training of interviewers. From the UNC Highway Safety Research Center, Cindy Lohr provided the programming for the data analysis; Peggy James and Teresa Parks prepared the report; B. J. Campbell, Jane Stutts, and J. R. Stewart reviewed a draft of the report and contributed many constructive comments. Also, Philip E. Meyer, Professor, School of Journalism, provided valuable information during the planning stage of the project. To these persons, we are greatly indebted for the success of this project.

Finally, appreciation is expressed to the North Carolina Governor's Highway Safety Program and its director, Paul B. Jones, for providing funding for the project and to John W. Eberhard of the National Highway Traffic Safety Administration for the helpful suggestions he provided throughout the project.

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CHAPTER 1. INTRODUCTION

Statement of the Problem

During the past few years, some thirty or more states have enacted mandatory safety belt use laws (SBULs). The count as of November, 1987, is 30 states and the District of Columbia ("Highway and Vehicle Safety Report", December 7, 1987). During this time period, a good many of the SBUL states have begun to measure the safety belt use rates, mostly through observational surveys. Researchers, evaluators, and others have kept a close watch on the results in an effort to detect differences in use rates and possible reasons for the differences, such as primary versus secondary enforcement (Campbell, 1987).

What is clear from the enactment of the SBULs is that different levels of usage have emerged. For example, Michigan's belt use rate rose from 26 percent in the last pre-law measurement to 58 percent the month the law went into effect. Since that time the percent use rate has tended to center in the midforties, not unlike a number of other states. North Carolina's experience has been somewhat different, with a front seat occupant pre-law use rate of 24 percent, "grace period" levels in the mid-forties, a high of 76 percent the month the \$25 fine for non-use became effective, and then a fall-off to around 60 percent. At the other end of the spectrum would be a state like Idaho, with a pre-law rate of 16 percent and all post-law observations of 25 percent or less through March, 1987 (Campbell, 1987).

Thus, while many states have passed laws, it is not understood why some states have high usage rates and others have low usage rates. In addition, use rates have typically not risen much above 60 percent and have tended to decrease over time. Another concern is that those who most need belts tend not to use them. Therefore, better information is needed on who is not using belts, why belts are not being used, and what can be done to increase usage.

The main purpose of this project was to use the results of a telephone interview to assess current public understanding and acceptance of the North Carolina seat belt law as well as identify potential improvements that might increase the belt use of part-time wearers and maintain the belt use rates already achieved. A peripheral purpose was to refine and implement a prototype questionnaire that could be used by various states to obtain information to plan better their occupant protection program.

Other Related Projects

North Carolina's seat belt law is being examined in several different ways. Through funding provided by the North Carolina Governor's Highway Safety Program, the Highway Safety Research Center is conducting an evaluation project that is examining: (1) changes in the belt use population-at-large, (2) the effect of belt use and trauma reduction in crashes, and (3) the level of enforcement activity by the Highway Patrol, city police, and sheriff's departments.

In another grant from the National Highway Traffic Safety Administration, HSRC is attempting to determine if non-belt users are overrepresented in crashes. Color coded mailback questionnaires that identify belt users and nonusers were handed out by HSRC data collectors observing belt use at 72 sites across the state. Once questionnaires were returned, names and addresses were used to access the driver history file and examine accident and violation records for both groups. Beyond this, a telephone survey with 200 respondents will serve to provide more knowledge about what these groups think about the law, their perception of enforcement, belt use attitudes, etc.

The current questionnaire has further enhanced the information developed in the other projects by eliciting answers from a random sample of over 1,100 North Carolinians. The survey provided an opportunity to get a better understanding about the public perception of the occupant protection program as well as getting timely input on suggested improvements to the program.

Survey Development

Given the need for information on the above issues, NHTSA began development of a survey for state use. It became apparent to NHTSA that a survey that was designed and pilot tested at the state level might find greater acceptance by states. When provided with the opportunity to further develop and pilot test the survey, HSRC sought and obtained grant funds from the North Carolina Governor's Highway Safety Program. Thus, the approach was to develop a general seat belt questionnaire that could be easily adapted by other states with perhaps dissimilar safety belt laws and programs.

A variety of subject areas were covered in the questionnaire. From these subject areas we expected to obtain responses about such items as those listed below:

- stated belt wearing frequency before and after the inception of a \$25 fine for non-belt use
- o how people felt about the N.C. law and reasons for favoring or opposing the law
- o opinions about safety belts whether they are effective, comfortable, an infringement on personal rights, etc.
- o what people had heard in the media about safety belts
- o what proportion had received seat belt brochures or other promotional materials
- o the social context of "Buckling up"
- o knowledge of enforcement provisions of the law
- o perception of enforcement
- o strategies for increasing seat belt use
- o whether people voted in prior elections and if they favored or opposed keeping the N.C. seat belt law
- o whether prior accidents affected seat belt use
- whether risk variables like drinking and driving/riding patterns as well as operating speed on the highway affected stated safety belt use.

We hypothesized that responses to the items above would vary by the belt wearing frequency. For example, we expected that people who wore their belt always or most of the time would be supportive of the N.C. law, would feel that seat belts are effective in crashes, would have a high percentage of their friends "buckling up," etc. We also expected differences in responses based on demographic variables.

For researchers and others interested in seat belts, the questionnaire yields a wealth of information. A complete copy of the questionnaire is included as Appendix A. This version was adapted for the computer-assisted telephone interview program (CATI) used in the project. The contents of the questionnaire were not changed. Only the layout was modified to facilitate the computer-assisted interview process.

CHAPTER 2. METHOD

Study Population

North Carolina residents 18 years of age or older who reside in households having telephones were the population of interest for this study. The goal was to obtain 1,000 completed interviews regarding safety belt use and the North Carolina safety belt law from a representative sample of this population.

Sampling Method and Completed Interviews

The sampling method consisted of a random digit dialing procedure which gave every residential telephone in North Carolina an approximately equal chance of being dialed. The sample was stratified according to the total adult population of each of North Carolina's 100 counties, so that the results would be proportionately representative of the state's population. (See Appendix B for more details about the sampling process.) The number of households contacted was 1,357, and 1,026 interviews were completed initially. Follow-up attempts to obtain interviews from the initial nonrespondents yielded an additional 101 completed interviews, bringing the total to 1127. The differences in these groups are highlighted later in this chapter.

Procedures

Survey Method

Telephone survey methodology was selected because it not only was a relatively fast method to survey a representative sample of North Carolina residents but also because it provided confidentiality to the respondents since names and telephone numbers were not linked. These were important considerations due to the need to obtain quickly an assessment of North Carolinian's attitudes about the North Carolina seat belt law, information about their seat belt use, and opinions about ways to increase seat belt use to develop the prototype questionnaire for wider distribution.

Personnel

The University of North Carolina Highway Safety Research Center and the National Highway Traffic Safety Administration had chief responsibilities for the questionnaire development, overall management of the project, and final analysis and resulting reports. Personnel from the University of North Carolina School of Journalism had chief responsibility for the recruiting, training, and supervision of telephone interviewers and were also involved in questionnaire development. A programmer with expertise in the area of telephone survey programming and data management adapted the survey instrument to the computer-assisted telephone interviewing program (CATI) and merged the data for analysis.

Questionnaire Development

Questionnaire items were developed to collect demographic information about the respondents and such areas as the following:

- o Current understanding of and attitude about the North Carolina safety belt law
- o Safety belt use behavior
- o Opinions about safety belts
- Media coverage, handout materials, and employment policy regarding safety belts
- Perceptions and experience regarding the enforcement of the safety belt law
- o Opinions regarding increasing safety belt use

Particular attention was given to the design of the question items in terms of clarity, completeness, and content. Additional consideration was given to how the introduction, questions, responses, and transition statements used between sections of the questionnaire would sound in a telephone interview.

Numerous versions of the questionnaire were evaluated and revised before pilot testing. Testing was conducted initially by developers of the questionnaire after which modifications particularly to shorten, clarify, and simplify the survey instrument were made. Further testing consisted of trained interviewers interviewing participants obtained from randomly selected North Carolina telephone numbers. These interviews were taped and a second phone was used to allow a member of the project team to monitor the interview. Suggestions from the evaluation of the interviews and the interview tapes by the project team, including the interviewers, and NHTSA were incorporated into the questionnaire. The revised instrument contained 61 items and was estimated to take from 10 to 15 minutes to administer (Appendix A).

The final step in preparing the questionnaire for the survey was to adapt it to the CATI system. The programmer gave considerable attention to the display of the questions on the monitor for clarity and ease of administration by the interviewer. This was achieved through appropriate spacing and the discriminating use of color and highlighting.

Interviewers

A total of twenty-five graduate and undergraduate students and staff members from various departments of the University of North Carolina at Chapel Hill were hired as interviewers. Personnel from the University of North Carolina School of Journalism and Highway Safety Research Center trained the interviewers in a two-hour session at the CATI facility in the School of Journalism. The survey was thoroughly reviewed and the CATI system was demonstrated with time allotted for interviewers to practice before beginning the interviews for the project. Personnel from the School of Journalism supervised the interviewers throughout the interviewing periods.

Interview Procedure and Response

Each interviewer was given a listing of randomly selected telephone numbers from which to contact respondents. Under certain conditions a sample phone number was replaced, and another substituted from the same exchange. This was done for the cases when: the number proved to be non-working; the interview was refused or terminated; the number was non-residential; there was no eligible respondent living at that number; there was no answer or a busy signal after four attempts were made at least 30 minutes apart.

When a residential household was reached, the number of persons 18 years old and older living at that address was determined and a respondent selected by the "next birthday" method. If the person with the next birthday was not home, a call back appointment was made. When 80 percent of the sample was completed, the random selection of respondents within households was abandoned and a loose age-sex quota, with preference given to the youngest male 18 or over in the household, was substituted and callbacks were no longer attempted.

Interviewers were provided sheets with additional information to answer questions about the project or to address concerns respondents may have had

regarding their participation in the survey (Appendices C,D). In addition, a listing of car makes and sizes was supplied for ease and accuracy in coding answers to items 47 and 48.

Interviews during the initial phase were conducted from 3:30 to 9:30 p.m. on August 23 and 5:30 to 10:00 p.m. August 24-27 and August 30, 1987, at the CATI facility. The following interview results were obtained:

Completed interviews	1026	(75.6%)
Partial completions	34	(2.5%)
Refusals	280	(20.6%)
Hearing or language problems	17	(1.3%)
Total number of contacts	1357	(100.0%)

Approximately 76 percent of the total number of individuals initially contacted completed the telephone interviews.

A follow-up session to contact non-respondents was held October 4. Interviewers who were particularly successful in the initial interviewing phase were recruited for this task and the original questionnaire was used. Of the 280 nonrespondents, 101 completed interviews when contacted again. The total number of completed interviews in the project is:

Completed	interviews	from	the	initial phase	group	1026
Completed	interviews	from	the	nonrespondent		<u>101</u>
Total						1127

Thus, slightly over 83 percent of the households contacted completed an interview.

Data from the interviews were directly ntered on floppy disks in each of the microcomputers located in the twenty-five work stations at the CATI facility. These data were collected and merged onto a single disk which was transferred to HSRC for analysis.

Comparison of Respondents with Initial Refusal Group

Analysis of the responses from the initial group of respondents with the respondents who had originally refused to be interviewed indicated that there were a few differences. The two groups' responses were combined for the presentation of the results in Chapter 3. Only on the following nine items were there statistically significant differences between the groups:

Refusals were significantly less likely to: Have an opinion about importance of safety belts and higher speed limits. Q 12 (p< .01) Have seen anything in the media about the safety belt law. Q 16 (p<.05) Have an opinion about increased fine leading to increase belt use. Q 35 (p< .01) Have an opinion about police reminder leading to increased belt use. Q 38 (p<.05) Refusals were significantly more likely to: Have seen media features about seat belts having saved lives. Q 17 (p< .05) Drive mid-size or large cars, as opposed to small cars. Q 47 (p<.05) Increase their belt use after an accident. Q 56 (p<.05) Refusals estimated significantly higher: Belt use by the general population. Q 25 (p<.01) Belt use by their personal friends. Q 28 (p< .01) The initial respondents and those who first refused and later agreed to be

interviewed did not differ significantly from each other on such variables as race, sex, education, county of residence, estimated annual mileage driven, or type, size, and origin of vehicle usually driven.

Demographic Characteristics

Demographic information about the two groups was combined for presentation in the following description and tables. As indicated in Table 2.1, a higher percent of the respondents were female (57.4%) than male (42.6%). This compares with 52.4 percent females and 47.6 percent males age 18 and over in

		Race	3			
	Whi	te	Nonw	hite	To	tal
<u>Sex</u>	N	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Male	415	44.4	63	33.5	478	42.6
Female	<u>520</u>	55.6	125	66.5	<u>645</u>	57.4
Total	935	100.0	188	100.0	1123	100.0
	(83.3%)		(16.7%)		(100.0%)	

Table 2.1. Safety belt survey respondents by race and sex.

North Carolina. White respondents were also somewhat overrepresented (83.3%) when compared to the percent of whites in the North Carolina population (76%).

Ages of respondents ranged from 18 to 86, and Table 2.2 shows wide distribution among the ten-year age categories. The median age for all those who agreed to participate in the survey was approximately 40 years.

Table 2.2	Age	di	stribution	of	safety	belt
	surv	<i>z</i> ey	respondent	ts.		

Age	<u>N</u>	<u>%</u>
< 26	168	14.9
27-36 37-46	287	25.5 19.6
47-56 57-66	172 120	15.3 10.6
67-76	115	10.2
77-86 Missing	<u>6</u>	3.4 <u>00.5</u>
Total	1127	100.0

Table 2.3 shows the level of education by age of the respondent. Seventyeight percent of the respondents had graduated from high school, and of these 44 percent had some college education. In fact, more respondents had high school educations (78%) than the North Carolina adult population which, in 1980, was reported to be made up of 63.2 percent high school graduates (Bureau of Census, 1983). The tendencies in Tables 2.1 - 2.3 may point to the type of bias typically seen in telephone surveys, in regard to the availability of telephones, work patterns, etc.

Table 2.3. Safety belt survey respondents by age and level of education.

	Less High	Than School	High Gra	School duate	So Coll	me ege	College or C	e Graduate Freater	e Tota	1
<u>Age</u>	<u>N</u>	_%	<u>N</u>		<u>N</u>		<u>N</u>	%	<u>N</u>	%
18-25 26-55 >55	15 88 <u>145</u>	6.1 35.5 <u>58.5</u>	57 243 <u>80</u>	$15.0 \\ 64.0 \\ 21.0$	47 167 <u>53</u>	17.6 62.6 <u>19.9</u>	24 156 <u>51</u>	$10.4 \\ 67.5 \\ 22.1$	143 654 <u>329</u>	12.7 58.1 29.2
Total	248 (22.0%	100.1)	380 (33.8%	100.0	267 (23.7%	100.1	231 (20.5%	100.0 ()	1126 (100.0%)	100.0

Level of Education

In response to questions about vehicles and estimated annual mileage driven, around 60 percent drove mid-size and large vehicles, 24 percent drove small vehicles (i.e., compact, subcompact, and mini-compact vehicles), and 16 percent drove trucks or vans. A large majority of the respondents' vehicles were domestically manufactured (77%). Slightly over 72 percent estimated that they drove over 10,000 miles annually.

All but one of North Carolina's one hundred counties were represented in the survey population. Approximately 46 percent of the respondents lived in the piedmont, 16 percent in the mountain, and 38 percent in the coastal regions. Over half lived in urban areas (52.5%), with somewhat fewer in rural areas (47.5%).

Thus, on the whole, the sample appears to be quite representative of North Carolina. However, compared to statewide figures, the sample contains somewhat more females, whites, and people with a high school education. These differences should be noted since these groups traditionally have been more frequent belt users and have more positive attitudes about seat belts. A caveat regarding the results of the survey is that there may be a tendency for the findings to indicate greater pro-belt attitudes and higher belt use than in the general population. Given this possibility, consideration was given to weighing the data. However, since the thrust of the study was to examine the relationships between variables rather than population projections, it was decided that weighting techniques would not be used to adjust the telephone survey. We were interested in the comments to survey questions from people age 18 and greater, and a random sample of that population was indeed contacted. Weighting could be used, for example, to help project how a seat belt referendum might fare in North Carolina, but even this would have to be carefully done to select the proper population from which the weighting factors would be drawn. For example, would the reference population be the voting population, the driving population, or perhaps simply the population of North Carolinians age 18 and greater? For the survey question concerned with keeping the North Carolina seat belt law, the results were overwhelmingly in favor of keeping the law, and weighting techniques would not have appreciably altered these results anyway.

To conclude with this discussion, it should be remembered that 83 percent of the random sample of households contacted completed the interview. No demographic comparison data were available for the remaining 17 percent of the sample not covered. Given the very high response rate, the researchers have considerable confidence both in the findings of the survey and their usefulness for safety belt program planning, and in the survey instrument itself as a model for use in future safety belt surveys.

The Data

The basic data that were analyzed result from the two combined surveys mentioned in the Methodology section, a total of 1,127 responses. The tables that follow may not reflect this exact number because of missing values or an examination of a subset of the data. Our approach was to examine each item on the questionnaire by age, race, sex, and education, in that these are variables that have tended to have a relationship with belt use from past research. In addition, each item was crosstabulated by the most current belt wearing status reported by the respondent (i.e., belt wearing during the citation phase of the North Carolina seat belt law) in the following categories: (1) always, (2) most of the time, (3) sometimes, (4) rarely, and (5) never. Basic chi-square tests were used to check for significant differences in the homogeneity of the distributions, with $\alpha = .05$. The remainder of the text in this chapter is divided into various categories, such as understanding and attitude about the law, opinions about belts, etc.

Current Understanding of and Attitude About the Law

Description of The North Carolina Law

By way of a brief explanation of the N.C. Seat Belt law, the following summary from Reinfurt, Campbell, Hunter, and Stutts (1987) is offered:

In the spring of 1985, the North Carolina General Assembly enacted a mandatory occupant restraint law which became effective on October 1, 1985. The law states that drivers and other front seat passengers who are 16 years of age or older, of passenger motor vehicles manufactured with seat belts in compliance with Federal Motor Vehicle Safety Standard (FMVSS) 208 must have the available seat belts properly fastened whenever the vehicle is in forward motion on a street or highway. A driver with other front seat passengers under age 16 (and not required to be in a child safety seat) is responsible for having these front seat passengers properly restrained. Warning tickets were issued to violators of the law during the fifteen-month period between October 1, 1985 and December 31, 1986. As of January 1, 1987, violators have been subject to a fine of \$25. Violation of this law does not result in driver license points, insurance points, or court costs. Exemptions include:

- 1. Persons with medical or physical conditions preventing the use of safety belts or with certified irrational fear of safety belts;
- 2. Rural letter carriers in performance of duties;
- Delivery vehicles with frequent stops and speeds not exceeding 20 mph;
- 4. Commercial vehicles being used for transporting goods; and
- 5. Vehicles not required by federal law to be equipped with safety belts.

Primary Enforcement

One question concerning the law asked whether police could stop motorists just for not wearing a safety belt (Q 30, see Appendix A). The law does not explicitly state how enforcement is to be conducted, but the implicit intent has been to allow primary enforcement. The media have dealt with this in their description of the law, and we were curious about the level of awareness of this provision. Slightly more than three-fourths of the respondents gave the correct answer of "yes," 15 percent said "no," and about 8 percent did not know the answer.

Table 3.1 shows the statistically significant demographic and belt wearing crosstabulations for this question. Whereas 76 percent of the white respondents gave the correct answer, some 84 percent of the black respondents gave the correct reply (p = .041). In addition, there were significant differences in regard to educational status, where 82 percent of those with less than a high school education gave the correct answer, compared to 71 percent of those who had finished high school, 79 percent of those who had attended college, and 79 percent of those who had a college education or greater (p = .048). These results may indicate that the \$25 fine has resulted in greater awareness of the provisions of the law by lower socioeconomic status (SES) groups. Finally, there were large differences in the correct answer ("yes") by current self reported belt wearing frequency (p = .000). Here some 38 percent of the group who say they never wear their seat belt gave the incorrect answer.

Table 3.1. Knowledge of primary enforcement provision by demographic and belt wearing variables (percent of group stating this answer).

	Can Police Stop for Not Wearing		Just Belts?	
	Yes	No	Don't <u>Know</u>	
Race*				
White	75.6 %	16.1%	8.4%	
Black	84.4	10.4	5.2	
Education*				
Less than high school	81.5	11.7	6.8	
High school graduate	71.2	19.3	9.5	
Some college	79.0	15.0	6.0	
College graduate or greater	79.2	12.6	8.2	
Belt Wearing Group**				
Always	81.5	12.3	6.2	
Most of the time	70.7	18.8	10.6	
Sometimes	75.8	12.6	11.6	
Rarely	82.8	12.5	4.7	
Never	57.5	37.5	5.0	
Overall	77.0	15.2	7.8	

* p < .05 ** p < .01

The \$25 Fine

A second question about the law asked for the amount of fine imposed for non-use (Q32). Once again, about 77 percent gave the correct answer of \$25. About three percent thought the fine was less than \$25, and about 20 percent thought the fine was greater than \$25. Also, more of the lesser educated gave the correct response of \$25 (p = .000), as shown below:

	Percent Responding		
	Correctly to Amount		
Education	of Fine Question		
Less than high school graduate	81.6%		
High school graduate	80.9%		
Some college	73.7%		
College graduate or greater	70.5%		

There were no significant differences in the responses when the belt wearing distributions were examined.

Attitude About the Law

The respondents were asked if they favored or opposed the N.C. Seat belt law (Q5), and then asked if they <u>strongly</u> favored or opposed the law (Q6-7). Overall, just over two-thirds (67 percent) indicated that they favored the law; about one-fourth (26 percent) said they opposed the law, and about 7 percent were uncertain. Interestingly, the two-thirds favoring the law is identical to the percent obtained in a 1984 statewide poll (the "North Carolina Citizen Survey") conducted by the North Carolina Office of State Management and Budget (Office of State Management and Budget, 1984). Thus, the level of support appears not to have changed over the past few years.

After questioning about whether they strongly favored or opposed the law, the following U-shaped distribution was obtained:

<u>Attitude About Law</u>	<u>N</u>	<u>%</u>
Strongly favor Favor Uncertain Oppose Strongly oppose	580 177 74 115 179	51.6% 15.7% 6.6% 10.2% 15.9%
	1125	100.0%

As might be expected, there were demographic differences concerning who favored or opposed the law (Table 3.2). For the three age categories, favoring the law was directly proportional to age, and the differences were significant (p = .000). Here, about 61 percent of the 18-25 age group favored the law, as opposed to 67 percent of the 26-55 age group and 71 percent of the greater than 55 age group. There were also differences by gender, as 60 percent of the males favored the law compared to 73 percent of the females (p = .000). There were also significant differences present for the education variable (p = .000), and, in general, favoring the law was directly proportional to the amount of education.

Table 3.2.	Attitude about the law by demographic and belt
	wearing variables (percent of group stating this
	response).

ALLILUUE ADOUL LAN	A	tt	it	ude	About	Law
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	Favor	Oppose	<u>Uncertain</u>
Age **			
18-25	60.8 %	37.1%	2.1%
26-55	66.8	27.3	6.0
55+	71.0	19.2	9.8
Sex **			
Male	60.3	33.9	5.8
Female	72.5	20.3	7.1
Education **			
Less than high school	63.3	27.0	9.7
High school graduate	59.7	32.4	7.9
Some college	68.4	27.1	4.5
College grad. or greater	82.7	13.9	3.5
Belt Wearing Group **			
Always	82.4	12.5	5.1
Most of the time	66.6	24.6	8.8
Sometimes	35.8	57.9	6.3
Rarely	15.6	73.4	10.9
Never	10.0	87.5	2.5
Overall	67.3	26.1	6.6

*p < .05 **p < .01

Finally, favoring or opposing the law was examined by the belt wearing group, and, as one would expect, the differences here were quite significant (p = .000). The distributions for the "always" and "never" groups were almost completely reversed.

Main Reason for Favoring the Law

If the respondent favored the law, he/she was asked to give their <u>main</u> reason for so doing (Q8), i.e., an open-ended response. As shown below, the reason given almost 80 percent of the time was that belts save lives and/or reduce injuries. About 10 percent stated that belts would protect them or

their family, and some four percent stated that belts would help people become more safety conscious.

Main Reason For Favoring Law	<u>N</u>	<u>%</u>
Safety belts save lives/reduce injuries	572	79.4
The law will get more people to wear belts	6	0.8
Wearing belts will protect me/my family	75	10.4
Help people become more safety conscious	30	4.2
Reduce costs (to society) of accidents and injuries	3	0.4
It is the law	18	2.5
Other	16	2.2
	720	100.0

Because of low frequencies in some of the cells, the "main reason" question responses were combined into three groups -- belts save lives/reduce injuries, protect me/my family, and other reasons -- when the crosstabulations were performed. Given this grouping, there were no differences by age, sex, race, education, or belt wearing group. Some 70-80 percent of the people within each belt wearing group stated that belts save lives and reduce injuries as their main reason for supporting the law.

Main Reason for Opposing the Law

Similar to the above, if the respondent opposed the law, he/she was asked to give their main reason (open-ended) for opposing the law (Q9). As shown below, about two-thirds of this group stated that the main reason was that adults should have a choice about using safety belts -- that a mandatory belt law was an infringement on their rights. Beyond this reason, another 13 percent felt that belts do not really help in an accident, and some 12 percent stated that belts are uncomfortable or inconvenient to use. Somewhat interestingly, only a handful of respondents stated that they felt their seat belt did not work (or wouldn't lock up).

Main Reason For Opposing Law	<u>N</u>	<u>%</u>
Adults should have a choice/infringement on rights My safety belt doesn't work/doesn't lock up Safety belts aren't effective don't really help	188 5 37	67.9 1.8 13.4
in an accident Safety belts are uncomfortable/inconvenient to use Other	32 15	$\frac{11.6}{5.4}$
	277	100.0

Table 3.3. Main reason for opposing the law by demographic variables (percent of group stating this reason).

Main Reason for Opposing Law

		Belts		
	Should Have	Are Not	Belts	Other
	<u>A Choice</u>	Effective	<u>Uncomfortable</u>	Reasons
Age**				
18-25	74.0 %	8.0%	8.0%	10.0%
26-55	73.1	12.6	8.4	5.9
55+	48.3	20.0	23.3	8.4
Race*				
White	70.0	11.4	11.0	7.6
Black	51.4	28.6	14.3	5.7
Overall	67.9	13.4	11.6	7.2

^{*}p < .05 **p < .01

distributions. There were no differences by sex of the respondent, but there were significant differences by age group (p = .007), with most of the effect coming from those greater than 55 years old. Within this older group, there was much less concern about seat belts being an infringement on their rights and much more concern about belts being uncomfortable or inconvenient. From a practical standpoint, belts are simply harder to use for some older people, due to factors like decreased flexibility, arthritis, physical impairments, etc. In addition, one-fifth of the older group felt that belts are not effective in crashes. Concerning race, the black group was less likely to mention that belt laws are an infringement on rights and much more likely to state that belts are not effective in crashes (p = .035).

As a point of interest regarding the comfort/convenience issue, none of those with a college degree or greater education stated that this issue was their main reason for opposing the law. Only about three percent of the "never" wearers stated that belts were uncomfortable.

Opinion About Effectiveness of Law

There was considerable interest in knowing whether people felt the N.C. Seat Belt law had been effective in regard to reducing injuries and saving lives. Respondents were asked to state whether the law had been "very effective, somewhat effective, not very effective, or not at all effective" (Q41). The univariate distribution is shown below:

Law Been Effective?	<u>N</u>	%
Very effective Somewhat effective Not very effective Not at all effective Don't know	255 670 103 16 <u>80</u>	22.7 59.6 9.2 1.4 _7.1
	1124	100.0

Almost one-fourth felt that the law had been very effective in regard to injuries and fatalities, and another 60 percent felt the law had been somewhat effective. About 10 percent felt the law had been not very effective or not at all effective (combined) and another 7 percent did not know.

Table 3.4 shows the typical crosstabulations for this question. Although there were significant differences by age (p = .004), the largest cell chisquare contributions came from the "Don't know" response, especially where some 12 percent of the over 55 age group stated they did not know about the law's effectiveness. There were also large differences by sex of respondent (p =.000), with more females than males tending to feel that the law had been very or somewhat effective. The largest cell chi-square contributions here came from many more males than expected feeling that the law had been not very effective, and vice-versa for the females.

There were no significant differences by race and education. The large significant differences by belt wearing group (p = .000) were largely attributable to the more frequent belt wearers feeling the law had been very effective as opposed to the less frequent belt wearers feeling that the law had been not very effective or not at all effective. Showing the complexity of the seat belt issue is the fact that almost 54 percent of the "never" wearers stated that the law had been effective. Consider the difficulty of reaching this group who claim they never wear their belt if half concede that the law works.

	Very	Somewhat	Not <u>Very</u>	Not At <u>All</u>	Don't <u>Know</u>
Δ.c.e.**					
18-25	22.4%	62.9%	9.1%	0.7%	4.9 Z
26-55	21.7	61.9	9.9	1.4	5.1
55+	24.5	53.7	7.7	1.8	12.3
Sex**					
Male	18.9	58.7	13.9	1.7	6.9
Female	25.6	60.3	5.6	1.3	7.3
Belt Wearing Group**					
Always	29.6	58.3	4.4	1.0	6.7
Most of the time	18.2	64.1	8.8	0.9	7.9
Sometimes	11.6	59.0	20.0	0	9.5
Rarely	7.8	59.4	23.4	3.1	6.3
Never	10.3	43.6	33.3	10.3	2.6
Overall	22.7	59.6	9.2	1.4	7.1

Table 3.4. Opinion about effectiveness of law by demographic and belt wearing variables (percent of group choosing this response).

Law Been Effective?

**p < .01

Support of the North Carolina Safety Belt Law

Several items questioned the respondents on whether they were registered voters (Q 42) and whether they had voted in the 1984 presidential or 1986 general elections (Q 43 and Q 44). Over three-quarters of the respondents indicated they were registered, and of these, 85 percent said they had voted in the presidential election and 75 percent said they had voted in the general election. Given the normal voting patterns, these figures seem unusually high. Males and females were equally likely to be registered and to vote. Only on the question regarding voting in the presidential election was there a difference by race with 78 percent of blacks compared to 87 percent of the whites voting (p < .01). Older respondents were more likely to be registered and to vote than were younger respondents (p < .01).

In addition, all respondents were asked whether they favored or opposed keeping the North Carolina safety belt law (Q 45). Overall, approximately 72 percent favored the law, 25 percent opposed the law, while 4 percent were

uncertain. Significant differences were shown within the belt wearing group and within all demographic variables but race as shown in Table 3.5. Older

Table 3.5. Support for keeping the N.C. seat belt law by demographic and belt wearing variables (percent of group choosing this response).

Keep the Law?

	Favor	<u>Oppose</u>	Uncertain
<u>Age</u> * 18-15 26-55	65.5 % 70.5	32.4 % 25.8	2.1 % 3.7
55+	76.9	18.5	4.6
Sex**			
Male	66.0	30.1	4.0
Female	76.1	20.3	3.6
Education**			
Less than high school	70.0	26.3	3.6
High school graduate	64.0	31.5	4.5
Some college	72.7	22.7	4.6
College grad. or greater	85.2	13.0	1.7
Belt Wearing Group**			
Always	85.9	11.5	2.6
Most of the time	72.1	23.8	4.1
Sometimes	42.1	52.6	5.3
Rarely	19.4	72.6	8.1
Never	15.4	76.9	7.7
Overall	71.8	24.5	3.8

*p < .05 **p < .01

respondents (77%) and females (76%) were more likely to favor the law than were the 18-25 age group (66%) and males (66%). The higher the level of education, the more likely were respondents to favor the law, with roughly 85 percent of the college graduates favoring the law. The belt use categories exhibited the largest differences among the variables examined. Nearly 86 percent of the "always" wearers were in favor of the law, whereas only 15 percent of the "never" wearers favored the law. These same tendencies were present upon examining: (1) respondents who said they were registered voters, and (2) respondents who said they voted in the last general election in North Carolina.

Acceptance of Safety Belts

The North Carolina belt law was unique in regard to the way it was actually implemented. The law was passed in May, 1985, and then became effective October 1, 1985. Then for 18 months, a "grace" period was in effect, where enforcement personnel were allowed only to give warning tickets to frontseat motorists not using their safety belts. On January 1, 1987, the \$25 fine for non-compliance with the law became effective. It turns out that the grace period was an active one for enforcement personnel, especially the N.C. State Highway Patrol (SHP). During this period, the SHP issued approximately 10,000 warning tickets per month. During the first nine months of the citation phase, the SHP averaged about 3,150 \$25 tickets per month. The warning ticket/citation activity for local police and sheriffs departments appeared to be quite variable across North Carolina (Reinfurt, Campbell, Stewart, and Stutts, 1987).

Some of the analysis in this section refers to the frequency of belt wearing during the grace period and citation phase. Other variables analyzed tend to refer to the social context of "buckling up."

Belt Use During Grace Period

Respondents were told that there was no fine for not wearing a belt between October, 1985 and January, 1987, and then asked how often they wore their belts during this "grace" period (Q2). The answers could fall into one of five pre-defined categories (plus "don't know"), as shown below:

Belt Use During "Grace" Period	N	%
Always Most of the time Sometimes Rarely Never Don't know	312 238 172 152 203 4	28.9 22.0 15.9 14.1 18.8 0.4
	1081	100.0

The total of the "always" and "most of the time" groups came to 51 percent. Even though self-reported belt wearing frequencies are often grossly inflated, this total was less than ten percentage points higher than the value actually observed in a probability sample taken across the state at some 72 sites. The observed belt use for front seat occupants ranged from 38.9 to 45.8 percent during the "grace" period (Reinfurt, et al., 1987).

The nature of the question in this case, whereby respondents are asked for their belt wearing frequency over an extended period of time, would tend to yield a higher usage rate than the one time assessment during any observation period. In other words, the tendency would be to report more frequent belt use over an extended time period (a period prevalence measure), and this would result in a higher use rate than that produced by the on-road observations (a point prevalence measure). Researchers and others who often combine self reported values for categories like "always" and "most of the time" to compare with an observed percentage value should recognize this problem.

Examining the cross tabulations (Table 3.6) showed that the age differences (p = .000) were mostly due to the 18-25 age group having less

Table 3.6. Belt use during "grace" period by demographic variables (percent of group choosing this response).

"Grace" Period Belt Use

<u>Always</u>	Most of <u>the Time</u>	Sometimes	Rarely	Never	Don't <u>Know</u>
16.8%	15.3%	19.1%	19.9%	29.0%	0 %
30.4	22.6	15.6	12.1	19.2	0.2
30.9	23.8	15.0	15.6	13.8	0.9
24.4	22.7	15.3	18.0	19.3	0.2
32.0	21.6	16.3	11.3	18.4	0.5
29.9	22.6	14.8	14.8	17.6	0.2
22.7	19.2	20.9	9.9	26.2	1.2
24.2	18.3	17.5	15.0	23.8	1.3
22.2	20.2	17.5	18.0	21.9	0.3
27.3	23.4	17.6	12.5	19.1	0
46.4	27.2	9.8	8.5	8.0	0
28.9	22.0	15.9	14.1	18.8	0.4
	<u>Always</u> 16.8% 30.4 30.9 24.4 32.0 29.9 22.7 24.2 22.2 27.3 46.4 28.9	AlwaysMost of the Time16.8715.3730.422.630.923.824.422.721.621.629.922.622.719.224.218.322.220.227.323.446.427.228.922.0	AlwaysMost of the TimeSometimes16.8715.3719.1730.422.615.630.923.815.024.422.715.332.021.616.329.922.614.822.719.220.924.218.317.527.323.417.646.427.29.828.922.015.9	AlwaysMost of the TimeSometimesRarely16.87 30.4 30.915.37 22.6 23.819.17 15.6 15.6 15.019.97 12.1 15.624.4 32.022.7 21.615.3 16.318.0 11.329.9 22.722.6 19.214.8 20.914.8 9.924.2 2.7 2.718.3 2.7 2.7 2.3.417.5 1.7.5 1.5.0 12.5 8.515.0 12.5 8.528.922.015.914.1	AlwaysMost of the TimeSometimesRarelyNever16.87 30.4 30.915.37 22.6 23.819.17 15.6 15.019.97 12.1 19.2 15.629.07 19.2 19.2 13.824.4 32.022.7 21.615.3 16.318.0 11.319.3 18.429.9 22.7 22.722.6 14.8 20.914.8 9.919.3 26.224.2 2.7 <b< td=""></b<>

^{*}p < .05

**p < .01

"always" wearers and more "never" wearers than expected. In addition, there were less of the 55+ age group reporting that they never wore their belt than expected. The gender differences (p = .012) were largely attributable to the values reported by males and females in the "always" and "rarely" groups. As is typically the case, more females than males report "always" wearing their belts, with the opposite trend for the "rarely" group.

Prior to the enactment of the mandatory belt law, the tendency was for the white belt use rate to far exceed the black use rate. For example, the pre-law front seat occupant use rates reported for N.C. were 25.2 percent for the white group and 14.4 percent for the black group. This gap narrowed substantially during the "grace" period observations taken across the state (Reinfurt, et al., 1987), and was also true for the telephone survey data, although the differences here were significant (p = .003).

There were large significant differences in "grace" period belt wearing as reported by the different education groups (p = .000). The largest cell chi-square values emerged from the group with a college education or advanced degree, whose belt wearing was quite a bit higher than the other groups. Almost half of this group reported wearing their belts "always."

Belt Use Since the \$25 Fine

Those surveyed were also asked how often they had worn their safety belt since January 1, 1987, when the fine for non-compliance became effective (Q1). The distribution of the available categories is shown below:

Belt Wearing During Citation Phase	<u>N</u>	%
Always	586	52.0
Most of the time Sometimes	341 95	30.3
Rarely	64	5.7
Never	40	3.6
	1126	100.0

The N.C. observational surveys showed a large increase in belt wearing after the \$25 fine became effective. The first survey was taken in January, 1987, and showed a belt wearing rate of 75.8 percent for the front seat occupants. Since that time the use rate has been falling and was observed to be 60.5 percent in October, 1987 (Reinfurt, et al. 1987). These self-reported telephone survey data appear to be a bit inflated, as the sum of the "always" and "most of the time" groups totals 82.3 percent (but, again, inflation would be favored by the wording of the questionnaire).

The demographic comparisons for this variable are found in Table 3.7, and the results are not unlike those found for the preceding question concerning

Table 3.7. Belt use during citation phase by demographic variables (percent of group choosing this response).

Citation Phase Belt Use

	<u>Always</u>	Most of <u>the Time</u>	Sometimes	<u>Rarely</u>	<u>Never</u>
Age**					
18-25	38.5 %	32.2%	12.6%	9.1%	7.7%
26-55	53.4	28.9	9.0	5.4	3.4
55+	55.2	32.3	5.5	4.9	2.1
Sex**					
Male	41.5	34.2	10.8	7.9	5.6
Female	59.9	27.3	6.7	4.0	2.0
Education**					
Less than high school	47.6	33.5	8.9	6.9	3.2
High school graduate	47.1	30.0	11.1	6.8	5.0
Some college	51.3	30.7	7.9	6.4	3.8
College grad. or greater	65.8	26.8	4.3	1.7	1.3
Overall	52.0	30.3	8.4	5.7	3.6

^{**}p < .01

the "grace" period. Concerning age, only 38.5 percent of the 18-25 group stated that they wear their belt all the time, compared to 53-55 percent for the 26-55 and 55+ groups (p = .001). Combining the "always" and "most of the time" groups during the "grace" period and citation phase yields the following belt use rates by age group:

Percent Using Seat Belts ("Always" + "Most of the Time")

Age	"Grace" Period	Citation Phase	Difference	
18-25	32.1%	70.7%	38.6%	
26-55	53.0%	82.3%	29.3%	
55+	54.7%	87.5%	32.8%	

Thus, even though the 18-25 age group still had the lowest combined use rate, this group had the largest shift when the \$25 fine became effective.

The male-female differences are also large (p = .000) and are similar to the "grace" period results, where considerably more females stated that they always wore their belt. The race breakdown during the citation phase showed no significant differences, which is further evidence that the black-white belt wearing gap has dramatically narrowed. Concerning education, the differences are significant (p = .001) and again follow the trend of belt wearing being directly proportional to amount of education.

Belt Wearing Frequency Over the Eight Months Since the Inception of the \$25 Fine

Since this survey was administered about eight months after the \$25 fine became effective, we asked certain respondents whether they were wearing their safety belts less often now than when the fine first went into effect (Q3). Those receiving this question had indicated that their belt use since the \$25 fine was "most of the time," "sometimes," or "rarely." The "always" and "never" groups were excluded. Of those receiving the question, only 14 percent responded that they were wearing their belt less. There were no significant differences here by age, sex, race, or education. Concerning the belt wearing variable, the "sometimes" and "rarely" wearers were much more likely to wear their belt less than the "most of the time" group (p = .000), as shown below:

	Belts	Worn Less
	Since	\$25 Fine?
Belt Use		
During Citation Phase	Yes	No
Most of the time	9.8%	90.2%
Sometimes	19.7%	80.3%
Rarely	40.7%	59.3%

Those responding that they were wearing their belt less (n=50) were asked to state the main reason why. These responses are categorized below:

Reason Wearing Belt Less	N	%
Less enforcement	5	10.0
Not a habit	9	18.0
Belt uncomfortable, inconvenient	16	32.0
Heard about someone seriously injured or killed while wearing a belt	3	6.0
Belts are not effective	3	6.0
Only drive close to home	3	6.0
Other	<u>11</u>	22.0
	50	100.0

The most prevalent reason stated concerned the lack of comfort and convenience of belts. Another 18 percent stated they had not been able to form a belt use pattern. Only 10 percent of the group mentioned less enforcement. There were so few respondents to this question that further crosstabulations are not discussed.

Percent of Drivers and Front Seat Passengers Wearing Safety Belts

To get a feel for the perception of belt wearing in North Carolina, we asked respondents to state what percent of drivers and front seat passengers in North Carolina currently wear safety belts (Q25). While the answers here ranged from 0 to 100 percent, about one-fourth felt that 50 percent of North Carolina front seat occupants wear safety belts, and another one-fifth gave an answer of 75 percent. The median percentage value was about 63 percent, which is identical to the current use rate (through November, 1987). Thus, the respondents correctly perceived a reasonably high belt use rate for North Carolina compared to other states.

There were significant differences for this perception variable by race, education, and belt wearing group (Table 3.8). The black group tended to select the largest percent belt wearing group (76-100%) (p = .000). The variation in the percent group was widespread by education group (p = .029). The belt wearing groups followed the tendency seen earlier, where the "always" and "most of the time" wearers tended to think more North Carolinians were "buckling up" and vice versa for other groups (p = .000). Table 3.8. Percent of N.C. drivers and front seat passengers estimated to be wearing safety belts by demographic and belt wearing variables (percent of group stating this response).

Percent	Thought	to	Wear	Belts	
	Tuodegue				

	<u>0-50%</u>	<u>51-75%</u>	76-100%
Race**			
White	39.8 %	40.1 %	20.1%
Black	36.7	29.2	34.2
Education*			
Less than high school	40.6	32.5	26.9
High school graduate	43.7	36.0	20.3
Some college	33.3	44.4	22.2
College grad. or greater	36.5	42.8	20.7
Belt Wearing Group**			
Always	32.4	39.1	28.4
Most of the time	34.5	45.4	20.1
Sometimes	58.1	31.2	10.8
Rarely	69.4	21.0	9.7
Never	77.5	22.5	0
Overall	39.1	38.6	22.3

*p < .05 **p < .01

Percent of Friends Wearing Safety Belts

As a follow-on to the above question, we asked the respondents what percent of their friends wear safety belts (Q28). Here the median value shifted to a value of 79-80 percent, and the modal answer was 100 percent.

Grouping the data into the same percentage categories used above allows for some interesting comparisons between these questions.

	Percent	Thought to	Wear Belts
	0-50%	<u>51-75%</u>	76-100%
Front Seat Occupants	39.1%	38.6%	22.3%
Friends	31.0%	18.7%	50.3%

Thus, slightly over half of the respondents stated that 76 percent or more of their friends wear safety belts, as opposed to 22.3 percent of all front seat occupants in North Carolina.

Crosstabulating these responses yielded significant differences for all but the race variable (Table 3.9). Concerning age, the friends of the 18-25

Table 3.9. Percent of friends wearing seat belts by demographic and belt wearing groups (percent of group stating this response).

Percent of Friends Wearing Seat Belts

0-50% 51-75% 76-100% Age** 18-25 40.8% 16.2% 43.1% 26-55 32.5 19.0 48.5 55+ 17.9 20.9 61.3 Sex** Male 37.1 20.0 42.9 Female 18.5 57.7 23.8 Education** Less than high school 30.5 18.2 51.4 35.9 19.2 44.9 High school graduate Some college 28.6 19.6 51.8 19.5 College grad. or greater 19.0 61.5 Belt Wearing Group** 16.7 17.8 65.5 Always Most of the time 29.0 25.4 45.6 Sometimes 69.1 14.8 16.1 Rarely 75.5 10.2 14.3 Never 90.0 3.3 6.7 Overall 31.0 18.7 50.3 **p < .01

year olds were less likely to wear belts and the friends of the 55+ year olds more likely to wear belts (p = .000). Friends of females were also more likely to wear belts (p = .000). In general, the friends of those with more education were more likely to wear belts (p = .002). And finally, the friends of the "always" and "most of the time" groups were much more likely to wear belts than the other groups (p = .000).
Been Asked or Told to "Buckle Up"

As another social context question, we asked whether the respondents could remember being asked or told to "buckle up" by a driver or passenger (Q26), and some 56 percent gave a positive reply. Sixty-seven percent of those 18-25 years old said "yes" to this question, compared to 56 percent of those 26-55 years old and 50 percent of those greater than 55 years old (p = .002). The other significant differences here applied to the belt wearing groups (p = .000), as shown by the distribution below, where there was much variability:

Belt Wearing Group	Percent Reporting Having Been Asked to Buckle Up
Always Most of the time Sometimes Rarely Never	43.7% 70.4% 80.0% 59.4% 42.5%

The individual cell chi-square values showed that the differences were attributable to less of the "always" wearers than expected answering "yes" to this question and more of the "most of the time" and "sometimes" wearers than expected answering "yes" to the question.

Asked or Told Others to "Buckle Up"

Following up on the question above, we asked whether the respondent had told or asked other drivers and passengers to "buckle up" (Q27), and almost 80 percent said that they had done so. The crosstabulated responses (Table 3.10) show significant differences by age, sex, education, and belt wearing group. In regard to age, the middle age group was more likely to have asked or told others to "buckle up" (p = .000), perhaps because they are the group most likely to have children. Females (p = .000), those with more education (p = .021), and those who wear their belt more frequently (p = .000) were also more likely to have asked or told others to "buckle up". In the last category, almost 90 percent of the "always" wearers said that they had asked or told others to use their belt, compared to 35 percent of the "never" wearers. Table 3.10. Responses to question asking if person had told or asked other drivers or passengers to "buckle up" (percent of group stating the response).

Told or Asked Others to Buckle Up?

	Yes	No
<u>Age</u> ** 18-25 26-55 55+	71.3 % 83.3 75.3	28.7 % 16.7 24.7
<u>Sex</u> ** Male Female	73.4 83.9	26.6 16.2
<u>Education</u> * Less than high school High school graduate Some college College grad. or greater	72.6 80.0 82.0 82.7	27.4 20.0 18.0 17.3
Belt Wearing Group** Always Most of the time Sometimes Rarely Never	87.5 82.7 59.0 46.9 35.0	12.5 17.3 41.1 53.1 65.0
Overall	79.4	20.6

*p < .05 **p < .01

Opinions About Safety Belts

Six statement items were developed to gauge opinions regarding seat belt comfort, effectiveness, need, benefits, and the issue of mandatory seat belt use as an infringement on personal rights (Q 10-15). A five-point Likert scale ranging from strongly agree to strongly disagree was used to assess survey respondents' attitudes regarding these issues.

Safety Belts Save Lives and Reduce Injuries

Overall 89 percent of the respondents either strongly agreed or agreed to the statement (Q 10) that safety belts save lives and reduce injuries. When examining categories within age, race, sex, and education groups, the youngest age group (91.7%), whites (89.9%) and those with the highest level of education (96.9%) indicated the greatest agreement (combined strongly agree and agree) to the statement as shown in Table 3.11. No significant difference between male and female responses was found.

Table 3.11. Opinion that safety belts save lives and reduce injuries by age, race, education, and belt wearing.

	Strongly			Strongly	
	Agree	Agree	Disagree	Disagree	Uncertain
Age **					
18-25	40.6 %	51.1%	6.3 %	0.7%	1.4%
26-55	46.6	43.9	5.7	0.2	3.7
>55	34.8	50.3	8.8	0.0	6.1
Race *					
White	43.9	46.0	5.7	0.2	4.2
Black	34.9	50.0	11.6	0.0	3.5
Education **					
Less than high school	26.5	55.4	10.8	0.0	7.2
High school graduate	35.3	52.1	7.9	0.0	4.6
Some college	45.5	45.9	6.0	0.4	2.3
College graduate or >	67.8	29.1	0.9	0.4	1.7
Belt Wearing Group**					
Always		94.5	2.7		2.7
Most of the time		88.2	7.7		4.1
Sometimes		81.1	12.6		6.3
Rarely		71.9	15.6		12.5
Never		61.5	33.3		5.1
Overal1	42.4	46.7	6.7	0.2	4.1

Belts Save Lives and Reduce Injuries

* p < .05 ** p < .01

Because of the small numbers in some response categories, strongly agree/agree and strongly disagree/disagree were combined in order to analyze responses by belt use. As indicated in Table 3.11 belt use appears to be directly related to the save lives-reduce injury statement in that the more frequent the belt use, the more likely was there agreement with this statement. Nearly 95 percent of the always belt wearers agreed that safety belts save lives and reduce injury compared to only 62 percent of the never wearers.

Seat Belts Are Inconvenient or Uncomfortable to Use

Over half of all respondents (55.7%) indicated that safety belts were inconvenient and uncomfortable to use (Q 11). Examination by age group revealed that approximately 60 percent of the older adults agreed or strongly agreed with the statement regarding safety belt inconvenience and discomfort, compared to 54 to 55 percent of those in the middle and youngest age groups. Degree of discomfort-inconvenience tended to be inversely related to education level, in that the higher the education level, the less likely were safety belts perceived as being inconvenient and uncomfortable (Table 3.12). The same type of tendency was present in the belt wearing groups, as the more frequent belt wearers were less likely to agree that belts are inconvenient and uncomfortable. Males and females were equally likely to indicate discomfort and inconvenience as were whites compared to blacks.

Table 3.12. Opinion that belts are inconvenient and uncomfortable by age, education, and belt wearing.

	Strongly			Strongly	
	Agree	Agree	Disagree	Disagree	Uncertain+
Age *					
18-25	12.6%	42.7 %	39.2%	4.9%	0.7%
26-55	9.7	44.1	36.3	8.3	1.7
55 or >	10.6	49.0	37.4	1.8	1.2
Education **					
Less than high school	10.4	55.4	32.5	.8	1.2
High school graduate	12.6	46.8	34.5	4.7	1.3
Some college	13.1	41.6	37.0	6.4	1.9
College graduate or >	4.0	36.5	45.7	13.0	1.3
Belt Wearing Group **					
Always	3.7	39.9	46.3	10.1	
Most of the time	11.2	51.8	34.9	2.1	
Sometimes	26.3	52.6	19.0	2.1	
Rarely	35.9	53.1	11.0	0	
Never	22.5	57.5	20.0	0	
Overall	10.3	45.4	36.9	6.0	1.4

Belts Are Inconvenient and Uncomfortable

* p < .05

** p < .01

+ "Uncertain" response for the belt wearing categories coded as missing for statistical testing.

Safety Belts Needed to Offset Injuries Due to Increased Speed Limits

Approximately 72 percent of the respondents were of the opinion that safety belts are needed to offset the likelihood of increased injuries due to the higher 65 mile per hour speed limit on Interstate highways (Q 12). Older adults, women, and college graduates were more likely to strongly agree and agree with this statement than were others in the age, sex, and education groups (Table 3.13). Within the groups, roughly 8-9 percent of the older adults and adults with the least education indicated uncertainty about the need for seat belts due to higher increased speed limits.

Table 3.13. Opinion that belts are needed due to higher speed limit by age, sex, education, and belt wearing.

	Strongly Agree	Agree	Disagree	Strongly <u>Disagree</u>	Uncertain
Age **					
18-25	21.7%	48.3 %	27.3 %	1.4%	1.4%
26-55	23.8	47.6	23.2	1.8	3.7
55 or >	16.1	58.4	15.5	1.2	8.8
Sex **					
Male	16.8	47.2	28.5	2.7	4.8
Female	24.5	53.6	16.2	0.8	5.0
Education **					
Less than high school	13.3	56.2	20.9	1.2	8.4
High school graduate	19.8	53.0	22.4	1.3	3.4
Some college	24.3	47.6	21.4	3.4	3.4
College graduate or >	28.7	45.2	20.4	0.4	5.2
Belt Wearing Group**					
Always	28.0	52.8	13.2	0.9	5.1
Most of the time	19.1	51.3	24.3	2.1	3.2
Sometimes	7.5	59.6	26.6	2.1	4.3
Rarelv	4.7	29.7	53.1	4.7	7.8
Never	0.0	32.5	55.0	2.5	10.0
Overall	21.2	50.8	21.4	1.6	4.9

Belts Needed to Offset 65 mph Speed Limit

** p < .01

Safety Belts Don't Seem to Work

A statement occasionally reported to safety belt researchers is that belts don't seem to work. It appears that some individuals perceive that the new belt systems with inertia reels do not offer protection because of the give or slack built into the system for comfort and freedom of movement. For this survey, respondents were asked to give their opinion on the following statement: Safety belts don't seem to work--that is, they seem too loose to protect you in an accident (Q 13). Almost 20 percent of all respondents agreed to some extent with this statement. Older persons and persons with the lowest level of education were the most likely to agree (Table 3.14). "Never" wearers of safety belts indicated much more agreement with the statement that safety belts don't seem to work than did respondents who "always" or "most of the time" wore their belts. No significant differences were found in the responses to this statement among whites and blacks, or between males and females.

Table 3.14. Opinion that safety belts don't seem to work by age, education, and belt wearing.

Beits Don't Seem to w	Work	to	Seem	't	Don	Belts
-----------------------	------	----	------	----	-----	-------

	Strongly Agree	Agree	Disagree	Strongly <u>Disagree</u>	Uncertain
Age **					
18-25	4.2%	12.6%	60.8%	20.3%	2.1%
26-55	1.5	17.1	57.4	17.4	6.9
55 and >	1.8	21.0	58.4	6.4	12.5
Education **					
Less than high school	1.2	23.8	58.5	5.7	10.9
High school graduate	3.2	19.2	56.1	12.4	9.2
Some college	2.6	17.3	57.5	17.7	4.9
College graduate or >	.0	8.8	61.3	23.9	6.1
Belt Wearing Group**					
Always	1.4	13.4	59.8	19.0	6.5
Most of the time	2.7	15.0	59.7	12.4	10.3
Sometimes	4.2	33.7	47.4	7.4	7.4
Rarelv	1.6	31.3	59.4	3.1	4.7
Never	0.0	40.0	42.5	2.5	15.0
Overal1	2.0	17.6	58.0	14.5	7.9

** p < .01

Safety Belts Will Reduce Costs to Society

Nearly 72 percent of all respondents indicated they agree or strongly agree with the statement that the safety belt law will reduce the costs to society of accidents and injuries (Q 14). Older adults exhibited slightly less agreement and considerably more uncertainty than adults in the other two age categories, as shown in Table 3.15. Females were somewhat more likely than males to agree that a belt law would reduce costs to society, as were individuals with higher levels of education. These two groups also showed substantial uncertainty about this issue.

Table 3.15. Opinion that the safety belt law will reduce costs to society by age, sex, education, and belt wearing.

	Strongly			Strongly	
	Agree	Agree	Disagree	Disagree	Uncertain
Age **					
18-25	7.8%	64.8 %	20.4%	.7%	6.3 %
26-55	11.1	60.7	21.4	.8	6.1
55 and $>$	9.5	61.2	14.1	.3	15.0
Sex **					
Male	11.0	58.1	24.0	.2	6.7
Female	9.5	63.8	15.4	.9	10.3
Education **					
Less than high school	5.7	60.1	21.8	.4	12.1
High school graduate	7,4	63.2	21.4	.8	7.1
Some college	12.9	59.8	19.3	1.1	7.2
College graduate or >	16.5	61.7	12.2	.0	9.6
Belt Wearing Group **					
Always		78.6+	12.0++		9.4
Most of the time		75.7	16.3		8.0
Sometimes		53.7	37.9		8.4
Rarely		45.3	45.3		9.4
Never		20.0	75.0		5.0
Overall	10.2	61.4	19.1	0.6	8.7

Belt Law Will Reduce Costs to Society

** p < .01
+ "Strongly Agree" and "Agree" combined for statistical testing.
++ "Strongly Disagree" and "Disagree" combined for statistical testing.</pre>

Safety Belts Are an Infringement on Rights

The issue of mandatory safety belt use as an infringement on personal rights is one of considerable importance and interest, with almost 60 percent of the respondents strongly agreeing or agreeing with this statement (Q 15). When examining responses by age, sex, education, and belt use of the

Media Coverage, Distribution of Educational and Promotional Materials about Safety Belts and the Law

In order to determine the extent to which individuals had learned about seat belt issues from newspapers, television, and radio, three questions were asked. These dealt with whether individuals had heard or seen anything in the media about the safety belt law (Q 16), attempts at its repeal (Q 18), and the effectiveness of belts in saving lives and reducing injury (Q 17). A higher percent of respondents had heard or seen items regarding saving lives and reducing injury (72%) than had heard or seen features about the seat belt law (57%) or attempts at repeal of the law (45%). Examination of responses to the media items by belt use and demographic variables revealed that significant differences were found, but this varied among the three items as shown in Tables 3.17 - 3.19. Note in Table 3.17 that respondents who indicated that they never wear safety belts were the most likely to have heard or seen features about attempts to repeal the safety belt law.

Table 3.17. Heard or seen features about attempts at repeal of the belt law by sex and belt wearing.

Heard or Seen Repeal Attempts?

Soy **	Yes	No	Don't <u>Know</u>
Male	50.2 %	49.0 %	.8%
Female	41.2	56.7	2.0
Belt Wearing Group **			
Always	40.2	58.5	1.4
Most of the time	48.5	48.8	2.7
Sometimes	48.4	51.6	0.0
Rarely	56.3	43.8	0.0
Never	60.0	40.0	0.0
Overall	45.1	53.4	1.5

** p < .01

Distribution of Safety Belt Promotional Materials

A number of questions were developed to learn about the distribution of safety belt promotional materials (Q 19-24). Only 151 (13.4%) of the 1127 respondents had received promotional materials in the past year. Younger

Table 3.18. Heard or seen features about the safety belt law by age and education.

Heard or Seen Belt Law Features?

Acc. **	Yes	No	Don't <u>Know</u>
18-25 26-55 >55	76.9 % 62.9 44.1	23.1 % 35.1 48.3	.0 % 2.0 7.6
Education ** Less than high school High school graduate Some college College graduate or >	49.6 59.7 63.3 64.1	46.4 36.6 35.2 31.6	4.0 3.7 1.5 4.3
Overall	59.2	37.4	3.4

** p < .01

Table 3.19. Heard or seen features about belts saving lives and reducing injury by age, sex, belt wearing.

Heard or Seen Features About Belts Saving Lives?

	Yes	No	Don't <u>Know</u>
<u>Age</u> ** 18-25 26-55 >55	63.6 % 71.7 75.7	36.4 % 26.6 21.9	.0 % 1.7 2.4
<u>Sex</u> ** Male Female	64.7 77.2	33.4 21.2	1.9 1.6
Belt Wearing Group Always Most of the time Sometimes Rarely Never	** 78.2 70.1 65.3 51.5 45.0	20.1 28.5 32.6 46.9 52.5	1.7 1.5 2.1 1.6 2.5
Overall	71.9	26.4	1.7

** p < .01

adults were more likely to have received these materials than older adults (p < .01) as were individuals with higher levels of education (p < .001). Similar numbers of materials (from 32-58) were distributed from doctor and health clinic offices, employers, community organizations, police officers, and schools.

Employer Policy Requiring Safety Belt Use on the Job

Eight hundred and four of the total 1127 respondents were in employment situations where there was a possibility that a policy requiring belt use on the job could be in effect (Q 29). Approximately 23% indicated that their employer had such a policy, 71% indicated no policy, and 6% did not know.

Safety Belt Enforcement and Perception of Enforcement

Safety Belt Tickets or Warnings

One item (Q 31) assessed respondents' experience or knowledge about tickets or warnings received for not wearing safety belts. Nearly 30 percent either had received or knew of someone who had been given a ticket or warning for not wearing a safety belt. Of the demographic variables, only level of education in relation to the ticket-warning variable was found to vary significantly (Table 3.20). College graduates were less likely to have received or to know about tickets or warnings given than those with fewer years of education.

Table 3.20. Experience or knowledge about tickets or warnings received for not wearing safety belts by education.

Experience or Knowledge About Tickets or Warnings

	Yes	No	Don't Know
Education**			
Less than High School	30.1%	68.7 %	1.2%
High school graduate	32.6	66.6	.8
Some college	33.0	66.3	.8
College graduate or $>$	18.2	81.4	.4
Overall	29.2	70.0	0.8

Perception of Enforcement of the Safety Belt Law

Responses to how strictly the safety belt law was being enforced at the time of the survey (in September and October) as compared to in January, 1987, when the fine went into effect (Q 33), varied considerably among all respondents as shown in Table 3.21. Roughly 35 percent indicated that they

Table 3.21. Safety belt law enforcement at time of survey compared to when fine went into effect.

How strictly enforced	<u>N</u>	<u>%</u>
Much more	134	11.9
Somewhat more	247	22.0
Same	388	34.6
Somewhat less	180	16.0
Much less	69	6.1
Don't know	104	9.3
	$1\overline{122}$	100.0

thought the safety belt law was being enforced at the same level at the time of the survey compared to when the fine went into effect. Nearly 10 percent of the respondents did not have an opinion on this issue. Only 22 percent felt that the seat belt law was being less strictly enforced.

An examination of demographic variables revealed that age, sex, level of education, as well as the belt wearing variables were found to be important (Table 3.22). It is noteworthy that "always" belt wearers were considerably more likely to indicate much stricter law enforcement since the fine (14%) than those who "rarely" or "never" wear safety belts (5%). Review of the responses by respondent age showed that older adults generally were more likely to indicate increased enforcement than other age categories, but 16 percent responded "don't know" to the enforcement question compared to 6 percent of the younger groups. The level of education was shown to be highly related to perception of enforcement in that the lower the level of education, the higher was the percentage of those who perceived increased law enforcement. However, 14 percent of college graduates responded "don't know" to this issue. Finally, women were more likely than men to perceive higher levels of enforcement since the fine.

Table 3.22. Law enforcement at time of survey compared to when fine came into effect by age, sex, education, and belt wearing.

How Strictly Enforced

	Much <u>More</u>	Somewhat <u>More</u>	Same	Somewhat <u>Less</u>	Much <u>Less</u>	Don't <u>Know</u>
Age **						
18-25	9.1%	18.2%	39.2 %	16.8%	10.5%	6.3%
26-55	12.0	21.6	35.3	17.9	6.6	6.6
>56	13.2	24.5	31.0	12.0	3.4	16.0
Sex **						
Male	9.0	19.0	35.8	19.4	7.7	9.2
Female	14.2	24.3	33.6	13.6	5.0	9.4
Education **						
Less than high school	15.3	28.6	35.9	10.1	1.2	8.9
High school graduate	14.2	32.6	32.6	15.8	7.1	7.9
Some college	10.9	19.2	33.1	19.6	9.8	7.5
College graduate or >	5.7	17.5	38.2	18.9	5.7	14.0
Belt Wearing Group **						
Always	14.0	22.3	33.1	15.7	4.3	10.6
Most of the time	11.2	23.2	36.8	17.4	4.1	7.4
Sometimes	9.6	24.5	33.0	16.0	10.6	6.4
Rarely	4.7	15.6	34.4	9.4	23.4	12.5
Never	5.1	10.3	43.6	20.5	12.8	7.7
Overall	11.9	22.0	34.6	16.0	6.1	9.3

** p < .01

Opinions About Increasing Belt Use

One section of the questionnaire attempted to elicit opinions about ways to increase safety belt use (Q34-40). Respondents were asked to "answer with a yes, no, or maybe to whether you think these suggestions would work in increasing safety belt use." Listed on the following page are the suggestions and the percentage distribution of responses. Overall, the suggestions were seen as good ways to increase belt use, in that generally two-thirds or more of the respondents agreed with each concept. The suggestion drawing the highest percentage of positive comment was the last on the list, that of having the media publicize stories about people who were saved by wearing their belts. High levels of support were also seen for on-the-job belt use policies, ensuring that police wear their belt, and having police use the seat belt "salute" as a reminder.

Likely to Increase Belt Use?

Suggestion	Yes	No	Don't <u>Know</u>
Have police write more tickets for not wearing a belt	69.0 %	26.2 %	4.8%
Increase the \$25 fine for not wearing belts	63.1	32.1	4.8
Provide more information about the effectiveness of safety belts	70.5	22.0	7.5
Make sure local police use their belts	76.2	19.8	4.0
Have police tug on their shoulder straps as a reminder when they see an unbuckled motorist	75.6	17.2	7.2
Encourage employers to have strong belt use policies for on-the-job automobile use	79.0	14.5	6.5
Have media publicize stories about people who were saved by using their safety belts	86.9	9.4	3.7

Examining these variables by the demographic and belt wearing groups produced a variety of interesting results. To simplify the presentation of these results, comments pertinent to each question are listed below:

- 1. Issue more tickets More agreement
 - by the 55+ age group than the other two age groups (p=.018)
 - by females than males (p=.000)
 - by the more frequent belt wearers (p=.000)
- 2. Increase the \$25 fine More agreement
 - by the 18-25 age group than the other two age groups (p=.010)
 - by females than males (p=.000)
 - by blacks than whites (p=.018)
- 3. Provide more belt effectiveness information More agreement
 - by the 26-55 age group, but more uncertainty by the 55+ age group (p=.000)
 - by the more frequent belt wearers (p=.000)

- 4. Make sure police use their belts More agreement
 - by the 55+ age group, but also more uncertainty (p=.000)
 - by females (p=.001)
 - by the more frequent belt wearers (p=.000)
- 5. Have police give the seat belt "salute" More agreement
 - by those with less education, but also more uncertainty by those with less than a high school education (p=.017)
 - more uncertainty by the 55+ age group (p=.001)
- Have strong on-the-job seat belt policies -6.
 - More agreement by the middle age group, but again more uncertainty by the 55+ age group (p=.000)
 - more disagreement by males and more uncertainty by females (p=.001)
 - more uncertainty by the black group (p = .033)
 - more agreement as education increases but more uncertainty ---by those with less than a high school education (p=.000)
 - more agreement by the more frequent belt wearers (p=.000)
- 7. More publicity about people saved by their belts More agreement - by females (p=.001)

 - by the more frequent belt wearing groups (p=.000)

Two points are apparent after filtering through many tables related to this set of suggestions about ways to increase seat belt use. First, the 55+ age group tended to have more uncertainty concerning these issues than the other age groups. Second, the largest percentage differences were found among the belt wearing groups and not the basic demographic variables. For example, the last suggestion in the list pertains to having the media publicize stories about people who were saved by using their safety belts. Overall, some 87 percent of the respondents felt that this action would increase seat belt use. However, the range of agreement by the belt wearing categories was quite large, as shown below:

Belt Wearing Group	Percent Agreeing with More Media Stories About Belts
Always	91.6%
Most of the time	88.9%
Sometimes	80.0%
Rarely	70.3%
Never	45.0%

This implies that targeting of efforts to increase belt use should focus more on the belt wearing groups than on demographic groups, where the differences appear to be smaller.

Reported Driving Behavior

A number of items (Q 54 through Q 60) requested information about respondents' violation and accident history, drinking and driving or riding behavior, belt use following involvement in an accident, and usual highway driving speed. Assurances of confidentiality were given again prior to administering this section of the questionnaire. Nonetheless, we have less confidence in the accuracy of the self reported accident and violation data.

Accident and Violation Involvement in the Past Ten Years

Approximately 39 percent of all respondents reported that they had been involved in an accident in the past ten years (Q 54), with slightly less than one third of these accidents resulting in personal injury (Q 55). Because of the relatively small number of personal injury accidents, it was not feasible to test for significant differences by age, race, sex, education, and belt use.

Accident involvement (Q 54) varied significantly by respondents' age, sex, and belt use, but not by race and education. Younger respondents and males were more likely to be involved in accidents than were respondents in other categories as indicated in Table 3.23. Accident involvement varied by belt use, but a direct association was not shown. As may be expected, always belt users were the least likely to indicate accident involvement in the past ten years (65% reporting zero accidents).

When questioned about seat belt use after being involved in an accident (Q 56), 320 (74.8%) of the 428 respondents indicated that their seat belt use had stayed the same, 99 (23.1%) indicated that it had increased, and 9 (2.1%) indicated that it had decreased. Insufficient data were available for further analysis by age, race, sex, education, and belt use.

It is noteworthy that somewhat fewer respondents (36.2%) indicated that they had received a moving violation traffic ticket (Q 57) than had been involved in an accident in the past 10 years (39%). Highly significant differences were found within the age, sex, race, education, and belt wearing Table 3.23. Percent of respondents reporting accidents in past ten years by age, sex, and belt wearing.

	One	Two	<u>> Three</u>	None
Age**				
18-25	23.8%	14.7%	14.7%	46.9%
26-55	26.5	9.8	5.5	58.2
>55	17.9	6.4	2.1	73.6
Sex **				
Male	26.0	11.6	8.1	54.3
Female	21.9	7.8	3.9	66.5
Belt Wearing Group **				
Always	22.6	8.2	4.1	65.1
Most of the time	27.0	10.6	4.1	58.4
Sometimes	17.9	15.8	12.6	53.7
Rarely	21.9	7.8	12.5	57.8
Never	27.5	5.0	15.0	52.5
Overall	23.6	9.4	5.7	61.3

Number of Accidents Reported

* p < .05 ** p < .01

variables (p< .01). Those most likely to report violations were respondents who were male, in younger age groups, white, college educated, or "sometimes" belt users (Table 3.24). Nearly 75 percent of the females compared to 50 percent of the males indicated they had no violations. Similarly, 82 percent of those 55 and over had no violations compared to 53 to 57 percent of those in the younger age categories with no violations. Generally, the higher the education level, the greater was the likelihood of reported moving violations. This trend was quite consistent across all violation categories.

A somewhat mixed pattern was evident for the belt wearing groups. The "always" belt wearing group reported the highest percent of those with no moving violations (70%), but "never-rarely" users had a higher percent of those with no violations (56%) than did the "sometimes" group (43%). However, the "never-rarely" group (10.7%) compared to the "always" wearer group (3.6%) reported a considerably higher percent of those with four or more moving violations.

Fable 3.24.	Percent of respondents reporting moving violations in
	past ten years by demographic and belt wearing variables.

A **	One	Two	Three	> Four	None	<u>Know</u>	
Age ^^ 18-25	25.2 %	7.7%2	5.6 %	9.1%	52.5 %	.07	
26-55	25.8	6.9	4.8	4.8	57 1	7	
>55	10.7	3.1	1.2	2.5	82.0	.6	
Sex **							
Male	26.3	8.1	6.5	8.1	49.5	1.5	
Female	17.5	4.1	1.9	2.0	74.5	.0	
Race **							
Black	23.5	6.5	1.2	.0	68.8		
White	21.2	5.8	4.2	5.3	63.4		
Education **							
Less than high school	15.2	5.8	.8	2.9	72.4	2.9	
High school graduate	19.8	5.0	2.9	4.5	67.7	.0	
Some college	22.5	5.6	6.4	4.5	61.1	.0	
College graduate or >	28.6	7.4	5.6	6.9	51.5	.0	
Belt Wearing Group **							
Always	18.4	4.9	2.8	3.6	70.4		
Most of the time	22.9	7.1	4.2	3.9	62.0		
Sometimes	36.2	6.4	7.5	7.5	42.5		
Never-Rarely	20.4	6.8	5.8	10.7	56.3		
Overall	21.3	5.8	3.8	4.6	63.8	0.6	

Number of Moving Violations

* p < .05 ** p < .01

Drinking--Driving and Riding Behavior

Nearly 23 percent of the total number of respondents indicated that they had driven after drinking (Q 58), and 32 percent indicated that they had ridden with a drinking driver (Q 59). Males were much more likely to drive after drinking (34%) and to ride with a drinking driver (40%) than were females (14% and 27%, respectively). Younger age groups were also much more likely to combine drinking with driving or riding as indicated in Tables 3.25 and 3.26.

Also, whites (24%) were more likely than blacks (13.6%) to drink and drive, but both groups were equally likely to ride with a driver who had been

Table 3.25 Percent of respondents reporting driving after drinking alcoholic beverages by demographic and belt wearing variables.

A	Frequently	<u>Occasionally</u>	Seldom	Never	Don't <u>Know</u>
<u>Age</u> 18-25	2.8%	9.8%	20.3%	67.1 %	.0%
26-55	1.2	7.1	20.1	71.6	.0
>55	.9	2.2	3.1	93.5	.3
Sex **					
Male	2.7	10.2	21.2	65.9	.0
Female	.3	2.8	10.7	86.0	.2
Race *					
Black	1.2	5.3	7.1	86.4	
White	1.2	5.9	16.9	76.0	
Belt Wearing Group	o *				
Always	1.4	4.2	13.3	81.1	
Most of the time	e.6	7.9	17.0	74.5	
Sometimes	1.1	9.5	13.7	75.8	
Rarely-Never	3.9	6.7	21.2	68.3	
Overall	1.3	6.0	15.2	77.4	0.1

Driving After Drinking

Table 3.26 Percent of respondents reported riding with drivers who had been drinking alcoholic beverages by demographic and belt wearing variables.

Riding with Drivers Who Had Been Drinking

	itiding "	ich brivers and	nuu been	DIIMIN	Don't
	Frequently	<u>Occasionally</u>	<u>Seldom</u>	Never	Know
Age **					
18-25	4.9%	7.7%	31.5%	55.9%	.0%
26-55	1.7	7.4	29.1	61.0	.9
>55	.6	3.4	11.0	85.1	.0
Sex **					
Male	2.3	9.2	28.5	59.5	.6
Female	1.4	4.0	20.8	73.3	.5
Education **					
Less than high school	1.2	2.8	17.5	78.5	
High school graduate	1.9	6.9	20.6	70.7	
Some college	2.3	5.6	28.1	64.0	
College graduate or >	1.8	9.7	33.0	55.5	
Belt Wearing Group *					
Always	1.4	5.0	23.1	70.5	
Most of the time	.9	7.1	27.1	65.0	
Sometimes	5.3	10.5	21.1	63.2	
Rarely-Never	3.9	6.7	24.0	65.4	
Overall	1.8	6.2	24.1	67.4	0.5

* p < .05 ** p < .01 drinking (approximately 32%). Because of the relatively infrequent occurrences of drinking and driving, sufficient data were unavailable to fulfill the statistical requirements to analyze drinking and driving by level of education, but significant differences were found when examining education level with riding with a drinking driver. Generally the higher the education level, the higher was the likelihood of riding with a drinking driver. Approximately 56% of the college graduates compared to 79% of those with less than a high school education had never ridden with a drinking driver.

Frequency of belt use was associated with both drinking and driving and riding with a drinking driver as shown in Tables 3.25 and 3.26. "Always" belt wearers were more likely to report that they had never driven after drinking or ridden with a drinking driver then were those who wore their belts less frequently.

Driving Speed

In response to the item regarding usual highway speed driven (Q 60), 56 percent of the respondents indicated that they drove either at the speed limit or 5 to 10 miles per hour below the limit. Forty-one percent drove 5 to 10 miles above the speed limit, with the remaining 2 percent reporting that they drove more than 10 miles per hour above the speed limit. At the time the survey was taken, the speed limit on North Carolina highways was 55 miles per hour on all but designated Interstate highway sections which were 65 miles per hour.

Reported speed driven varied significantly by age, sex, education level, and belt use of the respondents (Table 3.27). Those in the youngest age group were much more likely to drive above the speed limit (79.9%) than were those in the 26 to 55 age group (48.4%) or the 55 and over age group (17.2%). Males tended to drive at higher speeds than females, as did respondents with higher levels of education. In general, the greater the belt use the more likely were respondents to drive within the speed limit. An exception to this was for the "sometimes" belt user group which reported the highest percent (58.5%) of those who drive above the speed limit.

	Highway Driving Speed				
	Speed <u>Limit</u>	5-10 <u>Below</u>	5-10 Above	> 10 <u>Above</u>	
<u>Age</u> ** 18-25 26-55 >55	16.9 % 44.1 56.4	4.2 % 7.6 26.5	68.3 % 46.8 17.2	10.6 % 1.6 .0	
<u>Sex</u> ** Male Female	38.5 48.1	10.9 13.2	47.1 37.4	3.6 1.3	
Education ** Less than high school High school graduate Some college College graduate or >	49.3 47.2 39.0 38.9	26.1 10.5 8.3 6.6	24.2 39.4 48.1 54.2	.5 3.0 4.6 .4	
Belt Wearing Group ** Always Most of the time Sometimes Rarely Never	46.8 43.4 36.3 37.1 35.0	13.7 12.1 5.5 12.9 7.5	38.1 42.2 57.2 46.8 42.5	1.4 2.4 1.1 3.2 15.0	
Overall	43.8	12.2	41.6	2.3	

Table 3.27. Percent of respondents reported highway driving speed by demographic and belt wearing variables.

* p < .05 ** p < .01

Urban-Rural Differences

Do seat belt wearing tendencies, attitudes about belts and belt laws, etc., vary by location of residence? Individuals at NHTSA have recently expressed interest in knowing more about this issue. To provide insight on this question, an urban-rural code was added to the responses based on the county of residence. Urban counties were defined as those that fall within a Standard Metropolitan Statistical Area. Overall, about 53 percent of the respondents lived in urban counties and 47 percent in rural counties.

Demographics and Other Comparison Variables

There were no significant urban-rural differences by sex and race, but significant differences existed by age, education, and belt wearing group.

Concerning age, there were more 18-25 year olds in urban areas than expected and fewer in rural areas (p = .002). Urban respondents were better educated (p = .001), with 24 percent having a college degree or greater education as opposed to 17 percent of the rural respondents. In addition, 26 percent of the rural respondents had less than a high school education compared to 19 percent of the urban respondents.

The current belt use variable indicated significant urban-rural differences, but the pattern was somewhat mixed (p = .005), as shown by the column percentage breakdowns below:

	Always	Most of <u>the Time</u>	Sometimes	Rarely	Never	<u>Overall</u>
Urban	57 .2%	46.8 %	41.1%	56.3 %	55.0 %	52.5%
Rural	42.8	53.2	59.0	43.8	45.0	47.5

A higher percentage of the "always" users tended to reside in urban locations, but so did the "rarely" and "never" users. Moreover, 53 percent of the most of the time "users" lived in rural areas.

There were no differences in car size by urban-rural residence, but 26 percent of the urban drivers drove imports compared to 18 percent of the rural drivers (p = .018). Average miles driven annually did not differ.

Attitudes About Belts

The residence of the respondent had some association with belt attitudes, but the differences were not across the board on all variables. Urban residents were more likely to favor the N.C. seat belt law (72% to 62%), but in large part the significant differences on this question were due to less uncertainty about the law by urban respondents and more uncertainty by rural respondents (p = .001). When the reasons for favoring or opposing the law were examined by the same groups described earlier, no significant differences existed.

Questions 10-15 asked opinions on statements concerning belts, and a few differences were found. Shown below are the results for these questions when the "Strongly Agree" and "Agree" responses are combined. Where significant differences existed, the pattern was for the urban respondents to have more favorable attitudes towards belts.

Item	Percentage	in Agreement	<u>P-value</u>
Belts save lives and reduce injuries	Urban Rural	91.7% 86.1%	.017
Belts are inconvenient or uncomfortable	Urban Rural	54.6% 58.6%	.044
Belts needed to offset 65 mph speed limit	Urban Rural	74.2% 69.8%	.051
Belts don't seem to work	Urban Rural	16.5% 23.1%	.002
Belt law will reduce cost to society	Urban Rural	73.9% 68.9%	.208
Belts are an infringement on rights	Urban Rural	57.2% 61.2%	.105

Questions 34-40 asked for an opinion about suggestions to increase belt use, such as police writing more tickets, having more stories about people being saved by their belts, etc. Interestingly, there were no significant differences for any of these suggestions by residence of the respondent. There were also no differences in regard to whether the respondent had been asked to "buckle up" by someone else or whether they had asked anyone else to "buckle up."

Urban respondents were more likely to feel that the N.C. seat belt law has been effective (p = .011), and some 76 percent of the urban respondents said they favor keeping the belt law as opposed to 67 percent of the rural respondents (p = .008).

Attitudes About Enforcement

There were urban-rural differences associated with an understanding of the primary enforcement provision of the N.C. law. While 12 percent of the urban respondents answered (incorrectly) that police could not stop someone simply for not wearing a seat belt, almost 19 percent of the rural respondents gave this incorrect answer (p = .002). The remaining enforcement questions in this series, concerning: (1) whether the respondent or anyone the respondent knew had received a ticket or warning (Q 31), (2) the correct amount of the fine (Q 32), and (3) whether the amount of enforcement has decreased over time (Q 33), all produced non-significant urban-rural differences.

Educational/Promotional Information

Questions 16-18 asked whether respondents had heard about certain belt issues in the media, and all three produced non-significant urban-rural differences. In addition, there were no differences concerning whether any promotional materials had been received. For the people who had received promotional materials, about 34 percent of the rural respondents obtained these from their doctor or local health department, compared to 12 percent of the urban respondents (p = .003).

Accidents, Violations and Other Risk Taking Questions

Overall, a higher percentage of urban respondents had been involved in one or more accidents during the past ten years (p = .030), but the pattern by the number of actual accidents was mixed. There were no differences in the number of personal injury accidents, as well as in the number of moving violation tickets. In the latter category, 61 percent of the urban respondents reported no moving violations within the past ten years as opposed to 67 percent of the rural respondents.

Questions 58-60 dealt with drinking and driving and driving speed on the highway. The alcohol-related questions produced no differences, but the urban drivers were more likely to drive above the speed limit (p = .000). Overall, about 50 percent of the urban drivers said they exceeded the speed limit compared to 37 percent of the rural drivers.

Summary of Urban-Rural Differences

The urban-rural variable used in this analysis again shows the complexity involved in the decision to wear a safety belt. While around 57 percent of the "always" belt users live in urban N.C. counties, about the same percentage applies to the "rarely" and "never" wearers (56 and 55 percent, respectively). Examining all the variables in this questionnaire by an urban-rural breakdown shows many places where no significant differences exist. Where there are significant differences, the pattern seems to suggest that urban respondents are more favorable toward seat belts and seat belt laws than their rural counterparts.

Introduction

The telephone survey described in this report was utilized primarily to assess current public understanding and acceptance of the North Carolina seat belt law. In addition, the survey was to uncover findings that could lead to the promotion of strategies that would either prevent further erosion of the belt use rate in the state or perhaps increase the belt use of part-time wearers. A secondary goal was to produce a general questionnaire that could be easily adapted by other states seeking knowledge about their seat belt law.

The North Carolina law is similar to many other state laws in that it applies to front seat occupants of passenger motor vehicles. A dissimilar feature of this law was the 15-month "grace" period during which only warning tickets could be given to non-complying motorists. January 1, 1987 marked the end of the "grace" period and the initiation of the \$25 citation for non-seatbelt use. Thus, the responses to this survey came about eight to nine months after the citation phase became effective.

Summary of Results

The telephone survey instrument contained about 60 items, and almost all are examined in Chapter 3. Because of the wealth of information, a summary of the major issues is provided in this section.

Knowledge of the North Carolina Seat Belt Law

Knowledge of the North Carolina seat belt law was quite good, in that about three-fourths of the respondents knew of the primary enforcement feature and that the fine amount was \$25. Of interest was the fact that a greater proportion of blacks and those with less education gave correct answers to the knowledge questions. Thus, lower socioeconomic status groups may have greater awareness of the provisions of the law.

Attitude About the Law

Overall there appears to be support for the seat belt law, with two-thirds (67%) of the respondents favoring the law, which matches a 1984 pre-law

statewide survey about belts and belt laws. Only 26 percent opposed the law, and another 7 percent were uncertain. Of all the respondents questioned, about 52 percent said they strongly favored the law, and 16 percent indicated they strongly opposed the law. When asked their main reason for favoring the law, almost 80 percent stated that safety belts save lives and reduce injuries. Another 10 percent stated that belts would protect them or their family, so that about 90 percent of the favorable responses concerned the efficacy of belts in accidents. For those opposing the law, about two-thirds mentioned the freedom of choice issue; another 13 percent stated that belts are not effective in an accident, and 12 percent based their opposition on the fact that belts are uncomfortable and inconvenient.

Effectiveness of the Law

Concerning whether the North Carolina law had been effective in reducing injuries and saving lives, 23 percent said that the law had been very effective and another 60 percent felt the law had been somewhat effective. Only 11 percent felt the law had been either not very effective or not at all effective.

Acceptance of Safety Belts

About 82 percent of the respondents stated that they now wear their belt "always" (52 percent) or "most of the time" (30 percent). As would be expected from the nature of the question, this total is higher than the 61 percent of front seat occupants observed wearing belts in the last 72-site, HSRC statewide survey carried out in October and November of 1987. Self reports of belt use during the "grace" period were much closer to the results obtained from the observational surveys.

About 14 percent of the part-time belt wearers stated that they were now wearing their belts less than when the \$25 fine became effective some nine months earlier. This actually matches well with the North Carolina observational surveys of front seat occupants, down from a high of 76 percent in January, 1987, to 61 percent in October-November, 1987. Comparable observed percentages for drivers were 78 percent and 63 percent. The single reasons most often stated for wearing belts less were:

Belt uncomfortable/inconvenient	32%
Not a habit	18%
Less enforcement	10%

The Social Context of Wearing Belts

When asked what percent of their friends wear belts, just over 50 percent stated that 75 percent or more of their friends "buckle up." About 56 percent could remember being asked or told to "buckle up" by a driver or another passenger, and nearly 80 percent stated that they had asked or told others to wear an available safety belt.

Opinions About Safety Belts

A five-point Likert scale ranging from strongly agree to strongly disagree was used to assess attitudes towards various seat belt issues. Shown below are the issues and the percent agreement (combined strongly agree and agree).

Issue	Agreement
Belts save lives and reduce injuries.	89%
Belts are uncomfortable or inconvenient to use.	56%
Belts are needed to offset increased injuries due to	
the higher 65 mph speed limit on Interstate highways.	72%
Belts are too loose to protect you in an accident.	20%
The safety belt law will reduce the cost to society	
of accidents and injuries.	72%
Belts are an infringement on rights.	60%

Examining these replies all together indicates that respondents correctly recognize that belt laws constitute somewhat of a diminution of freedom (60 percent agreement), and that belts may be uncomfortable or inconvenient (56 percent agreement). Nevertheless, the respondents recognize that belts save lives and reduce injuries (89 percent agreement), and that the belt law will benefit society (72 percent agreement). Thus, despite giving these somewhat varied responses, it appears that the average person has made a common sense integration of the disparate views and by a clear majority supports the law (67 percent).

Enforcement

Nearly 30 percent of the respondents either had received or knew of someone who had been given a ticket or a warning for not wearing a safety belt. Only 22 percent felt that the seat belt law was being less strictly enforced compared to when the \$25 fine became effective nine months earlier. This

compares to 34 percent who felt the law was being more strictly enforced and another 35 percent who felt the level of enforcement was about the same.

Opinions About Increasing Belt Use

The items receiving the most support as candidates for increasing belt use were:

Item	Agreement	
Make sure local police use their belts	76%	
Have police use the seat belt "salute"	76%	
Encourage employers to have strong on-the-job belt		
use policies	79%	
Have media publicize stories about people who were		
saved by using their belts	87%	

Summary of Results by Demographic and Frequency of Belt Use Variables

In an attempt to sort out the crosstabulations provided in Chapter 3, it was decided to develop some profiles of the various demographic and frequency of belt use variables. What follows is a listing of comments (Figures 4.1 -4.4) pertinent to any particular demographic or belt wearing group. The comments represent statistically significant differences (p < .05) when the distributions of responses were examined for homogeneity. In general, the comments were selected based on individual cell chi-square contributions. Thus, for example, within the age groups, more comments are listed for the 18-25 and 55+ year olds than for the 26-55 year olds. When examining the race variable, where only blacks and whites were compared, a comment for one group would more likely be the converse for the other group. For the education and belt wearing groups, an attempt was made to highlight most likely/least likely differences.

Looking at all of these profiles together leads to some general differences, as one would expect. The 18-25 year old age group appears more "anti-belt" than the other age groups, although not without some inconsistencies. While this younger group is most likely to feel that belts are an infringement on their rights and their friends are least likely to wear belts, they also are most likely to agree that belts save lives and reduce injuries. And not surprisingly, this 18-25 age group feels that a higher fine would

Figure 4.1. Summary of findings: Questionnaire items by sex and race.

	Sex		Race		
Questionnaire Item	Males	Females	Whites	Blacks	
Safety Belt Use		More "always" and less "rarely" wearers during "grace" period. More "always" and less "rarely" and "never" wearers during citation phase	More "always" and less "never" wearers during "grace" period.		
Belt Use by Friends		Friends more likely to wear belts.			
Perceived Belt Use in N.C.				Thought higher percentage of N.C. people buckling up.	
Asked / Been Asked to Buckle Up		More likely to have asked or told others to "buckle up."			
Opinion about Safety Belts		More likely to feel belts needed to offset the 65 mph speed limit on Interstates.	More likely to agree that belts save lives and reduce injuries.	More likely to feel that belts are not effective in crashes.	
Attitude about the N.C. Belt Law	More likely to agree that the law is an infringement on their rights. More likely to feel that the law has not been effective.	More likely to favor the law. More likely to favor keeping the law. More likely to feel that the law has been effective. More likely to agree that belt laws will reduce the costs to society.	More likely to agree that the law is an infringement on their rights.		
Media Coverage Awareness	More likely to have heard in the media about attempts to repeal the N.C. law.	More likely to have heard stories in the media about belts saving lives, etc			
Enforcement Issues		Feel law more strongly enforced now.	Less awareness of primary enforce- ment. Less awareness of correct fine amount.		
Opinions about Increasing Belt Use		Agree that issuing more tickets, increasing the amount of fine, police using their belts, and more publicity about people saved by wearing their belts would all increase belt use.		Agree that increasing the \$25 fine would increase belt use.	
Opinion on Employer Belt Use Policy	More disagreement whether on-the-job policies would increase belt use.	More uncertainty about on-the-job policies increasing belt use.		More uncertainty about on-the-job policies increasing belt use.	
Accident / Violation Experience	More likely to have been involved in an accident in the past ten years. More likely to have had a moving violation in the past ten years.		More likely to have had a moving violation in the past ten years.		
Driving Behavior	More likely to have driven after drinking or ridden with another driver after drinking. More likely to drive above speed limit.		More likely to have driven after drinking.		

Figure 4.2. Summary of findings: Questionnaire items by age.

Age

Questionnaire Item	18 - 25	26 - 55	55+
Safety Belt Use	Less "always" and more "never" wearers during both "grace" and "citation" periods.		Less "never" wearers during "grace" period.
Belt Use by Friends	Friends least likely to wear belts.		Friends most likely to wear belts.
Asked / Been Asked to "Buckle Up"	Most likely to have been asked or told to "buckle up."	Most likely to have asked or told others to " buckle up"	
Opinion about Safety Belts	Most likely to agree that belts save lives and reduce injuries.		Most likely to feel that belts are uncomfortable / inconvenient.
	Least likely to agree that belts don't seem		Most likely to feel belts aren't effective in crashes
	to work.		Most likely to feel belts needed to offset the 65 mph speed limit on Interstate highways (and also most uncertainty on this issue).
			Most likely to agree that belts don't seem to work.
Attitude about the N.C. Belt Law	Least likely to favor keeping the law.		Most likely to favor the law.
	Most likely to agree that the law is an		Most likely to favor keeping law.
	infringement on their rights.		Least likely to agree that the law is an infringement on their rights.
			Most uncertainty about effectiveness of the law.
			Most uncertainty about whether belt laws will reduce cost to society.
Media Coverage Awareness	Most likely to have heard stories in the media about the belt law.		Most likely to have heard stories in the media about belts saving lives and reducing injuries.
Distribution of Belt Education/ Promotion Materials	Most likely to have received promotional or informational materials.	Agree that more belt effectiveness information would increase belt use.	Most uncertainty about whether additional belt effectiveness information would increase use.
Enforcement Issues	Most likely to feel law much less strongly enforced now.		Most likely to feel law much more strongly enforced now (but also more uncertainty).
Opinions about Increasing Belt Use	Agree that increasing the \$25 fine would increase belt use.		Agree that issuing more tickets and police using their belts would increase belt use (but also most uncertainty).
			Most uncertainty about more belt effectiveness information and police using the seat belt salute to increase belt use.
Opinion on Employer Belt Use Policy		Agree that on-the-job policies would increase belt use.	Most uncertainty about on-the-job policies increasing belt use.
Accident / Violation Experience	Most likely to have been involved in an accident in the past ten years.		Least likely to have been involved in an accident in the past ten years.
	Most likely to have had a moving violation in the past ten years.		Least likely to have had a moving violation in the past ten years
Driving Behavior	Most likely to have driven after drinking or ridden with another driver after drinking. Most likely to drive above the speed limit.		Least likely to have driven after drinking or ridden with another driver after drinking. Least likely to drive above the speed limit.

Education Level

Questionnaire Item	Less Than High School	High School Graduate	College Graduate or Greater
Safety Belt Use			More "always" and less "never" wearers during both "grace" and "citation" periods.
Belt Use by Friends		Friends least likely to wear belts.	Friends most likely to wear belts.
Perceived Belt Use in N.C.	Thought lower percentage of NC people "buckling up."	Thought lower percentage of NC people "buckling up."	
Asked / Been Asked to "Buckle Up"	Least likely to have asked or told others to "buckle up."		Most likely to have asked or told others to "buckle up."
Opinion about Safety Belts	Least likely to feel that belts save lives and reduce injuries. Most likely to feel that belts are uncomfortable / inconvenient. Most uncertainty about whether belts needed to offset the 65 mph speed limit on Interstates. Most likely to feel that belts aren't effective in accidents.		Most likely to feel that belts save lives and reduce injuries. Least likely to feel that belts are uncomfortable / inconvenient. Most likely to feel that belts are needed to offset the 65 mph speed limit on Interstates. Least likely to agree that belts aren't effective.
Attitude about the N.C. Belt Law	Least likely to agree that belt laws will reduce costs to society (and most uncertainty on this issue). Most likely to agree that the law is an infringement on their rights.	Least likely to favor the law. Least likely to favor keeping the law.	Most likely to favor the law. Most likely to favor keeping the law. Least likely to agree that the law is an infringe- ment on their rights. Most likely to feel that belt laws will reduce costs to society.
Media Coverage Awareness			Most likely to have heard stories in the media about the belt law. Most likely to have received promotional or informational materials.
Enforcement Issues	Most awareness of primary enforcement. Most awareness of correct fine amount.	Least awareness of primary enforcement. Most likely to feel law more strongly enforced now.	Least awareness of correct fine amount. Least likely to have received or to know anyone who has received a ticket. Most uncertainty about how strongly law enforced now.
Opinions about Increasing Belt Use	Most uncertainty about police using the seat belt salute to increase belt use.		
Opinion on Employer Belt Use Policy	Most uncertainty about on-the-job policies increasing belt use.		
Accident / Violation Experience	Least likely to have had a moving violation in the past ten years.		Most likely to have had a moving violation in the past ten years.
Driving Behavior	Least likely to have ridden with another driver after drinking.		Most likely to have ridden with another driver after drinking.
	Least likely to drive above the speed limit.		Most likely to drive above the speed limit.

Figure 4.4. Summary of findings: Questionnaire items by belt use.

Questionnaire Item	Always	Most of the Time	Sometimes	Rarely	Never
Safety Belt Use	More "always" wearers than expected during "grace" period.	Least likely to be wearing belts less now than when fine started.		Most likely to be wearing belts less now than when fine started.	Less "never" wearers than expected during "grace" period.
Belt Use by Friends	Friends most likely to wear belts.				Friends least likely to weat belts.
Perceived Belt Use in N.C.	Thought higher percentage of NC people "buckling up."	Thought higher percentage of NC people "buckling up."			
Asked / Been Asked to "Buckle Up"	Most likely to have asked or told others to "buckle up."		Most likely to have been asked or told to "buckle up."		Least likely to have asked or told others to "buckle up." Least likely to have been asked or told to "buckle up."
Opinion about Safety Belts	Most likely to feel that belts save lives and reduce injuries. Least likely to agree that belts aren't effective in crashes. Most likely to agree that belts will reduce costs to society.				Least likely to feel that belts save lives and reduce injuries. Most likely to agree that belts aren't effective in crashes. Least likely to agree that belts will reduce costs to society.
Attitude about the N.C. Belt Law	Most likely to favor the law. Most likely to favor keeping the law. Least likely to agree that the law is an infringement on rights.				Least likely to favor the law. Least likely to favor keeping the law. Most likely to agree that the law is an infringement on rights.
Media Coverage Awareness	Most likely to have heard stories in the media about belts.				Most likely to have heard stories in the media about belt law repeal attempts.
Enforcement Issues	Most likely to feel law much more strongly enforced now.			Most knowledge of primary enforcement provision. Most likely to feel law much less strongly enforced now.	Least knowledge of primary enforcement provision.
Opinions about Increasing Belt Use	Most agreement that issuing more tickets, providing more belt effectiveness information, police using their belts, and more publicity about people saved by wearing their belts would increase belt use.				
Opinion on Employer Belt Use Policy	Most agreement that on-the-job	policies would increase belt use.			
Accident / Violation Experience	Least likely to have been involve- in an accident in past ten years. Least likely to have had a mov- ing violation in past ten years.		Most likely to have a moving violation in past ten years.		Most likely to have been involved in an accident in the past ten years.
Driving Behavior	Least likely to have driven after drinking or ridden with another driver after drinking. Least likely to drive above the speed limit.		Most likely to have ridden with another driver after drinking. Most likely to drive above the speed limit.	Most likely to have driven after drinking.	

Frequency of Belt Use

increase belt use. In contrast, the 55+ age group appears more "pro-belt," in that they are most likely to favor the law, have the least concern about infringement on rights, and have friends that wear belts. Again, however, there are inconsistencies, pointing out the complexity of the seat belt issue. For example, the oldest age group is most concerned about the comfort and convenience of belts, most likely to feel that belts are not effective in crashes, and have the most uncertainty about the effectiveness of the seat belt law. In fact, this group had the most uncertainty on a variety of issues concerned with the law.

In regard to gender, both males and females are supportive of the law. Where differences exist, males are more likely to feel the belt law has not been effective, more likely to feel the law is an infringement on rights, and more likely to have heard about repeal attempts in the media. Females are more supportive of the law, more likely to have friends that wear belts, and more in agreement with suggested ways to increase belt use.

The differences by race are few in number. Whites are more likely to agree that belts save lives and reduce injuries, but appear to have less knowledge about economic provisions of the law, such as primary enforcement and the correct fine amount.

The differences in educational groups can perhaps be portrayed by contrasting the groups with less than a high school education and those with a college degree or greater. The less educated have the most knowledge of the economic consequences of the law, are most likely to feel that belts are not effective in accidents, are most concerned about the law being an infringement on rights, and are apt to feel that the law is now more strictly enforced. The better educated are most likely to favor the law, have friends that wear belts, and have heard stories in the media about belts.

Finally, the different belt wearing groups behave largely as expected. The "always" wearers are "pro-belt" and "rarely" and "never" wearers are not. The "most of the time" group appears to be more like the "always" group. The "rarely" wearers tend to wear belts less now than when the \$25 fine became effective and the "sometimes" wearers are most likely to have been asked or told to "buckle up" by others.

The obvious result of all these comparisons is that wearing a seat belt, even with a mandatory law in place, is still a complex decision for many people. One can examine these results and perhaps identify promising areas for

further research or belt promotion, but it is unclear as to which areas would be the most fruitful. However, it is clear that the 55+ age group has a good deal of uncertainty in regard to many seat belt issues.

Program Implications

Upon examining the responses to the survey, one must conclude that this group of North Carolinians is supportive of the state's mandatory belt law. Nonetheless, there are some issues that stand out as deserving further attention.

Infringement on Rights and the Comfort of Belts

Results from the survey indicate that a number of safety belt issues continue to be of concern to many respondents, to both those who regularly wear belts as well as those who rarely or never wear belts. Nearly 60 percent of the respondents agreed that requiring safety belt use is an infringement on rights and approximately 57 percent indicated that safety belts are uncomfortable and inconvenient. These concerns were shown across groups, but the 55+ age group was most likely to feel that belts were uncomfortable/ inconvenient and "never" belt wearers were the most likely to agree that the seat belt law was an infringement on rights.

Perhaps a clue to addressing this problem is given by the responses reported herein. Though respondents describe the infringement the belt laws constitute and the sometimes inconvenience of use they experience, they likewise respond to the societal benefits of belts and belt laws. They support the laws by a clear majority.

In public support messages perhaps an approach is to show the similarity of belt laws to many other laws in which the public considers the tradeoff between regulation and benefit and concludes that the regulation is warranted. In this regard belt laws are not fundamentally different from laws about stop signs, drunk driving, or jaywalking, let alone the whole body of law regarding air and water quality, etc.

The uncomfortable/inconvenient belt issue could be addressed through campaigns to educate the public on the proper wearing of belts to produce greater comfort. The success of such an effort would no doubt also increase the effectiveness of belts. Another approach is to encourage individuals to try on belts when purchasing cars and to view belts as an important item for consideration. The comfort issue is difficult because for many people no satisfactory belt system exists, particularly for the elderly. The solution may reside with the car makers to provide more versatile and easier to use systems which accommodate individuals' wide range of shapes, sizes, and flexibility.

Effectiveness of Belts

Certain groups (55 and older, "never" wearers, less than high school education) are less convinced about the effectiveness of belts and the benefits of belt use to individuals and society. Education and media attention about the effectiveness of belts and how they work may be useful. There seems to be the impression by some that because of the slack allowed in the belt, belts do not work. In addition, more information on how belts save lives and reduce injury backed by case histories and statistics should be provided. It appears that a better picture of the costs (both financial and social) of injury and death to society and to individuals needs to be shown to these groups. How everyone in society in some sense pays for the costs and losses --higher medical costs, cost of care for the disabled, loss of talented and able workers, suffering and loss of families and friends, lost time on the job, etc. -- could be illustrated.

Friends Least Likely to Wear Belts

The influence that peers have on one another and the concern that individuals generally have for their friends may be a focus for media and education activities to encourage 18-25 year olds and high school graduates, which are less frequent belt wearers, as well as "never" wearers, to buckle up. An approach such as the one used to discourage drinking and driving which advises that "Friends don't let friends drive drunk" is an example of this kind of emphasis.

Enforcement

Since "never" wearers, high school graduates, and whites were the least knowledgeable about primary enforcement, it is recommended that information about enforcement be disseminated through education and media activities.

To keep belt use rates high, it will be important for the public to perceive that enforcement is vigorous.

Uncertainty about Effectiveness of the Law

More publicity about the effectiveness of the safety belt law is recommended. Individuals 55 and older and males as a group were more uncertain about the effectiveness of the law. More information about the benefits of the law may influence some to buckle up.

Least Likely to Favor Keeping the Safety Belt Law

High school graduates were the least likely to favor keeping the safety belt law. It may be important to address issues already mentioned earlier for this group, particularly the lack of knowledge about the law and uncertainty about the effectiveness of the law. More information about these two areas through educational efforts and the media may influence high school graduates (and others opposed to the law) towards a more favorable position. In fact, addressing the infringement of rights issue, the belt comfort issue, the general question about the effectiveness of belts, injury reduction, and costs to individuals and society as suggested above could be appropriately targeted for this group as well.

Ways to Increase Belt Use

When respondents were asked their opinion about ways to increase seat belt use, the suggestion that clearly had the most appeal was to have the media publicize stories about people who were saved by using their belts. This is a task that can be readily accomplished. Other suggestions that had appeal were making sure local police used their safety belts and having police use the safety belt salute as a reminder to unbuckled motorists. Clearly these are strategies that need encouragement at the local level. Finally, the suggestion to encourage employers to have strong on-the-job belt use policies was seen as a way to increase seat belt use. In line with this, the North Carolina Governor's Highway Safety Program has recently considered developing a set of safety belt workshops for corporate sector representatives. These workshops should be implemented and evaluated.

Conclusions

After all these data are assessed, how does the typical North Carolinian feel about safety belts and belt laws? Overall, the typical respondent has concerns about belt laws infringing on rights and the comfort and convenience of belts. On the other hand, belts are believed to be effective in accidents and the belt law will reduce societal costs. More publicity about people who were saved by using their belts is seen as an important way to increase usage. All together, these factors and others lead to support for the law by two out of every three persons.
REFERENCES

Campbell, B. J., Stewart, J. R. & Campbell, F. A. (1987). <u>1985-1986 Experience</u> with Belt Laws in the United States. Chapel Hill: University of North Carolina. Highway Safety Research Center.

Dillman, D. A. (1978). <u>Mail and Telephone Surveys: The Total Design Method</u>. New York: John Wiley and Sons.

<u>Highway and Vehicle Safety Report</u>. (1987). Volume 14, <u>6</u>, Branford, Ct: Stamler Publishing Company.

Office of State Management and Budget. (1984). <u>North Carolina Citizen Survey</u>. <u>Technical Report: Fall 1984</u>. Raleigh, N.C.: Office of State Management and Budget.

Reinfurt, D. W., Campbell, B. J., Hunter, W. W. & Stutts, J. C. (1987). An Evaluation of the North Carolina Mandatory Occupant Restraint Law. <u>Thirty</u> <u>First Proceedings of the American Association for Automotive Medicine</u>. Des Plaines, IL: American Association for Automotive Medicine.

Reinfurt, D. W., Campbell, B. J., Stewart, J. R. & Stutts, J. C. (1987). <u>North</u> <u>Carolina's Occupant Restraint Law: An Evaluation</u>. Chapel Hill: University of North Carolina. Highway Safety Research Center.

U.S. Bureau of Census. (1983). <u>Census of Population 1980</u>. <u>Volume 1:</u> <u>Characteristics of the Population</u>. Washington, D.C.: U.S. Bureau of Census.

APPENDIX A

Understanding and Acceptance of Safety Belt Use Law Telephone Questionnaire

Understanding and Acceptance of Safety Belt Use Law Telephone Questionnaire University of North Carolina Highway Safety Research Center

First, I would like to ask you some questions about your safety belt use.

 Since January 1987, North Carolina drivers and front seat passengers may be fined for not wearing safety belts. Since that time how often have you worn your safety belt? Would you say-

```
1-Always (You mean every time you get in the car?)
2-Most of the time
3-Sometimes
4-Rarely
5-Never
6-Don't know
7-No answer
```

(IF NEVER, SKIP TO Q 5)

 Between October 1985 and January 1987, there was no fine for not wearing a belt. During this "grace" period, how often did you wear your safety belt? Would you say-

```
1-Always (You mean every time you get in the car?)
2-Most of the time
3-Sometimes
4-Rarely
5-Never
6-Don't know
7-No answer
```

3. (IF Q1 = 1, GO TO Q5, IF Q2 = 5, GO TO Q5) Are you wearing your safety belt less often now than when the fine first went into effect?

1-YES 2-NO 3-DON'T KNOW 4-NO ANSWER

4. (IF YES) Please tell me the <u>main reason</u> you are wearing your safety belt less. (CATEGORIZE RESPONSE)

1-POLICE AREN'T ENFORCING THE SEAT BELT LAW AS MUCH. 2-JUST HAVEN'T BEEN ABLE TO FORM THE <u>HABIT</u> 3-TRIED IT, BUT THE BELT IS <u>UNCOMFORTABLE-INCONVENIENT</u> 4-HEARD ABOUT SOMEONE SERIOUSLY <u>INJURED OR KILLED</u> WHILE WEARING A BELT. 5 THINK BELTS ARE NOT EFFECTIVE 6-ONLY DRIVE <u>CLOSE TO HOME</u> 7-OTHER Next, I'd like to ask you some questions about safety belt laws.

5. As you know, the North Carolina safety belt law requires the driver and front seat passengers to use safety belts. Please tell me if you favor or oppose the safety belt law?

1-FAVOR 2-OPPOSE 3-UNCERTAIN 4-NO ANSWER

6. (IF FAVOR) Would you say you strongly favor this law?

1-YES 2-NO 3-UNCERTAIN 4-NO ANSWER

7. (IF OPPOSE) Would you say you strongly oppose this law?

1-YES 2-NO 3-UNCERTAIN 4-NO ANSWER

8. (IF FAVOR) Please tell me your <u>main reason</u> for favoring the North Carolina Safety Belt Law. (CATEGORIZE RESPONSE GIVEN)

1-SAFETY BELTS SAVE LIVES/REDUCE INJURIES (IN GENERAL) 2-THE LAW WILL GET MORE PEOPLE TO WEAR BELTS 3-WEARING BELTS WILL PROTECT ME/MY FAMILY 4-HELP PEOPLE BECOME MORE SAFETY CONSCIOUS 5- REDUCE COSTS (TO SOCIETY) OF ACCIDENTS AND INJURIES 6-IT IS THE LAW 7-OTHER 8-NO ANSWER

9. (IF OPPOSE) Please tell me your <u>main reason</u> for opposing the North Carolina Safety Belt Law. (CATEGORIZE RESPONSE GIVEN)

1-ADULTS SHOULD HAVE A CHOICE/INFRINGEMENT ON RIGHTS
2-MY SAFETY BELT DOESN'T WORK/DOESN'T LOCK UP
3-SAFETY BELTS ARE INCOMFORTABLE/INCONVENIENT TO USE
4-SAFETY BELTS ARE UNCOMFORTABLE/INCONVENIENT TO USE
5-LAW IS NOT BEING ENFORCED
6-LAW IS IMPOSSIBLE TO ENFORCE
7-THERE SHOULDN'T BE A FINE/FINE IS TOO HIGH
8-OTHER
9-NO ANSWER

Now I would like your opinion on some statements made about safety belts. For each one, please tell me whether you strongly agree, agree, disagree, or strongly disagree.

10. Safety belts save lives and reduce injuries.

1-STRONGLY AGREE 2-AGREE 3-DISAGREE 4-STRONGLY DISAGREE 5-UNCERTAIN 6-NO RESPONSE

11. Safety belts are inconvenient or uncomfortable to use.

1-STRONGLY AGREE 2-AGREE 3-DISAGREE 4-STRONGLY DISAGREE 5-UNCERTAIN 6-NO RESPONSE

12. Safety belts are needed to offset the likelihood of increased injuries due to the higher 65 mile per hour speed limit on some interstate highways.

1-STRONGLY AGREE 2-AGREE 3-DISAGREE 4-STRONGLY DISAGREE 5-UNCERTAIN 6-NO RESPONSE

13. Safety belts don't seem to work--that is they seem too loose to protect you in an accident. Do you strongly agree, agree, feel uncertain, disagree, or strongly disagree with this statement?

1-STRONGLY AGREE 2-AGREE 3-DISAGREE 4-STRONGLY DISAGREE 5-UNCERTAIN 6-NO RESPONSE

14. The safety belt law will reduce the costs to society of accidents and injuries.

1-STRONGLY AGREE 2-AGREE 3-DISAGREE 4-STRONGLY DISAGREE 5-UNCERTAIN 6-NO RESPONSE 15. Finally, safety belt laws are an infringement on rights and adults should have a choice.

1-STRONGLY AGREE 2-AGREE 3-DISAGREE 4-STRONGLY DISAGREE 5-UNCERTAIN 6-NO RESPONSE

Next I want to ask you about information on safety belts that you might have seen or heard about in the media, such as on television and radio or in the newspapers.

16. In the past 6 months, have you heard or seen anything in the media about the North Carolina Safety Belt Law?

1-YES 2-NO 3-DON'T NO 4-NO ANSWER

17. In the past 6 months, have you seen or heard anything about safety belts having saved someone's life or reduced injuries in an accident?

1-YES 2-NO 3-DON'T KNOW 4-NO ANSWER

18. Finally, have you seen or heard anything about attempts to repeal the North Carolina Safety Belt Law?

1-YES 2-NO 3-DON'T KNOW 4-NO ANSWER

19. Okay. Now I'd like to know if you have received brochures or other promotional materials about safety belts at any time during the past year.

1-YES 2-NO 3-DON'T KNOW 4-NO ANSWER (IF NO, DON'T KNOW, NO ANSWER SKIP TO Q25) Please tell me if you have received any materials from the following by answering yes or no for each. From your--20. Doctor or health department? (Have you received any materials?) 1-YES 2 - NO3-DON'T KNOW 4-NO ANSWER 21. Your employer? (Have you received any materials?) 1-YES 2 - NO3-DON'T KNOW 4-NO ANSWER 22. A community organization? (Have you received any materials?) 1-YES 2 - NO3-DON'T KNOW 4-NO ANSWER 23. A law enforcement officer? (Have you received any materials?) 1-YES 2-NO 3-DON'T KNOW 4-NO ANSWER 24. A school? (Have you received any materials?) 1-YES 2-NO 3-DON'T KNOW 4-NO ANSWER 25. On a different subject, what percent of drivers and front seat passengers in North Carolina would you say currently wear safety belts? % (IF RESPONDENT INDICATES "DON'T KNOW," ASK AGAIN: JUST GIVE ME YOUR BEST GUESS. IF NECESSARY PROMPT WITH: Would you say 25%, 50%, 75% IF AGAIN INDICATED "DON'T KNOW", ENTER 101). 26. During the past year, can you remember having been asked or told to buckle up by a driver or passenger? 1-YES 2 - NO

3-DON'T KNOW 4-NO ANSWER 27. Have you told or asked drivers or passengers to buckle up?

1-YES 2-NO 3-DON'T KNOW 4-NO ANSWER

28. What percent of your friends wear safety belts?

____%

(IF RESPONDENT INDICATES "DON'T KNOW," ASK AGAIN: JUST GIVE ME YOUR BEST GUESS. IF NECESSARY PROMPT WITH: would you say 25%, 50%, 75%). IF AGAIN INDICATED "DON'T KNOW", ENTER 101).

- 29. Does your employer have a policy that requires you to wear a safety belt for on-the-job vehicle use?
 - 1-YES 2-NO 3-DON'T KNOW 4-NOT APPLICABLE (RESPONDENT NOT EMPLOYED) 5-NO ANSWER

Okay. Now, the next few questions are about enforcement of the Safety Belt Law.

30. Can police stop you just for not wearing a safety belt?

- 1-YES 2-NO 3-DON'T KNOW 4-NO ANSWER
- 31. Have you, or anyone you know, ever received a ticket or warning for not wearing a safety belt.
 - 1-YES 2-NO 3-DON'T KNOW 4-NO ANSWER

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32. What is the fine for not wearing a safety belt in North Carolina?

(IF RESPONDENT INDICATES "DON'T KNOW," ASK AGAIN: Just give me your me your best guess. IF AGAIN INDICATES DON'T KNOW, ENTER 101)

33. Overall, how strictly do you think the law is being enforced now compared to January 1987, when the fine came into effect--would you say:

```
1-Much more strictly
2-Somewhat more strictly
3-About the same
4-Somewhat less strictly
5-Much less strictly
6-Don't know
7-No answer
```

Next I would like to hear your opinion about how to increase safety belt use. Please answer with a yes, no, or maybe to whether you think these suggestions would work in increasing safety belt use.

34. Have police write more tickets for not wearing a belt.

```
1-YES
2-NO
3-MAYBE
4-DON'T KNOW
```

- 35. Increase the \$25 fine for not wearing belts. Would this increase safety belt use?
 - 1-YES 2-NO 3-MAYBE 4-DON'T KNOW
- 36. Provide more information about the effectiveness of safety belts.
 - 1-YES 2-NO 3-MAYBE 4-DON'T KNOW
- 37. Make sure local police use their belts. Would this increase safety belt use?
 - 1-YES 2-NO 3-MAYBE 4-DON'T KNOW
- 38. Have police tug on their shoulder strap as a reminder when they see an unbuckled motorist.

1-YES 2-NO 3-MAYBE 4-DON'T KNOW 39. Encourage employers to have strong belt use policies for on-the-job automobile use. Would this increase belt use?

1-YES 2-NO 3-MAYBE 4-DON'T KNOW

40. And finally, have media publicize stories about people who were saved by using their safety belts.

1-YES 2-NO 3-MAYBE 4-DON'T KNOW

41. And now I would like to know your opinion about the effectiveness of the North Carolina Safety Belt Law in helping to reduce injuries and save lives. Would you say the law has been very effective, somewhat effective, not very effective, or not at all effective?

1-Very effective 2-Somewhat effective 3-Not very effective 4-Not at all effective 5-DON'T KNOW 6-NO ANSWER

42. Okay. Are you a registered voter in North Carolina?

1-YES 2-NO 3-DON'T KNOW 4-NO ANSWER

(IF NO, DON'T KNOW, NO ANSWER, SKIP TO Q45)

43. Did you vote in the 1984 presidential election? (IF UNCERTAIN, SAY: When Reagan ran against Mondale?)

1-YES 2-NO 3-DON'T KNOW 4-NOT APPLICABLE 5-NO ANSWER

44. Did you vote in the last general election in 1986 when state and local officials were elected. (IF UNCERTAIN, SAY: When candidates were elected to the North Carolina House of Representatives).

1-YES 2-NO 3-DON'T KNOW 4-NOT ELIGIBLE TO VOTE 5-NO ANSWER 45. Do you favor or oppose keeping the North Carolina safety belt law?

1-FAVOR 2-OPPOSE 3-DON'T KNOW 4-NO ANSWER

Here are some questions to help us tabulate the results.

46. In what county do you now live?

COUNTY CODE:

ENTER NUMBER FROM COUNTY CODE SHEET AND PRESS RETURN IF RESPONDENT DOESN'T KNOW THE COUNTY NAME, ENTER 101

47. In what size vehicle do you usually drive or ride?

1-SMALL CAR 2-MID-SIZE CAR 3-LARGE CAR 4-PICK-UP OR OTHER TRUCK 5-VAN 6-DON'T KNOW

SEE EXAMPLE SHEET IF NECESSARY

48. Is it imported or domestic ?

1-IMPORTED 2-DOMESTIC 3-DON'T KNOW 4-NO ANSWER

49.-50. Approximately how many miles do you drive or ride in a car during an average year?

miles

(IF RESPONDENT INDICATES DON'T KNOW, ASK AGAIN: JUST GIVE ME YOUR BEST GUESS. IF AGAIN INDICATES DON'T KNOW, ENTER 101)

51. In which year were you born?

52. What is your race?

1-WHITE 2-BLACK 3-INDIAN 4-OTHER 5-NO ANSWER 53. What is the last grade in school or year in college that you finished?

1-1ST GRADE OR LESS
2-2ND GRADE
3-3RD GRADE
4-4TH GRADE
5-5TH GRADE
6-6TH GRADE
7-7TH GRADE
8-8TH GRADE
9-9TH GRADE

A-10TH GRADE B-11TH GRADE C-12TH GRADE D-1ST YEAR COLLEGE E-2ND YEAR COLLEGE F-3RD YEAR COLLEGE G-4TH YEAR COLLEGE H-5TH YEAR COLLEGE I-6TH YEAR COLLEGE J-7TH YEAR COLLEGE K-8TH YEAR COLLEGE

L-NO ANSWER

Now we'll finish with just a few questions about driving behavior. Please keep in mind that the information you give us is strictly confidential.

54. Within the past ten years, how many automobile accidents have you been involved in?

1-ONE 2-TWO 3-THREE OR MORE 4-NONE 5-DON'T KNOW 6-NO ANSWER

(IF NONE OR DON'T KNOW, SKIP TO Q57)

55. How many of these accidents resulted in personal injuries?

1-ONE 2-TWO 3-THREE OR MORE 4-DON'T KNOW 56. After being involved in an accident, did your seat belt use increase, decrease, or stay about the same?

1-INCREASE 2-DECREASE 3-STAY ABOUT THE SAME 4-DON'T KNOW

57. Within the past 10 years, how many times have you received a moving violation traffic ticket?

1-ONE 2-TWO 3-THREE 4-FOUR OR MORE 5-NONE 6-DON'T KNOW 7-NO ANSWER

58. In general, how often do you drive after drinking alcoholic beverages? Would you say frequently, occasionally, seldom, or never.

1-FREQUENTLY 2-OCCASIONALLY 3-SELDOM 4-NEVER 5-DON'T KNOW 6-NO ANSWER

59. How often do you ride with other drivers after they have been drinking alcoholic beverages?

1-FREQUENTLY 2-OCCASIONALLY 3-SELDOM 4-NEVER 5-DON'T KNOW 6-NO ANSWER

60. On the highway do you usually drive...

1-At the speed limit 2-5 to 10 miles per hour below 3-5 to 10 miles per hour above or 4-More than 10 miles per hour above the speed limit 5-NO ANSWER

That's all. Thank you very much for your cooperation.

61. (WITHOUT ASKING, ENTER GENDER OF RESPONDENT)

1-MALE 2-FEMALE

APPENDIX B

Sampling Method

APPENDIX B

SAMPLING METHOD Prepared by Pama A. Mitchell University of North Carolina School of Journalism

SAMPLING METHOD: Random digit dialing was used to give every residential telephone in North Carolina an approximately equal chance of being dialed. The number of working residential telephones for each three-digit prefix was estimated by KPC Research (Charlotte, N.C.) based on data provided by the North Carolina Public Utilities Commission and by each telephone company operating in the state. The sample was stratified according to the total adult population of each of North Carolina's 100 counties, so that the results are proportionately representative of the state's population.

Proportionate representation by county population was accomplished by determining the number of telephone households per prefix compared to the total number of telephone households within each county. The formula used for assigning quotas of completed interviews for each county was:

Pop/County		<u>HH/Prefix</u>
Pop/State	Х	HH/County

That is, the total adult population of a county divided by the total adult population of the state, times the number of telephone households (HH) per prefix divided by the number of telephone households in the county. These results were proportioned to the sample size of 1,000 completed interviews.

Quotas were thus assigned to each three-digit prefix. Strings of four random digits were generated by computer to complete the phone numbers. A sample phone number was replaced, and another substituted for the same exchange, when any of the following conditions was met: the number proved to be non-working; the interview was refused or terminated; the number was non-residential; there was no eligible respondent living at that number; there was no answer or a busy signal after four attempts were made at least 30 minutes apart.

SAMPLING ERROR: In 95 out of 100 such samples, the results should differ by no more than 4 percentage points from what would have been obtained if every telephone number in the state had been dialed.

APPENDIX C

Introductory Procedure

APPENDIX C

INTRODUCTORY PROCEDURE Prepared by Pama A. Mitchell University of North Carolina School of Journalism

* Hello. This is <u>(your name)</u> at the University of North Carolina at Chapel Hill. Is this (Area Code and number) ?

(IF NO, END INTERVIEW: Sorry, I have the wrong number.)

* Is this a residential telephone?

(IF NO, END INTERVIEW: I'm sorry, I have the wrong place.)

* I'm calling for the University of North Carolina at Chapel Hill. We're finding out how people feel about some safety issues, and your telephone number was drawn by a computer in a random sample of the entire state. I would like to interview someone in your household. In order to find out who, I need to know how many persons 18 years old or older live at this number.

* Okay. Now which of these _____ persons will be the next one to have a birthday?

* Fine. (That's/you are) the person I'd like to speak with.

(IF PERSON ON THE PHONE HAS THE NEXT BIRTHDAY, BEGIN INTERVIEW BY SAYING: * This will take about 10 minutes. Are you ready to begin? NOW ENTER RESPONDENT NUMBER INTO THE COMPUTER AND BEGIN READING FROM QUESTIONNAIRE.)

(IF PERSON WITH NEXT BIRTHDAY IS SOMEONE ELSE, SAY: * May I speak to (him/her) please? IF RESPONDENT IS NOT AVAILABLE, ASK: *When would be a good time to reach him/her? NOTE THE CALLBACK DATE AND TIME ON SAMPLE SHEET.)

(WHEN THE ELIGIBLE RESPONDENT, IF OTHER THAN PERSON WHO ANSWERED PHONE, IS ON THE LINE, SAY: *I am calling for the University of North Carolina at Chapel Hill. We are finding out how people feel about some safety issues. This should take about 10 minutes. Shall we begin?

(ENTER RESPONDENT NUMBER INTO THE COMPUTER AND BEGIN READING FROM THE QUESTIONNAIRE.)

INTRODUCTORY PROCEDURE for "Refusals" callback

Hello, this is ______ from the University of North Carolina at Chapel Hill. We contacted you recently about a survey we're conducting, and I'm calling again to see if someone in your household can take a few minutes now to answer some questions.

[PAUSE...IF THEY SEEM COOPERATIVE, SKIP TO "NEXT BIRTHDAY"...OTHERWISE, READ NEXT PARAGRAPH:]

This is not a sales call, but an important study of what North Carolinians think about some highway safety issues. Your participation would be greatly appreciated, and your answers will remain strictly confidential. ***

["NEXT BIRTHDAY" METHOD OF RESPONDENT SELECTION:]

I would like to interview someone in your household. In order to find out who, I first need to know how many persons 18 years old or older live in your household?

Fine. Now which of these _____ persons will be the next one to have a birthday? (That's/you're) the one I need to speak with.

[IF ELIGIBLE RESPONDENT NOT HOME, MAKE APPOINTMENT FOR CALLBACK WITHIN POLLING TIME. IF NOT POSSIBLE, THEN ASK TO INTERVIEW YOUNGEST MALE IN HOUSEHOLD. (See supervisor for procedure if none of these are possible.)]

WHEN ELIGIBLE RESPONDENT IS ON PHONE, ENTER RESPONDENT ID NUMBER INTO THE COMPUTER AND BEGIN.

*** IF RESPONDENT STILL NOT COOPERATIVE, USE THE FOLLOWING TECHNIQUES AS NECESSARY:

IF RESPONDENT ASKS "WHY ME"/"HOW DID YOU GET MY PHONE NUMBER?" ETC., THEN SAY . . .

Your telephone number was selected by a computer at random and we do not know your name and address. But a certain quota of households was selected in each part of the state. In order for the results of this survey to be valid, we need all areas to be represented. So your opinions are very important.

IF RESPONDENT ASKS "WHAT IS THIS ABOUT?"/"WHO ARE YOU?" ETC., THEN SAY . . .

This survey is sponsored by the UNC Highway Safety Research Center with funding from the North Carolina Governor's Highway Safety Program. We are trying to learn more about safety belt use by North Carolinians like you, and to get a better understanding of your opinions about this important issue.

APPENDIX D

Answers to Respondent Questions about the Study and Refusals

WHAT THE RESPONDENT MIGHT LIKE TO KNOW¹ About this study

ABOUT THE SURVEY

WHO IS SPONSORING THE SURVEY?

The UNC Highway Safety Research Center with funding from the North Carolina Governor's Highway Safety Program.

WHAT IS THE PURPOSE OF THIS SURVEY?

We want to learn more about North Carolinians' safety belt use and other related issues. In other words, what people like and don't like about safety belts, why some people wear safety belts and others do not, and other opinions about safety belts.

WHO IS RESPONSIBLE FOR THE SURVEY? MAY I TALK TO HIM/HER?

The project director is Pama Mitchell of the School of Journalism. I'll get her for you/or she has stepped out for a few minutes, can I have her call you? If they ask, she can be reached during business hours at (919-962-1204).

ABOUT THE RESPONDENTS ROLE IN THE SURVEY

HOW DID YOU GET MY TELEPHONE NUMBER?

Everyone's number was drawn by a computer that generates random numbers using telephone exhanges in use throughout the state. The method we use means that every telephone number has an equal chance of being drawn, and it is strictly by chance that yours is one of them.

HOW CAN I BE SURE THIS IS AUTHENTIC?

I would be glad to give you my telephone number here in Chapel Hill and you may call me back collect.

(If that isn't acceptable) I can give you my supervisor's number and you can call her collect. That number is 919-962-1204.

WHY DON'T YOU INTERVIEW MY (HUSBAND, DAUGHTER, ETC.)/WHY DO YOU WANT TO KNOW WHOSE BIRTHDAY IS NEXT?

We can't do that because it's one of the things that keeps our surveys from being representative of the entire state. If we didn't follow this selection procedure all of the time we would probably end up with too many men, or on the other hand too many women, of certain ages.

¹Adapted from Dillman (1978), <u>Mail and Telephone Surveys</u>: <u>The Total</u> Design Method.

POSSIBLE ANSWERS TO REASONS FOR REFUSALS

REASONS FOR REFUSING	AND POSSIBLE ANSWERS
TOO BUSY	This should only take a very short time. Sorry to have caught you at a bad time, I would be happy to call back. When would be a good time for me to call in the next day or two?
BAD HEALTH	I'm sorry to hear that. I would be happy to call back in a day or two. Would that be okay?
	(If lengthy or serious illness, excuse yourself).
TOO OLD	Older people's opinions are just as important as anyone else's. In order for the results to be representative for all residents of the state, we have to be sure that older people have as much chance to give their opinion as anyone else does. We really do want your opinion.
FEEL INADEQUATE: DON'T KNOW ENOUGH TO ANSWER	The questions are not at all difficult. Some of the people we have already interviewed had the same concern you have, but once we got started they didn't have any difficulty answering the questions. Maybe I could read just a few questions to you and you can see what they are like.
NOT INTERESTED	It's awfully important that we get the opinions of everyone in the sample, other- wise the results won't be very useful. So, I'd really like to talk with you.
NO ONE ELSE'S BUSINESS	I can certainly understand, that's why all of our interviews are confidential. We do not have you name and address, we will obtain only your responses to the questions. It is very important that we get the opinions of everyone in the sample, otherwise the results won't be as useful.
OBJECTS TO SURVEYS	We think this particular survey is very important because the questions are ones that people in government want to know answers to, so we would really like to have your opinion too. We do appreciate very much your taking the time to help us.

IS THIS CONFIDENTIAL?

Yes, most definitely! We have only your telephone number, we do not have your name or address so none of your responses can be linked with your name.

CAN I GET A COPY OF THE RESULTS?

Yes, we would be glad to send it to you, if you will give me your current address or if you prefer send us a postcard requesting the results. Our address is Pama Mitchell, School of Journalism, Howell Hall 021A, University of North, Chapel Hill, NC 27514.

QUESTIONS ARISING FROM THIS PARTICULAR SURVEY

WHY DO YOU WANT TO KNOW WHETHER OR NOT I HAVE HAD ACCIDENTS OR VIOLATIONS?

Prior accidents (violations) seem to be related to peoples' attitudes towards safety belts in general. Sometimes these events are important in shaping attitudes and this is the primary focus of our questions.

WILL YOU BE LOOKING AT MY DRIVING RECORD?

No. This is not the intent of the survey and we do not have your name which would be necessary to link to the record.

APPENDIX E

Car Size and Make Reference List

	Small (Compact Sub-compact & Minicompact)	<u>Mid-Size</u>	Large
Buick	Skyhawk Somerset Skylark	Century Regal	LeSabre/Electra Wagon
Cadillac		Eldorado Seville	Brougham Fleetwood Deville Limousine
Chevrolet	Camaro Cavalier Chevette Corsica Nova Spectrum	Celebrity Monte Carlo	Caprice
Chrysler	Conquest Laser	Lebaron New Yorker Newport Fifth Avenue	
Dodge	Charger Colt Daytona Omni Shadow	Aries Diplomat Lancer 600	
Ford	Escort Mustang Tempo Thunderbird	Taurus	LTD Crown Victoria
Lincoln- Mercury	Cougar Lynx Topaz	Continental Mark VII Sable	Grand Marquis Town Car
Oldsmobile	Calais Firenza	Cutlass Ciera Cutlass Supreme	
Plymouth	Colt Turismo Horizon Sundance	Caravelle Gran Fury Reliant	
Pontiac	Fiero Firebird TransAm Sunbird Grand Am	Grand Prix 6000	Safari Wagon

IMPORTED

	<u>Small</u>	<u>Mid-Size</u>	Large
Audi		A11	
BMV	5-Series 7-Series		
Honda	A11		
Mercedes	190 300 E 560 SEC	420 SEL 560 SEL	
Nissan	A11		
Saab	900		9000
Subaru	A11		
Toyota	A11		
Volkswagen	A11		
Volvo	240DL 240GL	740 760	

DOMESTIC

Chevrolet

Chrysler

Skyhawk

Camaro Cavalier

Corvette

Corsica Nova

Conquest

Laser

Somerset Skylark

Buick

FOREIGN

BMW

5-series 7-series

Honda A11

<u>Nissan</u> All

<u>Toyota</u> All

Volkswagen All

<u>Volvo</u> 240 DL 240 GL

Dodge

Charger Colt Daytona Omni Shadow

Ford

Escort Mustang Tempo Thuderbird

Lincoln-Mercury Cougar Lynx Topaz

<u>Oldsmobile</u> Calais

Firenza

Plymouth

Colt Turismo Horizon Sundance

Pontiac

Fiero Firebird Trans Am Sunbird Grand Am

DOMESTIC

Buick

Century Regal

<u>Cadillac</u> Eldorado

Seville

Chevrolet

Celebrity Monte Carlo

Chrysler

Lebaron New Yorker Newport Fifth Avenue

Dodge

	Aries	FOREIG
	Diplomat	
	Lancer	Audi
	600	A
Ford		Volvo
	Taurus	7

DOMESTIC

- Lincoln-Mercury Continental Mark VII Sable
- <u>Oldsmobile</u> Cutlass Ciera Cutlass Supreme
- Plymouth Caravelle Grand Fury Reliant

Pontiac Grand Prix 6000

N

11

40 760

LARGE CARS

DOMESTIC

Buick LeSabre/Electra Wagon

Cadillac

Brougham Fleetwood Deville Limousine

Chevrolet Caprice

Ford LTD Crown Victoria

DOMESTIC

Lincoln-Mercury Grand Marquis Town Car

Pontiac Safari Wagon

FOREIGN

<u>Saab</u> 9000