

INTERIM REPORT

SEAT BELT AND SHOULDER STRAP USE AMONG URBAN TRAVELERS

by

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A Report Prepared by the Virginia Highway Research Council Under the
Sponsorship of the Highway Safety Division of Virginia

(The opinions, findings, and conclusions expressed in this report are those of the
author and not necessarily those of the sponsoring agencies.)

Virginia Highway Research Council
(A Cooperative Organization Sponsored Jointly by the Virginia
Department of Highways and the University of Virginia)

Charlottesville, Virginia

April 1974
VHRC 73-R36

SUMMARY

Because of the need to establish a data baseline for belt useage without mandatory legislation, a survey of selected areas of the state of Virginia was conducted during January 1974 to determine lap and shoulder belt use by urban travelers. Observer-data collectors were positioned at preselected signalized intersections. Over a nine-day period, data were collected in four metropolitan areas for eight hours each day.

Data were collected on 4,944 individuals travelling in 3,440 automobiles. Of the people sampled, 2,939 were male, and 2,005 were female. Twenty-four percent of the sampled drivers and 15.7% of the sampled passengers were wearing belts. Of the males, 18.8% wore a lap belt and 3.9% wore lap and shoulder belts. Of the females, 25.5% wore lap belts and 4.2% wore both belts. Lap belt percentages include those wearing both belts.

The occupancy rate for the survey was 1.44 individuals per vehicle. This low figure is moderately surprising in light of the fuel shortage existing during the survey and governmental pleas for car pooling. Of those individuals giving an affirmative reply to the question "Are you wearing seat belts?", approximately 20% self-reported incorrectly. This finding has implications for the interpretation of questionnaire types of studies.

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INTRODUCTION

Traditional efforts to encourage the use of seat and shoulder belts have recently been supplemented by a U. S. Department of Transportation push for state level belt use laws. The National Highway Traffic Safety Administration has proposed incentive grants to encourage the states to enact laws requiring the use of belts that are installed in motor vehicles. Based on enacted legislation, federal highway safety money would be increased by the following amounts:

- (1) 10% — Lap belt use by all front seat occupants.
- (2) 15% — Occupant use of all available belts in all front seats or use of lap belts in all seats.
- (3) 25% — Use of all belts available by all occupants.

The Highway Safety Division of Virginia favors the enactment of such legislation and a bill requiring the use of belts was drafted and submitted to the 1974 session of the Virginia General Assembly. In order to determine if advantages would be gained from mandatory belt use by motorists of the state, it is necessary to determine the current rate of belt use under the present system.

Studies have been conducted in several other states and have varied in format from questionnaire and interview methods to observational techniques. Observed belt use tends to be lower than stated belt use. For this survey, an observational technique was selected for urbanized high traffic volume areas. Survey areas included each of the four major metropolitan centers in the state.

PURPOSE

This study was initiated to determine the extent to which urban travelers, within the state of Virginia, were using available seat belts and shoulder straps.

METHODOLOGY

Observer-data collectors* surveyed Roanoke-Salem-Vinton on January 17 and 18, 1974; Alexandria-Arlington-Fairfax-Belvoir on January 20, 21, and 22; Richmond-Henrico-Chesterfield on January 23 and 24; Norfolk on January 25; and Hampton on January 26. Each day of the week, Sunday through Saturday, was sampled at least once and Thursday and Friday were sampled twice.

Three sites were sampled each day of the survey, and they were chosen on the basis of the following criteria: (1) relatively high traffic volumes, (2) an adequate vantage point for personal observation, (3) both primary and secondary road travel in and around the metropolitan area surveyed; and (4) some travel through the survey area. Three uniform time periods were used each day of the survey: (1) 8:00 a.m. to 10:30 a.m.; (2) 11:30 a.m. to 2:00 p.m., and (3) 3:30 p.m. to 6:30 p.m.

The observations were made at signalized intersections that did not have separate turning lanes. Only the right-hand lane was sampled, and this was done from a vantage point opposite the driver's side of the vehicle. A clipboard bearing the question "Are You Wearing Seat Belts?" alerted the travelers to the purpose of the observers. If an affirmative reply was received, it was verified by a visual observation and recorded on the data form.

At each site, the data collectors recorded whether the driver and passengers were wearing only the lap belt, both lap and shoulder belts, or neither belt (see Figure 1). They also recorded the sex and approximate age of each occupant, their seat positions, and the approximate age of the vehicle.

Occupant age was divided into four categories: (1) pre-adult (up to 16 years), (2) young adult (17-30 years), middle adult (31-60 years), and (4) older adult (61 and up). Vehicle age was recorded by three categories: (1) pre-1962, when belts were not required to be installed in vehicles sold in the state, (2) 1963-1971, and (3) 1972 to present, which includes vehicles equipped with a buzzer system.

*Bruce A. Kimble and Calvin R. DePew, Jr., students at Marshall Wythe School of Law, College of William and Mary, collected the data.

SAFETY BELT USAGE SURVEY FORM

Day _____
 Start _____
 Stop _____

Form No. _____
 Location _____
 At _____

FRONT

Veh. A	Driver			Center			Window		
	Belts	Sex	Age	Belts	Sex	Age	Belts	Sex	Age
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									

REAR

	Window			Center			Window		
	Belts	Sex	Age	Belts	Sex	Age	Belts	Sex	Age
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									

Restraint Use

- = Seat Belt
- X = Both
- O = No Device
- U = Unoccupied

Vehicle Age

- 1 = Pre 1962
- 2 = 1963-1971
- 3 = 1972 to Present

Occupant Age

- P = Pre Adult (0-16 Yrs.)
- Y = Young Adult (17-30 Yrs.)
- M = Middle Adult (31-60 Yrs.)
- O = Older Adult (61 and Up)

FINDINGS

For this interim report, only a few of the possible cross tabulations of the data were made. The amount of data gathered and the time constraints placed upon the completion of the report required the hand tabulation of the most significant data. The data are currently being prepared for computer processing. A more complete report is planned and will include vehicle and occupant age, sex, and seat position in relationship to belt use.

Table 1 presents the data obtained for each geographic area and the total for all areas. In the survey 3,440 cars and 4,944 people were sampled. Of these, 1,063 people (21.5%) were belted in some manner. There were 827 drivers (24%) and 236 passengers (15.7%) wearing belts. At this time it is not possible to tell if these figures are a direct function of vehicle age or if other factors play a significant role.

This survey was conducted in the middle of January 1974 during the so-called gasoline shortage with its attendant pleas for car pooling. One should expect vehicle occupancy rates to be higher than normal.^{1/} This was not the case, as the overall rate was 1.44 persons per vehicle, with a range from 1.29 on Saturday in Hampton to 1.78 on Sunday in Fairfax-Arlington. These rates are lower than normal for the time of year, day of week, and type of vehicle use.

Table 2 shows the male vs. female use of lap belts and lap and shoulder belts in combination. Of the 2,939 males sampled, 552 (18.8%) wore lap belts, and 122 (3.8%) wore lap and shoulder belts. Of the 2,005 females sampled, 511 (25.5%) wore lap belts and 85 (4.2%) wore both belts. The figures for lap belts include those who wore both belts.

Variations in belt use among the sites could be a function of day of week, age of vehicle (affluence of locale), site selection, weather, or other factors. Further analysis will attempt to determine the influence of these factors.

Two factors not directly a part of the survey were reported by the observer-data collectors. The first dealt with the vehicle occupants' self-report that they were wearing belts. Of the "Yes" answers obtained, it was estimated that 20% were false. (Only verified answers were recorded on the form.) The second factor was the educational and/or coercive aspect of the survey itself. Many individuals put on their belts after they had been checked for belt usage. It is apparent from these situations that an observational approach is superior to asking travelers if they use belts. It also appears that travelers can be educated (or coerced) into wearing belts with the technique of calling use to their attention and then checking for use.

^{1/} U. S. Department of Transportation/Federal Highway Administration. Nationwide Personal Transportation Study. Report No. 1, Automobile Occupancy. April 1972.

TABLE 1

LAP AND SHOULDER BELT USE

Geographic Area	Cars Sampled	People Sampled	People Belted	Drivers Belted	Passengers Belted
Roanoke-Vinton	377	518	96	76	20
Roanoke-Salem	399	616	117	91	26
Fairfax-Arlington	369	657	172	109	63
Alexandria-Belvoir- Prince William	263	372	73	60	13
Arlington-Fairfax- Annandale	478	620	164	134	30
Richmond-Henrico	549	749	179	145	34
Richmond-Chesterfield	511	719	132	105	27
Norfolk	331	482	89	70	19
Hampton	163	211	41	37	4
TOTAL	3,440	4,944	1,063	827	236

TABLE 2

MALE - FEMALE BELT USE

Geographic Area	Males Sampled	Males Belted	Males Both Belts	Females Sampled	Females Belted	Females Both Belts
Roanoke-Vinton	322	51	6	196	45	9
Roanoke-Salem	383	60	6	233	57	4
Fairfax-Arlington	377	86	19	280	86	15
Alexandria-Belvoir-Prince William	224	41	9	148	32	7
Arlington-Fairfax-Annandale	404	92	23	216	72	13
Richmond-Henrico	407	76	15	342	103	9
Richmond-Chesterfield	400	69	14	319	63	10
Norfolk	291	48	16	191	41	15
Hampton	131	29	4	80	12	3
TOTAL	2,939	552	112	2,005	511	85