



## National Occupant Protection Use Survey - 1996 Controlled Intersection Study

In 1996, the overall observed shoulder belt use rate was 61.5 percent, as measured by the National Occupant Protection Use Survey (NOPUS). This is compared to 58.0 percent observed in 1994. The NOPUS was conducted in the Fall of 1996 to estimate safety belt use in the U.S. This is the second in a series of Research Notes presenting the results of this survey.

NOPUS is composed of three separate studies: the *moving traffic study*, which provides information on overall shoulder belt use; the *controlled intersection study*, which provides more detailed information about shoulder belt use by type of vehicle and person characteristics and child restraint use; and the *shopping center study*, which provides information on rear-seat belt use. This note presents the results from the controlled intersection study. The results from the moving traffic study were released in a Research Note dated April 1997, *Observed Safety Belt Use in 1996*.

### Data Collection Methodology

Data collection for the controlled intersection study was conducted for 40 minutes at each of 2,006 randomly selected intersections with stop signs or traffic signals. Pairs of observers recorded shoulder belt use for drivers and right-front passengers of passenger cars and light trucks (pickup trucks, vans, and sport utility vehicles), the vehicle's license plate number, and the age group, sex and race of the observed person. Age, sex, and race were based on the best judgment of the observers. Child restraint information was collected for children under five years old in the front and second seats of the vehicle. Every day of the week and all daylight hours (8 a.m. to 6 p.m.) were covered by the study. Commercial and emergency vehicles were excluded.

### General Results

Restraint use was observed for 49,387 drivers and 13,330 passengers in passenger cars and 22,200 drivers and 5,941 passengers in light trucks. Restraint use varied according to the driver's or passenger's age

group, sex, race, and type of area where the data were collected. Table 1 compares observed rates between the 1994 and 1996 surveys. Tables 2 - 6 present detailed results from the 1996 study. Restraint use by specific vehicle type and available restraint system will be presented in a future Research Note.

**Table 1  
NATIONAL  
OCCUPANT PROTECTION USE SURVEY  
Percent Restraint Use by Year,  
Age, Sex, Race, and Urbanization**

	Year	
	1996	1994
<b>Age</b>		
Infant (less than 1 year)	85.2	87.7
Toddler (1 - 4 years)	60.1	60.7
Youth (5 - 15 years)	64.6	57.7
Young Adult (16 - 24 years)	49.5	52.6
Adult (25 - 69 years)	62.4	59.1*
Seniors (over 69 years)	68.8	
<b>Sex</b>		
Female	68.0	64.4
Male	56.8	54.4
<b>Race</b>		
White	62.6	59.6
Black	51.2	53.0
Other	58.0	54.6
<b>Urbanization</b>		
City	61.1	57.7
Suburban	64.4	62.9
Rural	60.1	52.8

\*1994 NOPUS collected only *Adult (25 years or older)*

## A Note on Estimation Procedures

The NOPUS is a multi-stage, probability-based sample survey. Consequently, each estimate has been statistically weighted according to the sample design and is subject to sampling variability. Estimates in the following tables are shown with two standard errors in

parentheses. By simply adding and subtracting the standard errors from the estimate, an approximate 95% confidence interval can be created. This means that you can be 95% confident that the true use rate lies within this interval. More information about the sample design and estimation procedures are available from the National Center for Statistics and Analysis.

**Table 2**  
**1996 NATIONAL OCCUPANT PROTECTION USE SURVEY**  
**Percent Shoulder Belt Use by Age Group**  
**(Estimates and 2 Standard Errors)**

	Overall	Youth (5 - 15 years)	Young Adult (16 - 24 years)	Adult (25 - 69 years)	Senior (over 69 years)
Overall Belt Use	61.5 (3.4)	64.6 (7.6)	49.5 (8.0)	62.4 (3.6)	68.8 (6.6)
Passenger Cars	66.0 (3.8)	67.4 (10.0)	54.7 (7.0)	66.6 (4.4)	75.3 (6.4)
Drivers	66.2 (3.6)	79.2 (25.0)	58.3 (7.0)	66.5 (4.0)	74.8 (5.8)
Passengers	65.3 (6.4)	64.5 (8.4)	44.0 (12.4)	67.4 (8.6)	76.4 (8.4)
Light Trucks	54.3 (4.2)	59.6 (8.4)	37.9 (14.6)	56.0 (4.8)	48.9 (10.6)
Drivers	53.7 (4.8)	42.7 (36.6)	37.3 (18.0)	55.3 (5.0)	50.7 (10.4)
Passengers	56.8 (5.8)	60.9 (8.6)	39.8 (11.8)	59.7 (7.4)	45.5 (13.2)

**Table 3**  
**1996 NATIONAL OCCUPANT PROTECTION USE SURVEY**  
**Percent Shoulder Belt Use by Urbanization**  
**(Estimates and 2 Standard Errors)**

	Overall	City	Suburban	Rural
Overall Belt Use	61.5 (3.4)	61.1 (3.4)	64.4 (3.0)	60.1 (7.6)
Passenger Cars	66.0 (3.8)	64.6 (3.6)	68.5 (3.2)	65.6 (10.0)
Drivers	66.2 (3.6)	65.6 (4.0)	69.1 (3.4)	64.3 (9.0)
Passengers	65.3 (6.4)	60.7 (4.2)	65.3 (4.6)	69.6 (13.4)
Light Trucks	54.3 (4.2)	53.6 (4.8)	55.7 (5.4)	54.1 (7.6)
Drivers	53.7 (4.8)	53.3 (5.2)	55.3 (5.4)	53.2 (9.0)
Passengers	56.8 (5.8)	54.6 (5.8)	57.9 (7.2)	57.5 (9.6)

**Table 4**  
**1996 NATIONAL OCCUPANT PROTECTION USE SURVEY**  
**Percent Shoulder Belt Use by Race and Sex**  
**(Estimates and 2 Standard Errors)**

	Race			Sex	
	White	Black	Other	Female	Male
Shoulder Belt Use	62.6 (3.0)	51.2 (5.8)	58.0 (13.0)	68.0 (3.2)	56.8 (3.6)
Passenger Cars	68.1 (3.2)	53.3 (5.8)	57.4 (21.8)	69.3 (3.8)	62.8 (4.2)
Drivers	68.0 (2.8)	54.7 (7.2)	58.8 (18.6)	69.5 (3.4)	63.7 (4.4)
Passengers	68.5 (6.4)	48.4 (5.8)	52.9 (31.8)	68.9 (7.0)	56.3 (5.0)
Light Trucks	53.6 (4.2)	42.1 (15.4)	58.6 (12.8)	64.5 (4.4)	50.0 (5.8)
Drivers	53.4 (4.8)	42.7 (19.0)	55.7 (14.2)	64.1 (6.4)	50.8 (5.6)
Passengers	54.7 (6.0)	39.9 (12.4)	72.0 (14.8)	65.1 (6.4)	42.1 (9.8)

**Results - Child Restraints**

Observing child restraint use at randomly selected sites, even at the 2,006 sites in this study, poses certain collection and estimation problems. Since only 8 percent of the resident population of the country are children under the age of 5, observing enough children in passenger vehicles to produce reliable estimates is difficult. During the controlled intersection collection, a total of 153 infants and 513 toddlers were observed. Consequently, estimates of child restraint use may be subject to large sampling errors and should be interpreted with caution. When the number of children observed was small, estimates were made only for overall restraint use.

For infants, the observed restraint type was always child safety seats. However, among toddlers in passenger cars, 36.8 percent of front-seat toddlers and 29.8 percent of back-seat toddlers were observed in safety seats, while 14.6 percent of front-seat toddlers and 30.6 percent of back-seat toddlers were observed using safety belts. Among toddlers in light trucks, 46.9 percent of front-seat toddlers and 55.7 percent of back-seat toddlers were observed in safety seats, while 20 percent of both front-seat and back-seat toddlers were observed using safety belts. Note that no attempt was made to measure child safety seat misuse in this study.

**Table 5**  
**1996 NATIONAL**  
**OCCUPANT PROTECTION USE SURVEY**  
**Percent Children Under 5 Years Restrained**  
**(Estimates and 2 Standard Errors)**

	Restrained
<b>Overall</b>	<b>61.2 (13.2)</b>
Infants (less than 1 year)	85.2 (14.6)
Toddlers (1- 4 years)	60.1 (15.0)
Passenger Car	56.5 (16.0)
Light Truck	68.7 (19.7)
Front Seat	61.0 (13.1)
Back Seat	61.5 (19.6)
Rush Hour	55.2 (25.1)
Non-Rush Hour	62.0 (14.7)
Weekday	62.2 (14.7)
Weekend	52.6 (20.9)
City	68.9 (10.0)
Suburban	78.6 (12.1)
Rural	35.6 (22.0)

**Table 6**  
**1996 NATIONAL**  
**OCCUPANT PROTECTION USE SURVEY**  
**Percent Restraint Use by Infant/Toddler**  
**and Driver Sex**  
**(Estimates and 2 Standard Errors)**

Driver Shoulder Belt Use with	Restraint Use
Restrained Infant	82.1 (12.6)
Unrestrained Infants	37.4 (49.0)
Restrained Toddler	83.8 (7.2)
Unrestrained Toddler	25.4 (18.6)
No Children	61.4 (3.4)
<b>Child Restraint Use for</b>	
Infant with Restrained Driver	92.5 (10.6)
Toddler with Restrained Driver	86.3 (8.4)
Infant with Unrestrained Driver	62.4 (39.2)
Toddler with Unrestrained Driver	23.5 (14.8)
<b>Child Restraint Use for</b>	
Infant with Female Driver	88.2 (13.6)
Infant with Male Driver	78.4 (33.0)
Toddler with Female Driver	64.4 (18.2)
Toddler with Male Driver	54.7 (27.2)

For additional copies of this research note, please call (202) 366-4198 or fax your request to (202) 366-7078. For questions regarding the data reported in this research, contact Nancy Bondy [202-366-5353] or Dennis Utter [202-366-5351] of the National Center for Statistics and Analysis. This research note and other general information on highway traffic safety may be accessed by Internet users at:

*<http://www.nhtsa.dot.gov/people/nca>*

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