



## Observed Shoulder Belt Use from the June 2001 Mini NOPUS

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The shoulder belt use rate for drivers and right front-seat passengers in the United States was estimated to be 73 percent in June 2001, compared to 71 percent in the fall of 2000, according to results obtained from National Occupant Protection Use Survey conducted by the National Highway Traffic Safety Administration (NHTSA). The June 2001 use rate is the highest national rate yet observed and continues a pattern of relatively steady increase in belt use from 58 percent in 1994. The survey also showed significant increases for the South (7 percentage points) to 76 percent and for passengers (4 percentage points) to 72 percent from the fall of 2000. In addition, the survey shows that overall shoulder belt use in states with primary enforcement seat belt laws was 78 percent compared with 67 percent in states without primary enforcement laws.

### Background

NHTSA began conducting National Occupant Protection Use Surveys (NOPUS) under the direction of the National Center for Statistics and Analysis (NCSA) in the fall of 1994 to obtain nationwide estimates of shoulder belt use and support the Agency's occupant protection programs. A Full NOPUS is conducted every other fall, most recently in the fall of 2000 and is composed of two studies. The *Moving Traffic Study* provides estimates of shoulder belt use by vehicle type, geographic region, driver / passenger, rush

hour / non-rush hour, and weekday / weekend. The *Controlled Intersection Study* provides belt use estimates by demographic characteristics of their users and more detailed vehicle types, and estimates of child restraint use. Results from these surveys have been documented by NCSA in a series of Research Notes.

Because a Full NOPUS is conducted only biennially, NHTSA conducts a Mini NOPUS, consisting only of a Moving Traffic Survey, to provide interim measures of belt use and support the Buckle Up America campaign. The first Mini NOPUS was conducted in May 1998, and additional surveys occurred in June and December of 1998, December 1999, June 2000, and June 2001.

### Survey Design

The Full NOPUS and the Mini NOPUS use multi-stage probability samples to ensure that the results represent occupant protection use in the country as a whole. In the first stage of the sample selection, counties were grouped by region (Northeast, Midwest, South, West), level of urbanization (metropolitan or not), and level of belt use (high, medium, or low). Fifty counties or groups of counties (called primary sampling units or PSUs) were selected within the resulting strata based on the estimated annual vehicle miles traveled. In the next stage, within each PSU a probability sample of roadways was selected

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from two categories: major roads and local roads. An observational site – an exit ramp on an interstate highway, an intersection controlled by a stop sign or stoplight, or an uncontrolled intersection – was identified on each selected roadway. Prior to the fall of 2000, the Full NOPUS Moving Traffic Study used approximately 4,000 roadway sites and the Mini NOPUS used approximately 2,000. Starting in the fall of 2000 both surveys used the same sample of approximately 2,000 observational sites.

## Data Collection

Data collection for the Mini NOPUS, as well as the Moving Traffic Study of the Full NOPUS, consists of observing shoulder belt use in passenger motor vehicles. Observers were stationed for 30 minutes at each selected observational site. Shoulder belt use was noted for drivers and right-front passengers in passenger cars, pickup trucks, vans, minivans, and sport utility vehicles (SUVs). Commercial and emergency vehicles were excluded. Rear seat and front middle seat passengers were excluded. The survey covered all days of the week and all hours between 8:00 AM and 6:00 PM. Approximately 175,000 drivers and 50,000 passengers were observed.

## Results

Tables 1, 2, and 3 present detailed results from the June 2001 Mini NOPUS and compare them to results from the Fall 2000 NOPUS. Table 4 and Chart 1 shows the shoulder belt use measured by each Full NOPUS and Mini NOPUS to date.

Estimates from the NOPUS are based on a sample, are statistically weighted according to the sample design, and, therefore, are subject to sampling error. Each estimate in the following tables is shown with its corresponding sampling error in parentheses. Adding and subtracting twice the sampling error from the corresponding estimate will produce an approximate 95 percent confidence interval. One can be 95 percent confident that the use rate being estimated lies within this interval. For example, we are 95 percent confident that the overall belt use rate

in June 2001 lies in the range 70 percent - 76 percent.

Belt use has been steadily increasing. Tables 1-3 show that belt use in June 2001 is higher or statistically unchanged from the fall of 2000 across all categories. Table 4 shows that this most recent data continues a pattern of increase or statistical similarity from 1994.

Table 1 shows that use rates have increased for passengers and that cars, vans, and SUVs have higher rates than pickup trucks. Passengers exhibited 2–7 point increases in use rates, which has made the driver-passenger gap statistically insignificant. Belt use continues to be higher in states with stronger enforcement laws. All states have either “primary” (also called “standard”) enforcement laws, in which motorists can be stopped and cited for not wearing their safety belts without any other infraction having occurred, or “secondary” enforcement laws, in which the vehicle must have been stopped for another infraction. Shoulder belt use in areas with primary enforcement laws was 9 to 22 percentage points higher than in areas with secondary enforcement, with the greatest differences for pickup trucks.

Table 2 shows shoulder belt use by the geographic region of the country. The South exhibited significant increases in use rates, with a 7 point increase overall and an 11 point increase for pickup trucks. Rates in the South, West and Midwest are now statistically similar, while the Northeast has a significantly lower use rate. In the West, the combined driver and passenger use rate was estimated at 77 percent for all passenger vehicles and at 81 percent for passenger cars. Use rates in the Northeast, Midwest and West were statistically unchanged. Shoulder belt use is lowest in the Northeast, where it was as much as 34 percentage points below rates in the South. The regions are defined as follows: Northeast (ME, VT, NH, MA, RI, CT, NY, PA, NJ), Midwest (MI, OH, IN, IL, WI, MN, IA, MO, KS, NE, SD, ND), South (WV, MD, DE, VA, KY, TN, NC, SC, GA, FL, AL, MS, AR, LA, OK, TX, DC), and West (AK, WA, OR, CA, NV, ID, UT, AZ, NM, CO, WY, MT, HI).

**Table 1**  
**Shoulder Belt Use in Fall 2000 and June 2001 by Vehicle Type, Occupant Type,**  
**and Enforcement Status**

Estimates and sampling errors (shown in parentheses) are in percentage points.

|                        | Fall 2000 |          | June 2001           |                       |
|------------------------|-----------|----------|---------------------|-----------------------|
|                        | Overall   | Overall  | Primary Enforcement | Secondary Enforcement |
| All Passenger Vehicles | 71 (1.4)  | 73 (1.3) | 78 (1.9)            | 67 (2.2)              |
| Drivers                | 72 (1.5)  | 74 (1.4) | 79 (1.9)            | 67 (2.2)              |
| Passengers             | 68 (1.5)  | 72 (1.4) | 76 (2.4)            | 66 (2.5)              |
| Passenger Cars         | 74 (1.5)  | 76 (1.1) | 81 (1.7)            | 71 (1.9)              |
| Drivers                | 75 (1.6)  | 77 (1.2) | 82 (1.6)            | 71 (2.0)              |
| Passengers             | 70 (1.5)  | 74 (1.3) | 78 (2.3)            | 69 (1.9)              |
| Vans and SUVs          | 74 (1.7)  | 75 (1.4) | 79 (1.8)            | 70 (2.2)              |
| Drivers                | 75 (1.9)  | 75 (1.2) | 79 (1.8)            | 70 (1.7)              |
| Passengers             | 72 (1.4)  | 74 (2.0) | 80 (1.9)            | 68 (3.7)              |
| Pickup Trucks          | 59 (3.5)  | 62 (2.6) | 70 (3.5)            | 50 (3.6)              |
| Drivers                | 61 (3.5)  | 62 (3.1) | 71 (3.8)            | 49 (4.4)              |
| Passengers             | 55 (3.4)  | 62 (2.0) | 66 (3.7)            | 54 (2.8)              |

Source: National Center for Statistics and Analysis, NHTSA, National Occupant Protection Use Survey, 2000-2001.

**Table 2**  
**Shoulder Belt Use in Fall 2000 and June 2001 by Vehicle Type, Occupant Type, and Region**  
Estimates and sampling errors (shown in parentheses) are in percentage points.

| Vehicle and Occupant   | Northeast |           | Midwest  |          | South    |          | West     |          |
|------------------------|-----------|-----------|----------|----------|----------|----------|----------|----------|
|                        | Fall 00   | June 01   | Fall 00  | June 01  | Fall 00  | June 01  | Fall 00  | June 01  |
| All Passenger Vehicles | 67 (2.7)  | 62 (4.2)  | 68 (3.4) | 72 (2.9) | 69 (2.0) | 76 (1.9) | 80 (2.2) | 77 (2.2) |
| Drivers                | 68 (3.0)  | 62 (4.0)  | 68 (3.6) | 72 (2.9) | 71 (1.9) | 76 (2.1) | 81 (2.7) | 79 (2.2) |
| Passengers             | 63 (3.1)  | 60 (5.2)  | 68 (3.2) | 72 (3.0) | 65 (2.9) | 74 (1.9) | 75 (1.1) | 74 (2.6) |
| Passenger Car          | 68 (2.8)  | 67 (2.3)  | 70 (3.5) | 74 (2.4) | 73 (2.1) | 79 (2.0) | 83 (2.3) | 81 (2.7) |
| Drivers                | 69 (3.1)  | 68 (2.1)  | 70 (3.7) | 75 (2.5) | 75 (2.0) | 80 (2.3) | 85 (2.8) | 82 (2.5) |
| Passengers             | 65 (3.2)  | 64 (3.3)  | 69 (3.2) | 73 (2.6) | 67 (3.0) | 76 (1.5) | 78 (1.2) | 78 (3.7) |
| Vans and SUVs          | 71 (5.0)  | 63 (4.2)  | 70 (3.1) | 73 (2.8) | 72 (2.4) | 78 (1.9) | 82 (3.1) | 81 (2.3) |
| Drivers                | 73 (5.9)  | 64 (2.7)  | 70 (3.5) | 72 (2.7) | 73 (2.6) | 78 (1.9) | 82 (3.4) | 83 (2.3) |
| Passengers             | 65 (1.3)  | 59 (9.6)  | 71 (2.2) | 74 (3.4) | 69 (2.2) | 78 (2.1) | 81 (2.5) | 77 (2.4) |
| Pickup Trucks          | 45 (6.6)  | 38 (8.6)  | 58 (6.7) | 62 (4.9) | 56 (4.1) | 67 (4.1) | 68 (7.1) | 65 (2.4) |
| Drivers                | 47 (6.7)  | 34 (11.8) | 58 (6.5) | 61 (5.1) | 57 (4.2) | 68 (4.9) | 71 (7.5) | 66 (2.5) |
| Passengers             | 39 (6.8)  | 49 (2.6)  | 57 (8.0) | 64 (4.7) | 52 (4.2) | 63 (3.9) | 62 (6.3) | 61 (2.4) |

Source: National Center for Statistics and Analysis, NHTSA, National Occupant Protection Use Survey, 2000-2001.

Table 3 shows that there is no significant difference in belt use on weekdays and weekends, or in rush hour versus non-rush hour. The significant weekend-weekday differences in the various vehicle and occupant types in the fall of 2000 were eliminated in June 2001 by 3-7 percentage point increases for passengers in 2001.

Table 4 and Chart 1 show the relatively steady progression in shoulder belt use for the period June 1994 to June 2001. Estimates from the fall (e.g. Fall 1994, denoted by a square in Chart 1) are from a Full NOPUS, and those from a month (e.g. May 1998, denoted by a triangle) are from a Mini NOPUS. The fall surveys were conducted

in October and November. The solid line in Chart 1 is the linear trend of the NOPUS estimates and the dashed lines are the linear trends of the 95 percent confidence bounds. Overall shoulder belt use has increased 15 percentage points, from 58 percent in the fall of 1994 to 73 percent in June of 2001, a relative increase of 26 percent. The increase in use by occupants of pickups, vans, and SUVs has been even more dramatic -- 19 percentage points, a relative increase of 38 percent. The large increase in this category could be due to an increase in SUV and van ownership, since occupants of these vehicles exhibit higher belt use.

| <b>Table 3</b>   |                      |          |          |          |                        |          |               |          |
|--|----------------------|----------|----------|----------|------------------------|----------|---------------|----------|
| <b>Shoulder Belt Use in Fall 2000 and June 2001 by Vehicle Type, Occupant Type, Day of Week, and Time of Day</b> |                      |          |          |          |                        |          |               |          |
| Estimates and sampling errors (shown in parentheses) are in percentage points.                                   |                      |          |          |          |                        |          |               |          |
| Vehicle and Occupant   | Weekday <sup>1</sup> |          | Weekend  |          | Rush Hour <sup>2</sup> |          | Non-Rush Hour |          |
|  | Fall 00              | June 01  | Fall 00  | June 01  | Fall 00                | June 01  | Fall 00       | June 01  |
| All Passenger Vehicles   | 71 (1.5)             | 73 (1.6) | 73 (1.7) | 74 (1.4) | 73 (1.6)               | 75 (1.8) | 70 (1.5)      | 72 (1.9) |
| Drivers  | 72 (1.6)             | 73 (1.6) | 74 (1.9) | 74 (1.5) | 74 (1.7)               | 76 (2.0) | 71 (1.6)      | 72 (1.8) |
| Passengers   | 66 (1.8)             | 71 (1.8) | 71 (1.8) | 72 (1.6) | 69 (1.7)               | 72 (1.6) | 67 (1.7)      | 71 (2.2) |
| Passenger Cars   | 73 (1.6)             | 76 (1.3) | 76 (1.8) | 76 (1.6) | 75 (1.7)               | 77 (1.9) | 73 (1.6)      | 76 (1.3) |
| Drivers  | 75 (1.7)             | 77 (1.4) | 77 (2.0) | 77 (1.5) | 77 (1.8)               | 77 (2.1) | 74 (1.6)      | 77 (1.3) |
| Passengers   | 68 (1.8)             | 74 (1.4) | 74 (1.9) | 73 (2.2) | 71 (1.7)               | 75 (1.7) | 69 (1.7)      | 74 (1.7) |
| Vans and SUVs  | 73 (1.8)             | 74 (1.7) | 76 (2.0) | 76 (1.3) | 75 (2.1)               | 76 (1.9) | 72 (1.6)      | 73 (2.0) |
| Drivers  | 74 (2.0)             | 75 (1.5) | 76 (2.0) | 76 (1.3) | 76 (2.5)               | 77 (2.1) | 73 (1.8)      | 74 (1.7) |
| Passengers   | 70 (1.3)             | 73 (2.7) | 75 (2.3) | 77 (1.7) | 74 (1.6)               | 74 (2.2) | 70 (1.5)      | 73 (3.5) |
| Pickup Trucks  | 58 (3.2)             | 62 (3.2) | 62 (4.9) | 63 (2.7) | 61 (3.9)               | 67 (3.8) | 57 (3.4)      | 59 (3.7) |
| Drivers  | 59 (3.4)             | 62 (3.7) | 65 (4.7) | 63 (2.9) | 62 (3.9)               | 68 (4.8) | 59 (3.6)      | 58 (4.2) |
| Passengers   | 55 (2.9)             | 62 (2.3) | 55 (5.7) | 60 (3.0) | 57 (4.6)               | 62 (2.5) | 54 (3.5)      | 62 (3.0) |

Source: National Center for Statistics and Analysis, NHTSA, National Occupant Protection Use Survey, 2000-2001.

<sup>1</sup> Weekdays are defined to be Monday – Friday.

<sup>2</sup> Rush hour is defined to be 8:00 - 9:30 AM and 3:30 – 6:00 PM on weekdays.

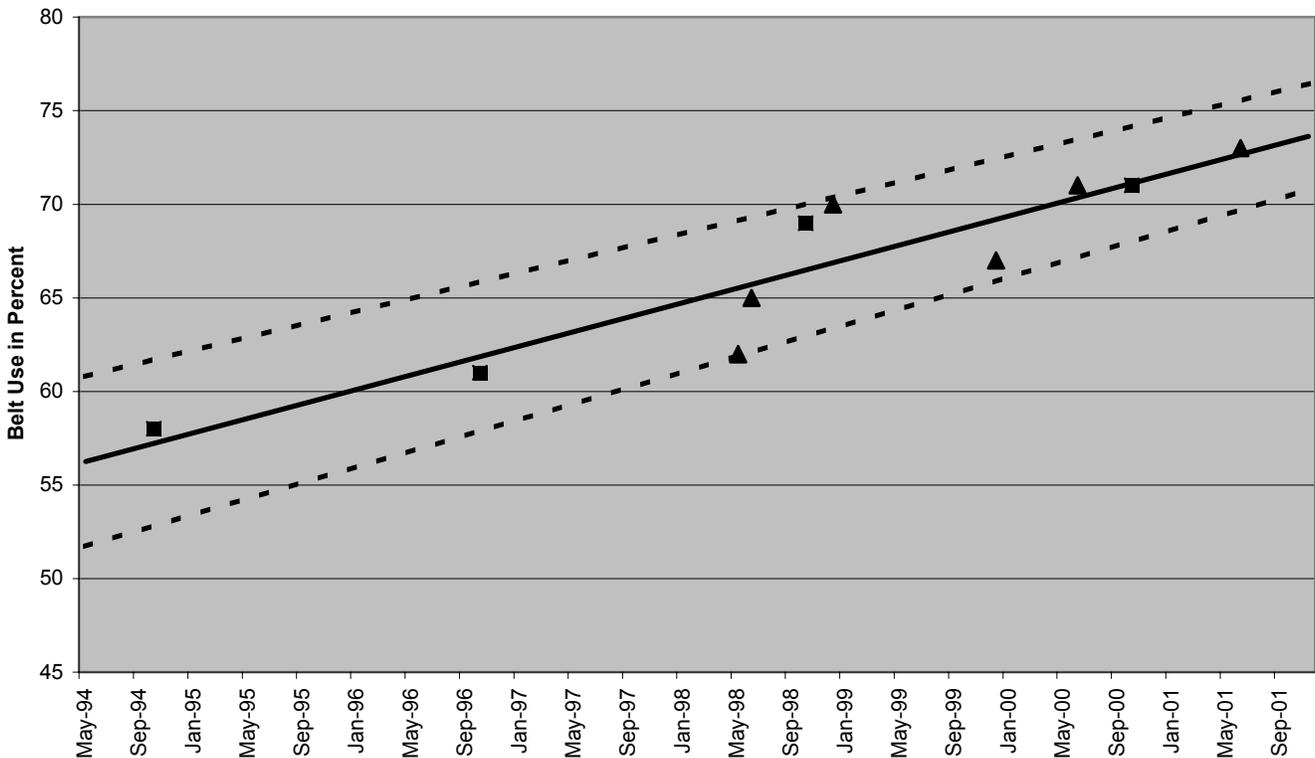
**Table 4**  
**Shoulder Belt Use by Vehicle Type and Occupant Type from Fall 1994 to June 2001**  
 Estimates and sampling errors (shown in parentheses) are in percentage points.

| Vehicle and Occupant    | Fall 94  | Fall 96  | May 98   | Jun 98   | Fall 98  | Dec 98   | Dec 99   | Jun 00   | Fall 00  | Jun 01   |
|-------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| All Passenger Vehicles  | 58 (1.9) | 61 (2.0) | 62 (2.6) | 65 (1.9) | 69 (1.7) | 70 (2.2) | 67 (1.3) | 71 (1.6) | 71 (1.4) | 73 (1.3) |
| Drivers                 | 59 (1.9) | 62 (1.8) | 63 (2.4) | 66 (1.9) | 70 (1.8) | 70 (2.2) | 67 (1.3) | 71 (1.6) | 72 (1.5) | 74 (1.4) |
| Passengers              | 55 (1.8) | 59 (3.3) | 60 (3.3) | 63 (2.0) | 65 (1.9) | 69 (2.3) | 64 (1.8) | 70 (1.6) | 68 (1.5) | 72 (1.4) |
| Passenger Cars          | 63 (1.9) | 65 (2.1) | 66 (2.8) | 69 (1.5) | 71 (1.7) | 72 (2.3) | 70 (1.2) | 73 (1.5) | 74 (1.5) | 76 (1.1) |
| Drivers                 | 64 (1.8) | 65 (2.1) | 67 (2.5) | 70 (1.5) | 72 (1.9) | 73 (2.4) | 71 (1.2) | 74 (1.5) | 75 (1.6) | 77 (1.2) |
| Passengers              | 59 (2.2) | 62 (2.3) | 62 (3.8) | 66 (1.7) | 68 (2.0) | 72 (2.1) | 66 (1.7) | 71 (1.7) | 70 (1.5) | 74 (1.3) |
| Vans, SUVs, and Pickups | 50 (1.8) | 56 (2.0) | 56 (2.4) | 60 (2.6) | 66 (2.0) | 66 (2.4) | 62 (1.6) | 67 (2.0) | 68 (1.7) | 69 (1.8) |
| Drivers                 | 51 (1.9) | 58 (1.6) | 57 (2.6) | 61 (2.7) | 67 (2.1) | 67 (2.4) | 62 (1.8) | 67 (2.0) | 69 (1.9) | 70 (1.8) |
| Passengers              | 49 (1.8) | 53 (5.2) | 55 (2.7) | 58 (2.7) | 61 (2.3) | 65 (2.8) | 60 (2.1) | 68 (1.9) | 65 (1.4) | 69 (1.9) |

Source: National Center for Statistics and Analysis, NHTSA, National Occupant Protection Use Survey, 1994-2001.

**CHART 1: SHOULDER BELT USE RATES: FALL 1994 TO JUNE 2001**

A square denotes a Full NOPUS estimate and a triangle denotes a Mini NOPUS estimate.  
 The solid and dashed lines are the trend lines of the estimates and confidence bounds, respectively.



Source: National Center for Statistics and Analysis, NHTSA, National Occupant Protection Use Survey, 1994-2001.

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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 the authors (Donna Glassbrenner [202.366.5358] 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/ncsa>.

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