

Traffic Safety Facts

Research Note

DOT HS 810 933

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Seat Belt Use in Rear Seats in 2007

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In 2007, seat belt use in rear seats in the United States was 76 percent, 11 percentage points higher than 2006. This result is from the National Occupant Protection Use Survey (NOPUS), which provides the only probability-based observed data on seat belt use in the United States. NOPUS is conducted annually by the National Center for Statistics and Analysis of the National Highway Traffic Safety Administration.

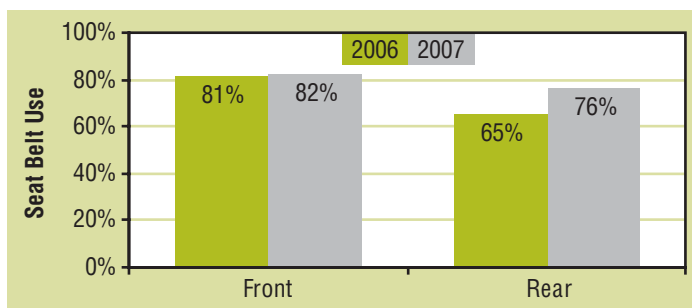
The 2007 survey also found the following:

- Seat belt use continued to be lower in the rear seat than in the front seat.
- The rear-seat belt use increase occurred in both genders, across all age groups, and across all race/ethnicity groups.

- Seat belt use in rear seats was lower among occupants age 25 to 69 and higher among occupants 70 and older.
- Seat belt use in rear seats was higher among States with laws requiring belt use in all seating positions.

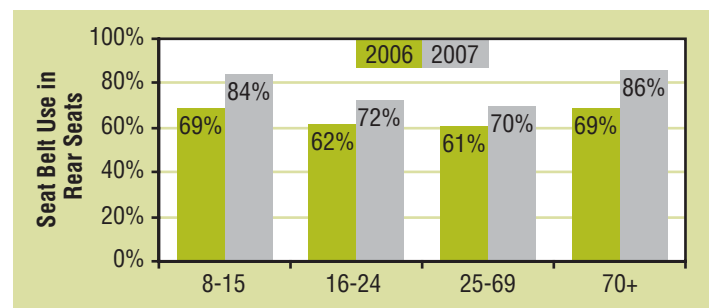
Seat belt use in front seats nationwide was 82 percent in 2007, a slight gain from the 2006 use rate of 81 percent. For detailed information of the seat belt use in front seats in 2007, please consult the companion publications "Seat Belt Use in 2007—Overall Results" and "Seat Belt Use in 2007—Demographic Results," which are available at www-nrd.nhtsa.dot.gov/CMSWeb/index.aspx.

Seat Belt Use by Seating Position



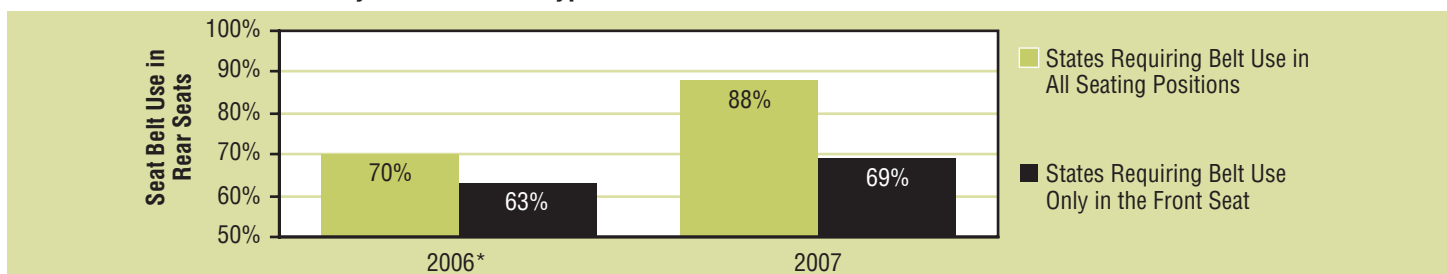
Source: National Occupant Protection Use Survey, NHTSA's National Center for Statistics and Analysis, 2006, 2007

Seat Belt Use in Rear Seats by Age



Source: National Occupant Protection Use Survey, NHTSA's National Center for Statistics and Analysis, 2006, 2007

Seat Belt Use in Rear Seats by Year and Law Type in 2006 and 2007



Source: National Occupant Protection Use Survey, NHTSA's National Center for Statistics and Analysis, 2006, 2007.
Note: The 2006 rates have been revised to reflect updated information for the seat belt use law status in the States.

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Seat Belt Use in the Rear Seat of Passenger Vehicles, by Major Characteristics

Passenger Group ¹	2006		2007		2006-2007 Change		
	Belt Use ²	Confidence That Use Is High or Low in Group ³	Belt Use ²	Confidence That Use Is High or Low in Group ³	Change in Percentage Points	Confidence in a Change in Use ⁴	Conversion Rate ⁵
All Passengers	65%		76%		11	100%	33%
Males	63%	78%	74%	99%	11	100%	29%
Females	66%	78%	79%	99%	13	100%	38%
Passengers Who Appear to Be							
Age 8-15	69%	92%	84%	100%	15	100%	47%
Age 16-24	62%	84%	72%	99%	10	99%	26%
Age 25-69	61%	86%	70%	100%	9	91%	22%
Age 70 and Older	69%	77%	86%	98%	17	98%	55%
Passengers Who Appear to Be							
White	69%	100%	80%	99%	11	100%	34%
Black	48%	100%	60%	100%	12	97%	23%
Members of Other Races	62%	68%	75%	63%	13	95%	35%
Passengers in States With Laws Requiring Belts Be Used ⁶							
In All Seating Positions	70%	89%	88%	100%	18	100%	60%
In the Front Seat Only	63%	89%	69%	100%	6	98%	17%

¹ Up to two passengers observed in the second row of seats in passenger vehicles with no commercial or government markings.

² Use of shoulder belts observed between 7 a.m. and 6 p.m.

³ The level of statistical confidence that use in the passenger group (e.g., passengers who appear to be White) is higher or lower than use in the corresponding complementary passenger groups (e.g., combined passengers who appear to be Black or members of other races). Confidence levels that meet or exceed 90 percent are formatted in boldface type. Confidence levels are rounded to the nearest percentage point, and so levels reported as "100 percent" confidence are between 99.5 percent and 100.0 percent.

⁴ The degree of statistical confidence that the 2007 use rate is different from the 2006 rate. Confidence levels that meet or exceed 90 percent are formatted in boldface type.

⁵ The "conversion rate" is the percentage reduction in belt nonuse. This is based on unrounded use rates.

⁶ Use rates reflect the law in effect at the time data was collected. Also note that the 2006 numbers have been revised to reflect updated information for the seat belt use law status in the States.

Source: National Occupant Protection Use Survey, National Highway Traffic Safety Administration, National Center for Statistics and Analysis

Survey Methodology

The National Occupant Protection Use Survey is the only probability-based observational survey of seat belt use in the United States. The survey observes usage as it actually occurs at a random selection of roadway sites, and so provides the best tracking of the extent to which vehicle occupants in this country are buckling up.

The survey data is collected by sending trained observers to probabilistically sampled intersections controlled by stop signs or stoplights, where vehicle occupants are observed from the roadside. Data is collected between 7 a.m. and 6 p.m. Only stopped vehicles are observed to permit time to collect the variety of information required by the survey, including subjective assessments of vehicle occupants' age and race. Observers collect data on the driver, right-front passenger, and up to two passengers in the second row of seats. Observers do not interview vehicle occupants, so that NOPUS can capture the untainted behavior of vehicle occupants.

The 2007 NOPUS data was collected between June 4 and June 25, while the 2006 data was collected between June 5 and June 26.

Sites, Vehicles, and Occupants Observed

Numbers of	2006	2007	Percentage Change
Sites Observed	1,200	1,500	23%
Vehicles Observed	43,000	58,000	36%
Occupants Observed	59,000	82,000	39%
Rear Seat	5,000	7,000	40%
Rear Seat Occupants Age 8+	3,000	4,000	33%

Although the data was collected solely from vehicles stopped at intersections controlled by a stop sign or stoplight, the estimates in this publication concerning seat belt use in the front seat reflect use by vehicle occupants *in transit* on *all types of roadways*. This is accomplished by making adjustments using data from another portion of the survey that observes belt use in vehicles in transit on general roadways.

Because the NOPUS sites were chosen through probabilistic means, we can analyze the statistical significance of its results. Statistically significant changes in belt use between 2006 and 2007 are identified in the table “Seat Belt Use in the Rear Seat of Passenger Vehicles, by Major Characteristics” by having a result that is 90 percent or greater in the table’s column 7. Statistical confidence levels that seat belt use in a given passenger group, e.g., passengers who appear to be White, is higher or lower than in the complementary passenger groups, e.g., combined passengers who appear to be Black or members of other races, are provided in columns 3 and 5. Such comparisons are made within categories delineated by changes in row shading in the table.

The 2007 survey yielded nearly a 40-percent increase in the number of occupants observed (59,000 in 2006 versus 82,000 in 2007). This could be due in part to our additional efforts to find eligible sites and consequently data was collected from 300 more sites in 2007 than in 2006. Therefore, we have more accurate results in 2007.

In order to better capture early commuters, NOPUS began collecting data one hour earlier in 2007. NOPUS data collection now begins at 7 a.m. instead of 8 a.m. in the 2006 and prior surveys. The survey also changed its definitions of “weekday rush hour” in order to end the morning rush hour 30 minutes earlier. The definition of weekday rush hour in 2006 and prior survey years was that data collection at the site began before 10 a.m. or after 3:30 p.m. The definition used in 2007 is that data collection at the site began before 9:30 a.m. or after 3:30 p.m. Neither the new start time nor the new definition of rush hour appeared to have an appreciable impact on the survey results.

NOPUS uses a complex multistage probability sample, statistical data editing, imputation of unknown values, and complex estimation and variance estimation procedures. The 2007 survey results reflect the partial incorporation of a new set of probabilistically designed observation sites. Specifically, like the 2006 survey, the 2007 survey used half of the observation sites from the survey years before 2006 and half of the sites from the newly designed sample of observation sites. Data from 2005 and prior years were obtained from the old observation sites only.

Data collection, estimation, and variance estimation for NOPUS are conducted by Westat, Inc., under the direction of the National Center for Statistics and Analysis in NHTSA under Federal contract number DTNH22-07-D-00057.

States With Laws Requiring Seat Belts Be Used in All Seating Positions¹

Alaska	California	Delaware
District of Columbia	Idaho	Kentucky
Massachusetts	Montana	Nevada
New Mexico	Oregon	Rhode Island
South Carolina	North Carolina	Utah
Vermont	Washington	Wisconsin
Wyoming		

¹ States with laws in effect as of June 30, 2007, requiring people 18 and older to use seat belts in all seating positions. Also includes the District of Columbia. North Carolina’s rear-seat seat belt use law took effect on December 1, 2006. In no other States did such laws take effect during the period June 30, 2006 – June 30, 2007. This table also reflects updated information for the seat belt use law status in the States.

Definitions

Vehicle occupants observed in the survey were counted as “belted” if they appeared to have a shoulder belt across the front of the body. NOPUS does not observe the use of lap belts because these restraints cannot be reliably observed from the roadside.

Not all vehicles on the road today have shoulder belts in the rear seats. Based on the 2006 vehicle registration data from the National Vehicle Population Profile, R.L. Polk & Co., we estimate that 86 percent of passenger vehicles on the road have shoulder belts in the rear outboard seating positions. In the 14 percent of vehicles with only lap belts in the rear outboard seats, all rear-seat vehicle occupants would be counted by NOPUS as not using shoulder belts, regardless of whether they are using lap belts. Consequently the NOPUS rear-seat shoulder belt use estimates reflect both the degree to which vehicle occupants use restraints and the prevalence of shoulder belts in these seating positions.

Please also note rear-seat occupants might be underestimated in NOPUS because NOPUS only observes up to two passengers in the second row of seats and none in the third row and beyond.

The racial categories “Black,” “White,” and “Members of Other Races” appearing in the table reflect subjective characterizations by roadside observers regarding the race of vehicle occupants. Likewise observers recorded the age group (8-15 years; 16-24 years; 25-69 years; and 70 years or older) that best fit their visual assessment of each observed occupant.

At the time the 2007 survey was conducted, 19 States and the District of Columbia required all vehicle occupants 18 and older to use seat belts when riding in the rear seat.

The “conversion rate” is the percentage reduction in belt nonuse. This rate roughly reflects the percentage of belt nonusers in 2006 who were “converted” to using belts in 2007.

For More Information

Detailed analyses of the data in this publication, as well as additional data and information on the survey design and analysis procedures, will be available in upcoming publications to be posted at the Web site www-nrd.nhtsa.dot.gov/CMSWeb/index.aspx in 2008.

For more information on the campaign by NHTSA and the States to increase seat belt use, see www.nhtsa.gov/portal/site/nhtsa/menuitem.ce4a601cdf97fc239d17110cba046a0.

NOPUS also observes other types of restraints, such as motorcycle helmets and child restraints, and observes driver electronic device use. This publication is part of a series that presents overall results from the survey on these topics. Please see other members of the series such as “Motorcycle Helmet Use in 2007—Overall Results” for the latest data on these topics.



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