

# Traffic Safety Facts

## Research Note

DOT HS 810 677

November 2006

### Seat Belt Use in 2006 — Overall Results

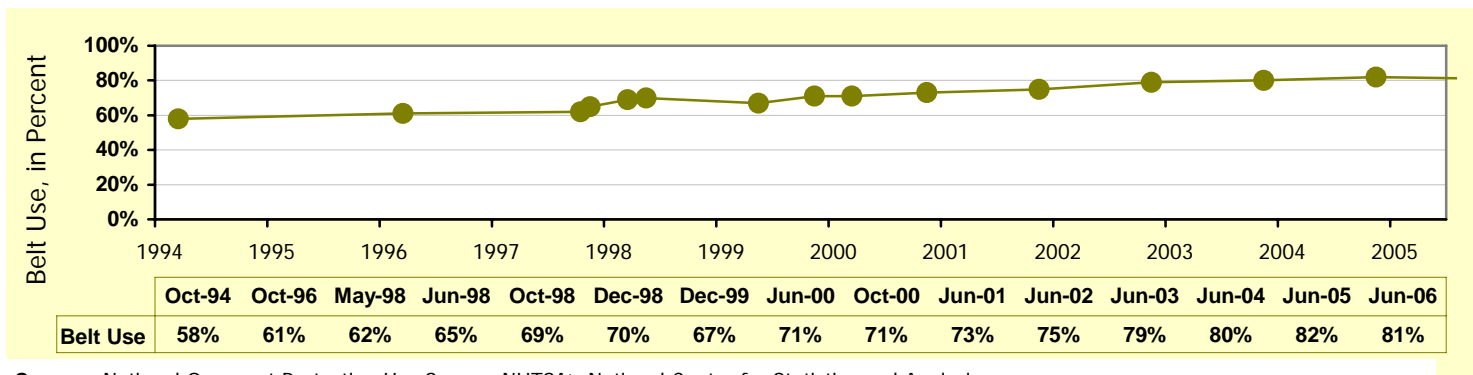
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In June 2006, seat belt use in the U.S. stands at 81 percent, statistically unchanged from the previous year's use rate of 82 percent. This result is from the National Occupant Protection Use Survey (NOPUS), which provides the only probability-based observed data on seat belt use in the United States. The NOPUS is conducted annually by the National Center for Statistics and Analysis of the National Highway Traffic Safety Administration.

The 2006 survey also found the following:

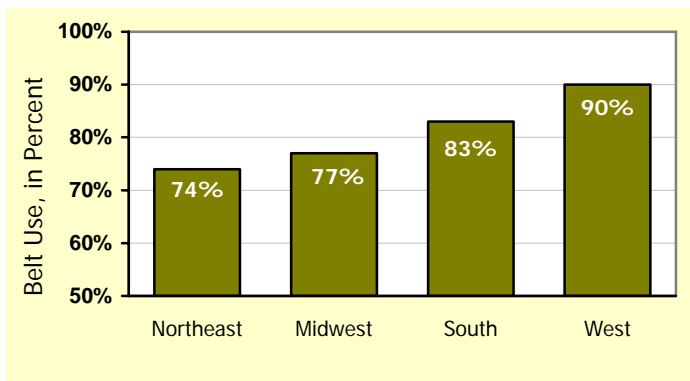
- Use in the West has achieved the 90 percent milestone, increasing from 85 percent in 2005. This increase was statistically significant.
- Use rates continue to be higher where laws are stronger. States in which motorists can be stopped solely for belt nonuse had a combined use rate of 85 percent in 2006, compared to 74 percent in other States.

### Seat Belt Use, 1994-Present



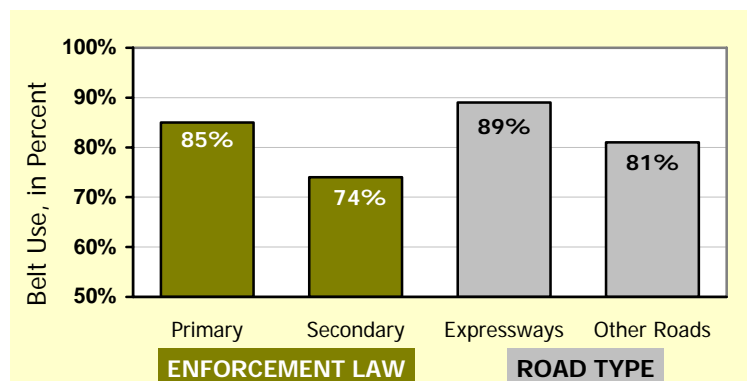
Source: National Occupant Protection Use Survey, NHTSA's National Center for Statistics and Analysis

### Seat Belt Use by Geographic Region



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

### Seat Belt Use by Ambient Enforcement Law and Road Type



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

## Seat Belt Use by Major Characteristics

Motorist Group <sup>1</sup>	2005		2006		2005-2006 Change		
	Belt Use <sup>2</sup>	Confidence That Use Is High or Low in Group <sup>3</sup>	Belt Use <sup>2</sup>	Confidence That Use Is High or Low in Group <sup>3</sup>	Change in Percentage Points	Confidence in a Change in Use <sup>4</sup>	Conversion Rate <sup>5</sup>
All Motorists	82%		81%		-1	19%	-6%
Drivers	83%	<b>100%</b>	82%	<b>97%</b>	-1	28%	-6%
Right-Front Passengers	78%	<b>100%</b>	78%	<b>97%</b>	0	3%	0%
Motorists in States with <sup>6</sup>							
Primary Enforcement Laws	85%	<b>100%</b>	85%	<b>100%</b>	0	4%	0%
Secondary Enforcement Laws	75%	<b>100%</b>	74%	<b>100%</b>	-1	17%	-4%
Motorists on							
Expressways	88%	<b>100%</b>	89%	<b>100%</b>	1	51%	8%
Surface Streets	81%	<b>100%</b>	81%	<b>100%</b>	0	11%	0%
Motorists Traveling in							
Fast Traffic	84%	<b>93%</b>	84%	<b>92%</b>	0	11%	0%
Medium-Speed Traffic	83%	85%	83%	<b>91%</b>	0	8%	0%
Slow Traffic	79%	<b>98%</b>	79%	<b>98%</b>	0	11%	0%
Motorists Traveling in							
Heavy Traffic	87%	88%	96%	<b>100%</b>	9		69%
Moderately Dense Traffic	86%	<b>93%</b>	85%	87%	-1	26%	-7%
Light Traffic	81%	<b>95%</b>	81%	<b>93%</b>	0	22%	0%
Motorists Traveling Through							
Light Precipitation	81%	64%	82%	74%	1	47%	5%
Light Fog	81%	58%	94%	<b>100%</b>	13	86%	68%
Clear Weather Conditions	82%	64%	81%	<b>97%</b>	-1	44%	-6%
Motorists in							
Passenger Cars	83%	<b>94%</b>	82%	86%	-1	32%	-6%
Vans and SUVs	85%	<b>100%</b>	84%	<b>97%</b>	-1	48%	-7%
Pickup Trucks	73%	<b>100%</b>	74%	<b>100%</b>	1	33%	4%
Motorists in the							
Northeast	78%	<b>91%</b>	74%	<b>100%</b>	-4	72%	-18%
Midwest	79%	<b>93%</b>	77%	<b>96%</b>	-2	70%	-10%
South	82%	69%	83%	89%	1	27%	6%
West	85%	84%	90%	<b>100%</b>	5	<b>98%</b>	33%
Motorists in							
Urban Areas	81%	61%	79%	70%	-2	21%	-11%
Suburban Areas	83%	<b>97%</b>	84%	<b>99%</b>	1	27%	6%
Rural Areas	79%	<b>97%</b>	78%	<b>98%</b>	-1	54%	-5%
Motorists Traveling During							
Weekdays	82%	52%	81%	63%	-1	28%	-6%
Weekday Rush Hours	83%	85%	83%	89%	0	2%	0%
Weekday Non-Rush Hours	81%	85%	80%	89%	-1	35%	-5%
Weekends	82%	52%	82%	63%	0	4%	0%

<sup>1</sup> Drivers and right-front passengers of passenger vehicles with no commercial or government markings.

<sup>2</sup> Use of shoulder belts observed between the hours of 8 a.m. and 6 p.m.

<sup>3</sup> The level of statistical confidence that use in the motorist group (e.g., motorists in urban areas) is higher or lower than use in the corresponding complementary motorist group (e.g., motorists in suburban and rural areas). 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.

<sup>4</sup> The degree of statistical confidence that the 2006 use rate is different from the 2005 rate.

<sup>5</sup> The "conversion rate" is the percentage reduction in belt nonuse. Negative conversion rates reflect a decrease in the estimated use rates.

<sup>6</sup> Use rates reflect the laws in effect at the time data was collected.

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 (NOPUS) 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 motorists in this country are buckling up.

The survey data is collected by sending trained observers to probabilistically sampled roadways, who observe vehicles between the hours of 8 a.m. and 6 p.m. Observations are made either while standing at the roadside or, in the case of expressways, while riding in a vehicle in traffic. Observers do not stop vehicles or interview occupants, so that the NOPUS captures the untainted behavior of motorists. The 2006 NOPUS data was collected between June 5 and June 26, while the 2005 data was collected between June 6 and June 25, 2005.

Because the NOPUS sites were chosen through probabilistic means, we can analyze the statistical significance of its results. Statistically significant increases in belt use between 2005 and 2006 are identified in the table "Seat Belt Use 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 motorist group, e.g., motorists in the Midwest, is higher or lower than in the complementary motorist group, e.g., motorists in the Northeast, South, and West, are provided in columns 3 and 5. Such comparisons are made within categories, such as road type, delineated by changes in row shading in the tables. The exception to this is the grouping "Motorists Traveling During ...," in which weekdays are compared to weekends, and weekday rush hour to weekday non-rush hour.

<b>Sites, Vehicles, and Motorists Observed</b>		
<b>Numbers of</b>	<b>2005</b>	<b>2006</b>
Sites Observed	1,996	1,878
Vehicles Observed	159,000	126,000
Occupants Observed <sup>1</sup>	207,000	162,000

<sup>1</sup> Drivers and right-front passengers only.

The NOPUS uses a complex multistage probability sample, statistical data editing, imputation of unknown values, and complex estimation and variance estimation procedures. The 2006 survey results reflect the partial incorporation of a new set of probabilistically-designed observation sites. Specifically, the 2006 survey utilized half of the observation sites from the previous survey years and half of the sites from the newly designed sample of observation sites. The 2005 data was obtained from the old observation sites only. See the NHTSA Technical Report referenced below for more information on these procedures.

Data collection, estimation, and variance estimation for the NOPUS are conducted by Westat, Inc., under the direction of the National Center for Statistics and Analysis in NHTSA under Federal contract number DTNH22-05-D-01002.

## Definitions

Under NOPUS observation protocols, a driver or right-front passenger is considered "belted" if a shoulder belt appears to be across the front of his/her body.

A jurisdiction that can enforce traffic laws, such as a State or the District of Columbia, has a "primary enforcement law" if motorists can be ticketed simply for not using their belts. Under a "secondary enforcement law" motorists must be stopped for another violation, such as an expired license tag, before being cited for belt nonuse. In June 2006, 24 States and the District of Columbia had primary laws, 25 had secondary laws, and 1 State (New Hampshire) had a law that applied only to those under the age of 18. Primary enforcement laws took effect in Alaska, South Carolina, and Mississippi in May 2006, December 2005, and May 2006, respectively. With the exception of these States, no other laws took effect during the period July 1, 2005 – June 30, 2006. A primary law took effect in Kentucky in July 2006, after the 2006 NOPUS survey was conducted.

The "conversion rate" is the percentage reduction in belt nonuse. This rate roughly reflects the percentage of belt nonusers in 2005 who were "converted" to using belts in 2006.

### States with Primary Enforcement Seat Belt Laws<sup>1</sup>

Alabama	Alaska	California
Connecticut	Delaware	Georgia
Hawaii	Illinois	Indiana
Iowa	Louisiana	Maryland
Michigan	Mississippi	New Jersey
New Mexico	New York	North Carolina
Oklahoma	Oregon	South Carolina
Tennessee	Texas	Washington

<sup>1</sup>States with laws in effect as of June 30, 2006. The District of Columbia also has a primary law. Under a primary enforcement law, motorists can be stopped and ticketed solely for not using seat belts.

"Expressways" are defined to be roadways with limited access, while "surface streets" comprise all other roadways. "Rush hour" is defined to comprise the time periods 8 – 10 a.m. and 3:30 – 6 p.m.

A roadway is defined to have "fast traffic" if during the observation period the average speed of passenger vehicles that passed the observer(s) exceeded 50 mph, with "medium-speed traffic" defined as 31 - 50 mph and "slow traffic" defined as 30 mph or slower.

A roadway is defined to have "heavy traffic" if the average number of vehicles per lane mile on the roadway during the observation period exceeded 45 vehicles per lane mile, with "moderately dense traffic" defined as 26 - 45 vehicles per lane per mile and "light traffic" having at most 25 vehicles per lane per mile.

### **For More Information**

For detailed analyses of the data in this publication, as well as additional data and information on the survey design and analysis procedures, see the upcoming publication, "Behavioral Traffic Safety Facts in 2006 – Seat Belt Use, Child Restraint Use, Motorcycle Helmet Use, and Driver Cell Phone Use," expected to be available at the Web site [www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/AvailInf.html](http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/AvailInf.html) in 2007.

For more information on the campaign by NHTSA and the States to increase seat belt use, see [www.buckleupamerica.org](http://www.buckleupamerica.org).

The NOPUS also observes other types of restraints, such as child restraints and motorcycle helmets, and observes driver cell phone 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 2006 – Overall Results," for the latest data on these topics.