

# Traffic Safety Facts

## Research Note

September 2004

DOT HS 809 783

# Safety Belt Use in 2004 – Overall Results

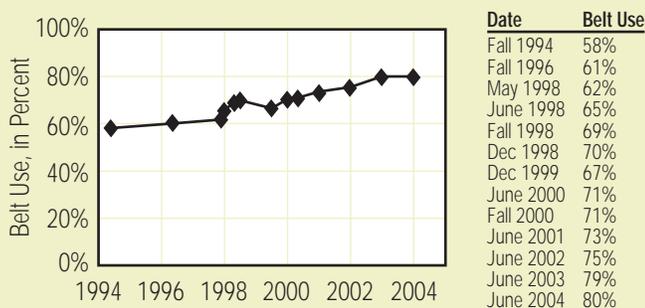
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In June 2004, safety belt use in the U.S. reached 80%, the highest level yet recorded. This result is from the National Occupant Protection Use Survey (NOPUS), which provides the only probability-based observed data on safety belt use in the United States. The NOPUS is conducted annually by the National Center for Statistics and Analysis in the National Highway Traffic Safety Administration (NHTSA).

The 2004 survey also found the following:

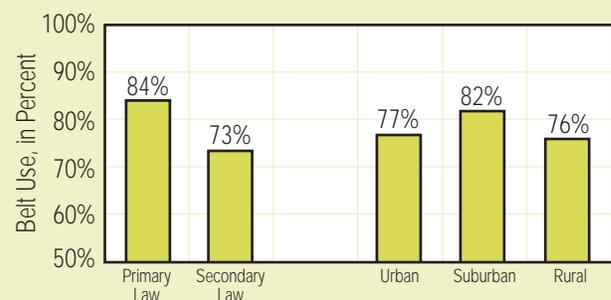
- The overall use rate of 80% was not statistically higher than the use rate in 2003 of 79%. However statistically significant increases in belt use occurred on expressways and in suburban areas.
- Belt use is statistically lower in States with secondary belt enforcement laws than in States with primary laws, and lower in rural areas than in urban or suburban areas.

### Safety Belt Use, 1994 — Present



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

### Safety Belt Use in 2004 by Law Type and Urbanization



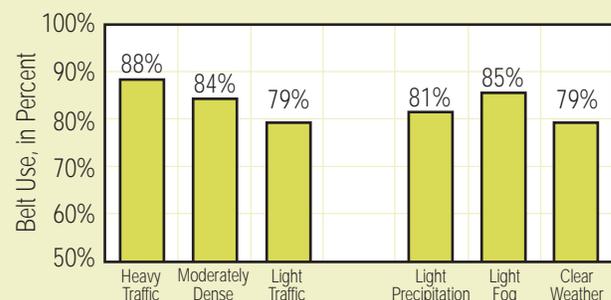
Source: National Occupant Protection Use Survey, National Center for Statistics and Analysis, NHTSA

### Safety Belt Use in 2004 by Road Type and Traffic Speed



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

### Safety Belt Use in 2004 by Traffic Density and Weather Conditions



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

## Safety Belt Use by Major Characteristics

Motorist Group <sup>1</sup>	2003		2004		2003-2004 Change		
	Belt Use <sup>2</sup>	Significantly High or Low Rates <sup>3</sup>	Belt Use <sup>2</sup>	Significantly High or Low Rates <sup>3</sup>	Change in Use	Confidence in a Change in Use <sup>4</sup>	Conversion Rate <sup>5</sup>
All Motorists	79%		80%		1%	25%	5%
Drivers	80%	H	81%	H	1%	46%	5%
Right Front Passengers	77%	L	76%	L	-1%	29%	-4%
Motorists in Jurisdictions with <sup>6</sup>							
Primary Enforcement Laws	83%	H	84%	H	1%	70%	6%
Secondary Enforcement Laws	75%	L	73%	L	-2%	82%	-8%
Motorists on							
Expressways	85%	H	88%	H	3%	99%	20%
Surface Streets	78%	L	79%	L	1%	44%	5%
Motorists Traveling in							
Fast Traffic	84%	H	85%	H	1%	66%	6%
Medium Speed Traffic	79%		82%	H	3%	77%	14%
Slow Traffic	76%	L	75%	L	-1%	24%	-4%
Motorists Traveling in							
Heavy Traffic	87%		88%	H	1%	12%	8%
Moderately Dense Traffic	83%	H	84%		1%	7%	6%
Light Traffic	79%	L	79%		0%	24%	0%
Motorists Traveling Through							
Light Precipitation	77%		81%		4%	82%	17%
Light Fog	92%	H	85%		-7%	54%	-88%
Clear Weather Conditions	79%		79%		0%	30%	0%
Motorists in							
Passenger Cars	81%	H	81%	H	0%	0%	0%
Vans & SUVs	83%	H	83%	H	0%	37%	0%
Pickup Trucks	69%	L	70%	L	1%	23%	3%
Motorists in the							
Northeast	74%	L	76%		2%	70%	8%
Midwest	75%	L	77%		2%	44%	8%
South	80%		80%		0%	27%	0%
West	84%	H	84%		0%	2%	0%
Motorists in							
Urban Areas	79%		77%		-2%	47%	-10%
Suburban Areas	81%		82%	H	1%	92%	5%
Rural Areas	74%		76%	L	2%	71%	8%
Motorists Traveling During							
Weekdays	78%		79%		1%	22%	5%
Rush Hours	79%		80%		1%	77%	5%
Non-Rush Hours	79%		77%		-2%	26%	-10%
Weekends	81%		82%		1%	37%	5%

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

<sup>2</sup> Use of shoulder belts between the hours of 8 AM and 6 PM.

<sup>3</sup> Rates flagged with an "H" or "L" are statistically high or low in their category at a 90% confidence level.

<sup>4</sup> The degree of statistical confidence that the 2004 use rate is different from the 2003 rate.

<sup>5</sup> The "conversion rate" is the percentage reduction in belt nonuse.

<sup>6</sup> The use rates here refer to the type of enforcement law in effect at the time the observations were made.

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

## Survey Methodology

The National Occupant Protection Use Survey (NOPUS) is the only probability-based observational survey of safety 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.

### Sites, Vehicles, and Motorists Observed

Numbers of	2003	2004	Percentage Increase
Sites Observed	2000	2000	0%
Vehicles Observed	162,000	146,000	-10%
Occupants Observed <sup>1</sup>	214,000	193,000	-10%

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

The survey data is collected by sending trained observers to probabilistically sampled roadways, who observe vehicles between the hours of 8 AM and 6 PM. 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 2004 NOPUS data were collected between June 7 and July 11, 2004, excluding the period July 2 – 5 inclusive, while the 2003 data were collected between June 2 and July 1, 2003.

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 2003 and 2004 are identified in the table “Safety Belt Use by Major Characteristics” by having a result that is 90% or greater in the table’s column 7. Significantly high and low levels of belt use, such as the lower use in rural areas than in more populated areas in 2004, are identified by H’s and L’s in columns 3 and 5.

The NOPUS uses a complex multi-stage probability sample, statistical data editing, imputation of unknown values, and complex estimation and variance estimation procedures. See the NHTSA Technical Report referenced at the end of this note for more information on these procedures.

Data collection, estimation, and variance estimation for the NOPUS are conducted by Westal, Inc. under the direction of the National Center for Statistics and Analysis in NHTSA under federal contract number DTNH22-00-D-07001.

## Definitions

A State, D.C., or Puerto Rico, 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 2003, 18 States had primary laws, 32 had secondary laws, and 1 State (New Hampshire) effectively has no belt law. (In New Hampshire, it is legal for motorists over age 18 to ride unbelted.) Primary enforcement laws took effect in Delaware and Illinois in July 2003, and in Tennessee in July 2004.

The “**conversion rate**” is the percentage reduction in belt nonuse. This rate roughly reflects the percentage of belt nonusers in 2003 who were “converted” to using belts in 2004.

“Expressways” are defined to be roadways with limited access, while “surface streets” comprise all other roadways.

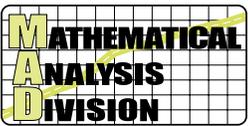
A roadway is defined to have “fast traffic” if during the observation period the average speed of passenger vehicles that passed the observer(s) exceeded 50 mph, with “medium speed traffic” defined as 31 - 50 mph and “slow traffic” defined as 30 mph or slower.

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 “Safety Belt Use in 2004 – Overall Analysis”, expected to be available at the web site <http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/AvailInf.html> in October 2004.

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 2004 – Overall Results”, and the corresponding NHTSA Technical Report “Motorcycle Helmet Use in 2004 – Analysis”, for the latest data on these topics.



U.S. Department of Transportation  
**National Highway Traffic Safety  
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