

Traffic Safety Facts

Research Note

DOT HS 811 044

September 2008

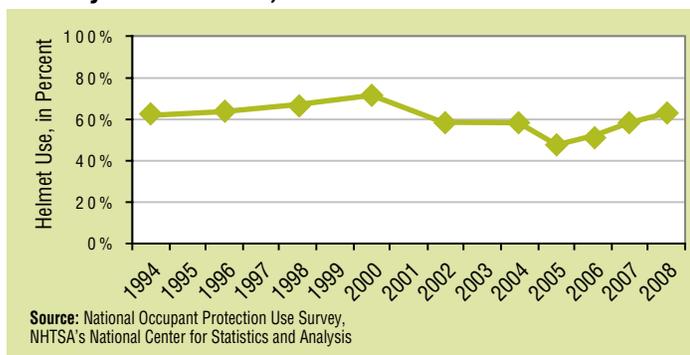
Motorcycle Helmet Use in 2008 - Overall Results

Use of DOT-compliant helmets in 2008 stood at 63 percent, a gain from 58 percent in 2007. This result is from the National Occupant Protection Use Survey (NOPUS), which provides the only nationwide probability-based observed data on helmet use¹ in the United States. The NOPUS is conducted by the National Center for Statistics and Analysis of the National Highway Traffic Safety Administration.

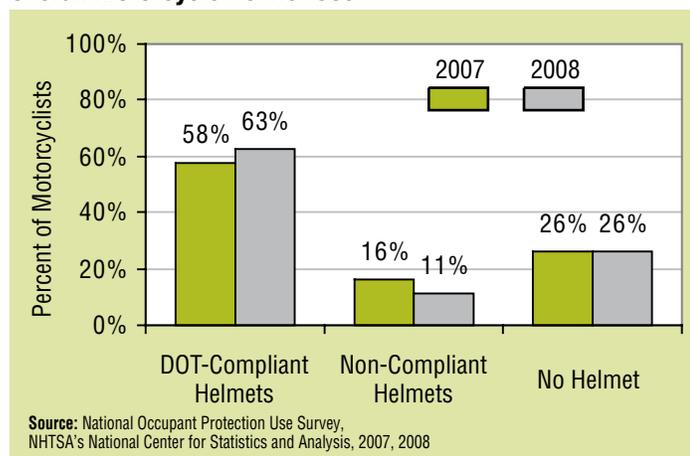
The 2008 survey also found the following:

- Non-DOT-compliant helmet use decreased by 5 percentage points to 11 percent in 2008. However, the percentage of unhelmeted motorcyclists remained unchanged at 26 percent.

Motorcycle Helmet Use, 1994 - Present

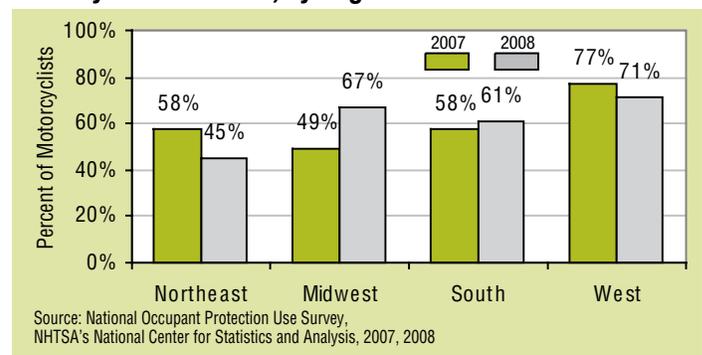


Overall Motorcycle Helmet Use

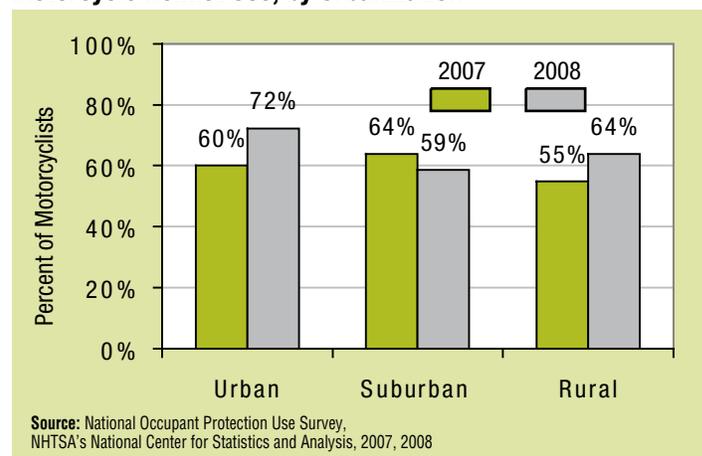


- Motorcycle helmet use (both DOT-compliant and non-DOT-compliant) continued to be higher in States that require all motorcyclists to wear helmets than in States that do not.
- Helmet use on expressways increased by 12 percentage points to 75 percent in 2008.
- In the Midwest helmet use increased by 18 percentage points to 67 percent, but helmet use was down 13 percentage points to 45 percent in the Northeast.
- Urban areas saw a 12-percentage-point increase in helmet use to 72 percent in 2008.

Motorcycle Helmet Use, by Region



Motorcycle Helmet Use, by Urbanization



¹ Throughout this Research Note, the term helmet use refers to the use of DOT-compliant motorcycle helmets unless otherwise stated.

Use of Helmets Compliant With Federal Safety Regulations, by Major Characteristics

Motorcyclist Group	2007		2008		2007-2008 Change	
	Helmet Use ¹	Confidence That Use Is High or Low in Group ²	Helmet Use ¹	Confidence That Use Is High or Low in Group ²	Change in Percentage Points	Confidence in a Change in Use ³
All Motorcyclists	58%		63%		5	58%
Riders	59%	69%	64%	99%	5	71%
Passengers	56%	69%	54%	99%	-2	17%
Motorcyclists in States Where ⁴						
Use Is Required for All Motorcyclists	74%	100%	78%	100%	4	57%
Other States	42%	100%	50%	100%	8	83%
Motorcyclists on						
Expressways	63%	85%	75%	99%	12	96%
Surface Streets	57%	85%	58%	99%	1	14%
Motorcyclists Traveling in						
Fast Traffic	54%	91%	72%	97%	18	99%
Medium-Speed Traffic	58%	51%	57%	83%	-1	15%
Slow Traffic	66%	95%	53%	89%	-13	79%
Motorcyclists Traveling in						
Heavy Traffic	NA		NA		NA	NA
Moderately Dense Traffic	71%	79%	86%	99%	15	63%
Light Traffic	58%	80%	62%	100%	4	51%
Motorcyclists in						
Light Precipitation	52%	74%	84%	99%	32	99%
Light Fog	NA		NA		NA	NA
Clear Weather Conditions	58%	51%	61%	99%	3	36%
Motorcycle Riders When						
They Are the Sole Motorcyclist	58%	75%	67%	98%	9	93%
They Have a Passenger	63%	75%	53%	98%	-10	64%
Motorcyclists in the						
Northeast	58%	51%	45%	100%	-13	96%
Midwest	49%	94%	67%	76%	18	95%
South	58%	51%	61%	65%	3	23%
West	77%	100%	71%	76%	-6	49%
Motorcyclists in						
Urban Areas	60%	61%	72%	95%	12	94%
Suburban Areas	64%	97%	59%	76%	-5	43%
Rural Areas	55%	95%	64%	59%	9	74%
Motorcyclists Traveling During						
Weekdays	62%	92%	71%	99%	9	97%
Weekday Rush Hours	68%	92%	71%	54%	3	35%
Weekday Non-Rush Hours	59%	92%	71%	54%	12	98%
Weekends	54%	92%	54%	99%	0	1%
Motorcycle Riders Who						
Are Riding Alone	58%	75%	67%	98%	9	93%
Have a Passenger Using a DOT-Compliant Helmet	83%	100%	82%	100%	-1	1%
Have a Passenger Using a Noncompliant Helmet	47%	86%	34%	94%	-13	54%
Have an Unhelmeted Passenger	32%	100%	9%	100%	-23	88%
Passengers on Motorcycles on Which						
The Rider Is Using a DOT-Compliant Helmet	73%	100%	84%	100%	11	69%
The Rider Is Using a Noncompliant Helmet	36%	92%	NA	NA	NA	NA
The Rider Is Unhelmeted	20%	100%	22%	100%	2	14%

¹ Use of helmets meeting the safety requirements of Federal Motor Vehicle Safety Standard 218, observed between 7 a.m. and 6 p.m. among motorcycle operators and passengers.

² The level of statistical confidence that use in the motorcyclist group (e.g., motorcyclists in urban areas) is higher or lower than use in the corresponding complementary motorcyclist group (e.g., motorcyclists 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.

³ The degree of statistical confidence that the 2008 use rate is different from the 2007 rate. Confidence levels that meet or exceed 90 percent are formatted in boldface type.

⁴ Use rates reflect the laws in effect at the time data was collected.

NA: Data not sufficient to produce a reliable estimate.

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

Use of Noncompliant Helmets, by Major Characteristics

Motorcyclist Group	2007		2008		2007-2008 Change	
	Helmet Use ¹	Confidence That Use Is High or Low in Group ²	Helmet Use ¹	Confidence That Use Is High or Low in Group ²	Change in Percentage Points	Confidence in a Change in Use ³
All Motorcyclists	16%		11%		-5	94%
Riders	15%	64%	9%	98%	-6	98%
Passengers	17%	64%	18%	98%	1	23%
Motorcyclists in States Where ⁴						
Use Is Required for All Motorcyclists	23%	100%	19%	100%	-4	60%
Other States	8%	100%	4%	100%	-4	94%
Motorcyclists on						
Expressways	20%	87%	11%	52%	-9	90%
Surface Streets	14%	87%	11%	52%	-3	74%
Motorcyclists Traveling in						
Fast Traffic	18%	84%	12%	79%	-6	84%
Medium-Speed Traffic	13%	83%	9%	88%	-4	79%
Slow Traffic	14%	64%	11%	53%	-3	49%
Motorcyclists Traveling in						
Heavy Traffic	NA		NA		NA	NA
Moderately Dense Traffic	NA		6%	84%	NA	NA
Light Traffic	16%	100%	11%	97%	-5	93%
Motorcyclists in						
Light Precipitation	18%	60%	12%	62%	-6	37%
Light Fog	NA		NA		NA	NA
Clear Weather Conditions	15%	64%	11%	62%	-4	93%
Motorcycle Riders When						
They Are the Sole Motorcyclist	16%	61%	9%	69%	-7	98%
They Have a Passenger	14%	61%	10%	69%	-4	63%
Motorcyclists in the						
Northeast	24%	95%	8%	69%	-16	100%
Midwest	14%	73%	16%	89%	2	33%
South	16%	60%	14%	77%	-2	40%
West	10%	85%	5%	96%	-5	71%
Motorcyclists in						
Urban Areas	17%	65%	5%	99%	-12	100%
Suburban Areas	13%	84%	11%	53%	-2	42%
Rural Areas	17%	77%	12%	75%	-5	71%
Motorcyclists Traveling During						
Weekdays	15%	70%	8%	96%	-7	99%
Weekday Rush Hours	14%	69%	9%	74%	-5	77%
Weekday Non-Rush Hours	15%	69%	8%	74%	-7	99%
Weekends	17%	70%	14%	96%	-3	53%
Motorcycle Riders Who						
Are Riding Alone	16%	61%	9%	69%	-7	98%
Have a Passenger Using a DOT-Compliant Helmet	9%	92%	NA		NA	NA
Have a Passenger Using a Noncompliant Helmet	50%	86%	49%	97%	-1	7%
Have an Unhelmeted Passenger	3%	100%	NA		NA	NA
Passengers on Motorcycles on Which						
The Rider Is Using a DOT-Compliant Helmet	12%	86%	12%	91%	0	8%
The Rider Is Using a Noncompliant Helmet	58%	100%	NA		NA	NA
The Rider Is Unhelmeted	NA		NA		NA	NA

¹ Use of helmets that do not meet the requirements of Federal Motor Vehicle Safety Standard 218, observed between 7 a.m. and 6 p.m. among motorcycle operators and passengers.

² The level of statistical confidence that use in the motorcyclist group (e.g., motorcyclists in urban areas) is higher or lower than use in the corresponding complementary motorcyclist group (e.g., motorcyclists 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.

³ The degree of statistical confidence that the 2008 use rate is different from the 2007 rate. Confidence levels that meet or exceed 90 percent are formatted in boldface type.

⁴ Use rates reflect the laws in effect at the time data was collected.

NA: Data not sufficient to produce a reliable estimate.

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

Survey Methodology

The NOPUS is the only nationwide probability-based observational survey of motorcycle helmet 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 helmet use in this country.

The survey data is collected by sending observers to a set of probabilistically sampled roadways, who observe motorcyclists between the hours of 7 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 motorcycles or interview motorcyclists, so that the NOPUS captures their unbiased behavior. 2008 NOPUS data was collected between June 2 and June 22, while the 2007 data was collected between June 4 and June 25, 2007.

Because the NOPUS sites were chosen through probabilistic means, we can analyze the statistical significance of its results. Statistically significant increases in helmet use between 2007 and 2008 are identified in the table “Use of Helmets Compliant With Federal Safety Regulation, by Major Characteristics” by having a result that is 90 percent or greater in that table’s column 7, and similarly for the subsequent table on the use of noncompliant helmets. Statistical confidence levels that use in a given motorcyclist group, e.g., motorcyclists in the Midwest, is higher or lower than the complementary motorcyclist group, e.g., motorcyclists 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 “Motorcyclists Traveling During ...,” in which weekdays are compared to weekends, and weekday rush hour to weekday non-rush hour.

Numbers of	2007	2008
Sites Observed	1,878	1,865
Motorcycles Observed	1,282	1,450
Motorcyclists Observed	1,534	1,698

The NOPUS uses a complex multistage probability sample, statistical data editing, imputation of unknown values, and complex estimation and variance estimation procedures. The 2008 NOPUS continued the transition to the newly designed sample of observation sites, which was implemented in 2006. The 2008 results reflect the partial incorporation of a set of observation

sites from the new design (about 60%) and a set of the observation sites from the old design (about 40%). Data from 2005 and prior years was obtained from the old observation sites only.

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 DTNH22-07-D-00057.

Definitions

NHTSA established standards for motorcycle helmets to ensure a certain degree of protection in a crash in Federal Motor Vehicle Safety Standard 218 (Code of Federal Register, Title 49, Volume 5, Part 571, Section 218, October 2003). DOT-compliant helmets are helmets that meet this safety standard, while noncompliant helmets are helmets that do not.

States With Laws¹ Requiring Helmet Use for All Motorcyclists

Alabama	Michigan	North Carolina
California	Mississippi	Oregon
District of Columbia	Missouri	Tennessee
Georgia	Nebraska	Vermont
Louisiana	Nevada	Virginia
Maryland	New Jersey	Washington
Massachusetts	New York	West Virginia

¹States and the District of Columbia with laws in effect as of June 30, 2008

DOT-compliant helmets are marked with an identifying sticker on the back of the helmets. However because of the prevalence of counterfeit stickers, NOPUS data collectors categorize DOT-compliant helmets as helmets that cover the motorcyclists’ ears or are at least 1 inch thick.

NHTSA estimates helmet use as the use of DOT-compliant helmets.

“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 7 – 9:30 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, with “moderately dense traffic” defined as 26 - 45 vehicles per lane mile and “light traffic” having at most 25 vehicles per lane mile.

The survey uses the following definitions of geographic regions, which are defined in terms of the States contained in the regions below:

Northeast: CT, MA, ME, NH, NJ, NY, PA, RI, VT

Midwest: IA, KS, IL, IN, MI, MN, MO, ND, NE, OH, SD, WI

South: AL, AR, DC, DE, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV

West: AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY

At the time the 2008 survey was conducted, 20 States and the District of Columbia required all motorcyclists to be helmeted. Other States either required only a subset of riders (operators) or motorcycle passengers to use helmets (such as those under age 18), or had no helmet requirement.

For More Information

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Additional data and information on the survey design and analysis procedures will be available in upcoming publications to be posted at the Web site <http://www-nrd.nhtsa.dot.gov/CMSWeb/index.aspx> in 2009.

Motorcycle helmets are 37-percent effective in preventing fatal injuries to motorcyclists and helmets saved the lives of 1,658 motorcyclists in 2006. (Traffic Safety Facts: 2006 Data, NHTSA, DOT HS 810806). For more information on the campaign by NHTSA and the States to raise helmet use, see www.nhtsa.gov.

The NOPUS also observes other types of restraints, such as seat belts and child restraints, 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 notes in the series, such as “Seat Belt Use in 2008 – Overall Results,” for the latest data on these topics.



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