

Traffic Safety Facts

Research Note

August 2005

DOT HS 809 937

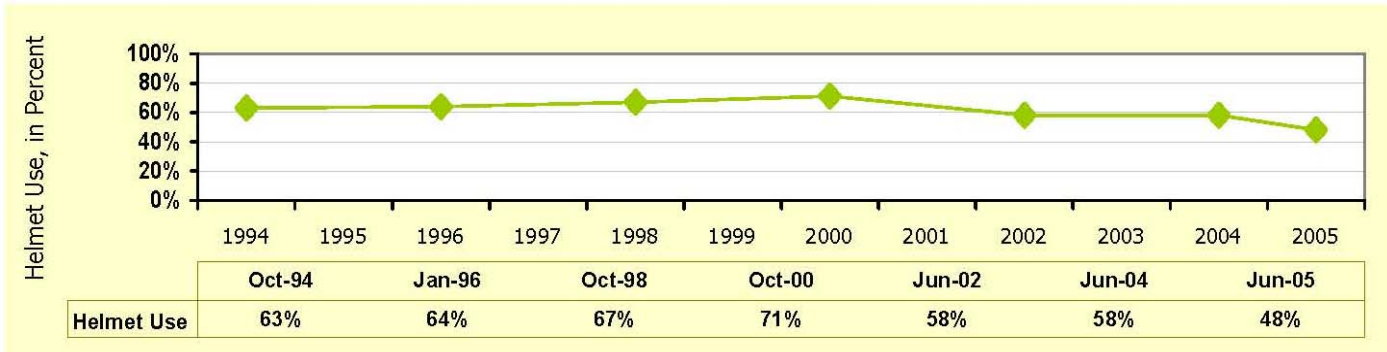
Motorcycle Helmet Use in 2005 – Overall Results

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In June 2005, 48 percent of motorcyclists in the U.S. used DOT-compliant helmets, a 10-point drop from the usage rate last year. This result is from the National Occupant Protection Use Survey (NOPUS), which provides the only probability-based observed data on helmet use in the United States. The NOPUS is conducted by the National Center for Statistics and Analysis of the National Highway Traffic Safety Administration (NHTSA). The 2005 survey also found the following:

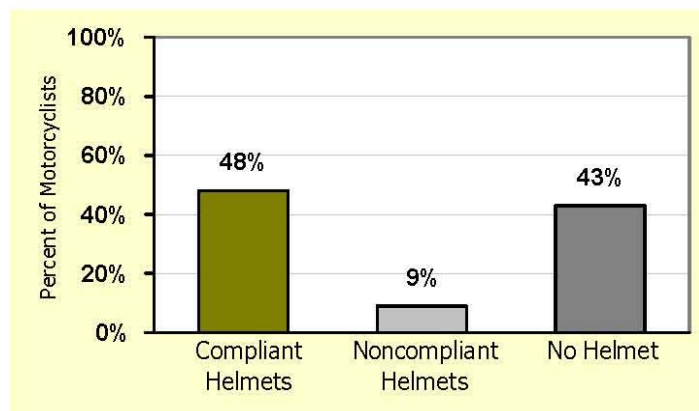
- The use of helmets that are not compliant with Federal safety regulations was 9 percent in 2005, statistically unchanged from the prior year. Such helmets include helmets with an insufficient coverage area or insufficient thickness to provide adequate protection in a crash.
- The drop in the use of DOT-compliant helmets occurred in States not requiring all motorcyclists to use helmets (a 10-point drop), and occurred on both expressways (a 9-point drop) and surface streets (a 10-point drop), among other categories.
- Use rates remain statistically lower in States that do not require all riders to use helmets. In 2005, 67 percent of motorcyclists in States requiring helmet use wore DOT-compliant helmets, compared to 38 percent in States not requiring all to use helmets.

Motorcycle Helmet Use, 1994 – Present



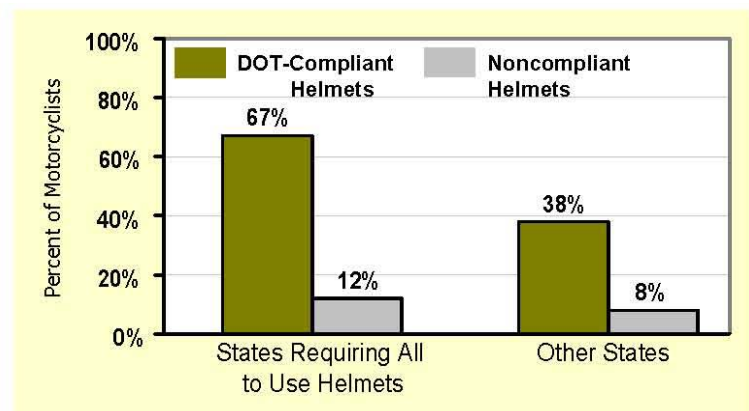
Source: National Occupant Protection Use Survey, NHTSA's National Center for Statistics and Analysis

Motorcycle Helmet Use, by Type of Helmet



Source: National Occupant Protection Use Survey, NHTSA's National Center for Statistics and Analysis, 2005

Motorcycle Helmet Use, by State Law and Helmet Type



Source: National Occupant Protection Use Survey, NHTSA's National Center for Statistics and Analysis, 2005

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

Motorcyclist Group	2004		2005		2004–2005 Change	
	Helmet Use ¹	Significantly High or Low Rates ²	Helmet Use ¹	Significantly High or Low Rates ²	Change in Percentage Points	Confidence in a Change in Use ³
All Motorcyclists	58%		48%		-10	93%
Operators	63%	H	56%	H	-7	87%
Passengers	41%	L	29%	L	-12	86%
Motorcyclists in States Where ⁴						
Use Is Required for All Motorcyclists	71%	H	67%	H	-4	43%
Other States	48%	L	38%	L	-10	97%
Motorcyclists on						
Expressways	65%		56%		-9	93%
Surface Streets	58%		48%		-10	92%
Motorcyclists Traveling in						
Fast Traffic	59%		57%		-2	20%
Medium Speed Traffic	58%		51%		-7	62%
Slow Traffic	58%		42%		-16	94%
Motorcyclists Traveling in						
Heavy Traffic	NA		NA		NA	
Moderately Dense Traffic	52%		62%		10	35%
Light Traffic	58%		48%		-10	92%
Motorcyclists in						
Light Precipitation	74%		66%	H	-8	40%
Light Fog	NA		NA		NA	
Clear Weather Conditions	57%		46%	L	-11	93%
Motorcycle Operators When						
They Are the Sole Rider	62%		60%		-2	31%
They Have a Passenger	66%		50%		-16	93%
Motorcyclists in the						
Northeast	57%		42%		-15	56%
Midwest	70%		53%		-17	83%
South	52%		49%		-3	25%
West	57%		50%		-7	81%
Motorcyclists in						
Urban Areas	70%		50%		-20	90%
Suburban Areas	55%		53%		-2	21%
Rural Areas	59%		43%		-16	88%
Motorcyclists Traveling During						
Weekdays	59%		46%		-13	90%
Weekday Rush Hours	57%		64%	H	7	76%
Weekday Nonrush Hours	60%		38%	L	-22	98%
Weekends	58%		54%		-4	27%
Operators of Motorcycles Who						
Are Riding Alone	62%		58%		-4	51%
Have a Passenger Using a DOT-Compliant Helmet	89%	H	93%	H	4	61%
Have a Passenger Using a Noncompliant Helmet	14%	L	25%	L	11	53%
Have an Unhelmeted Passenger	NA		39%	L	NA	
Passengers on Motorcycles on Which						
The Operator Is Using a DOT-Compliant Helmet	53%	H	56%	H	3	19%
The Operator Is Using a Noncompliant Helmet	8%	L	9%	L	1	17%
The Operator Is Unhelmeted	17%	L	4%	L	-13	94%

¹ Use of helmets meeting the safety requirements of Federal Motor Vehicle Safety Standard 218, observed between 8 a.m. and 6 p.m. among motorcycle operators and passengers.

² Rates flagged with an “H” or “L” are statistically high or low in their category at a 90 percent confidence level.

³ The degree of statistical confidence that the 2005 use rate is different from the 2004 rate.

⁴ Use rates reflect the law in effect at the time data were collected.

NA: Data not collected or 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	2004		2005		2004-2005 Change	
	Helmet Use ¹	Significantly High or Low Rates ²	Helmet Use ¹	Significantly High or Low Rates ²	Change in Percentage Points	Confidence in a Change in Use ³
All Motorcyclists	11%		9%		-2	54%
Operators	12%		9%		-3	81%
Passengers	8%		10%		2	36%
Motorcyclists in States Where ⁴						
Use Is Required for All Motorcyclists	16%	H	12%		-4	89%
Other States	6%	L	8%		2	31%
Motorcyclists on						
Expressways	14%		18%		4	45%
Surface Streets	11%		8%		-3	67%
Motorcyclists Traveling in						
Fast Traffic	9%		16%		7	79%
Medium Speed Traffic	12%		9%		-3	54%
Slow Traffic	11%		7%		-4	75%
Motorcyclists Traveling in						
Heavy Traffic	NA		NA		NA	
Moderately Dense Traffic	13%		16%		3	32%
Light Traffic	10%		9%		-1	42%
Motorcyclists in						
Light Precipitation	NA		5%		NA	
Light Fog	NA		NA		NA	
Clear Weather Conditions	11%	H	10%	H	-1	34%
Motorcycle Operators When						
They Are the Sole Rider	12%		9%		-3	61%
They Have a Passenger	12%		8%		-4	53%
Motorcyclists in the						
Northeast	10%		5%		-5	52%
Midwest	9%		8%		-1	12%
South	10%		12%		2	31%
West	14%		10%		-4	64%
Motorcyclists in						
Urban Areas	4%	L	13%		9	97%
Suburban Areas	14%		10%		-4	86%
Rural Areas	9%		8%		-1	36%
Motorcyclists Traveling During						
Weekdays	11%		10%	H	-1	6%
Weekday Rush Hours	10%		9%		-1	19%
Weekday Nonrush Hours	11%		11%		0	1%
Weekends	11%		5%	L	-6	97%
Operators of Motorcycles Who						
Are Riding Alone	12%		10%		-2	46%
Have a Passenger Using a DOT-Compliant Helmet	2%	L	3%	L	1	30%
Have a Passenger Using a Noncompliant Helmet	74%	H	52%	H	-22	65%
Have an Unhelmeted Passenger	NA		6%		NA	
Passengers on Motorcycles on Which						
The Operator Is Using a DOT-Compliant Helmet	2%	L	5%		3	86%
The Operator Is Using a Noncompliant Helmet	NA		58%	H	NA	
The Operator Is Unhelmeted	4%		8%		4	37%

¹ Use of helmets that do not meet the requirements of Federal Motor Vehicle Safety Standard 218, observed between 8 a.m. and 6 p.m. among motorcycle operators and passengers.

² Rates flagged with an "H" or "L" are statistically high or low in their category at a 90 percent confidence level.

³ The degree of statistical confidence that the 2005 use rate is different from the 2004 rate.

⁴ Use rates reflect the law in effect at the time data were collected.

NA: Data not collected or 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 National Occupant Protection Use Survey (NOPUS) is the only 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 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 motorcycles or interview motorcyclists, so that the NOPUS captures the untainted behavior of riders. The 2005 NOPUS data were collected between June 6 and June 25, while the 2004 data were collected between June 7 and July 11, 2004, excluding the period July 2 – 5.

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 2004 and 2005 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 the table's column 7, and similarly for the subsequent table on the use of noncompliant helmets. Significantly high and low levels of helmet use, such as the lower use in States that do not require all motorcyclists to use helmets, are identified by H's and L's 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 nonrush hour.

The NOPUS uses a complex multistage probability sample, statistical data editing, imputation of unknown values, and complex estimation and variance estimation procedures. 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 DTNH22-00-D-07001.

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.

DOT-compliant helmets are marked with an identifying sticker on the back of the helmet. However because of the prevalence of counterfeit stickers, NOPUS data collectors categorize DOT-compliant helmets as helmets that reach the bottom of the motorcyclist's 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.

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.

Sites, Motorcycles, and Motorcyclists Observed

Numbers of	2004	2005	Percentage Increase
Sites Observed	2,000	2,000	0%
Motorcycles Observed	1,300	1,300	0%
Motorcyclists Observed	1,600	1,700	6%

States with Laws¹ Requiring Helmet Use for All Motorcycle Riders¹

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, 2004. The exception is Louisiana, whose law took effect in August 2004. No additional States enacted such laws during the period June 30, 2004 – June 30, 2005.

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.

At the time the 2004 survey was conducted, 19 States and the District of Columbia required all motorcyclists to be helmeted. Other States either required only a subset of riders to use helmets (such as those under 18 years of age), or had no helmet requirement. Louisiana began requiring all motorcyclists to be helmeted beginning in August 2004.

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 "Motorcycle Helmet Use in 2005 – Overall Analysis," expected to be available at the Web site www-nrd.nhtsa.dot.gov/departments/nrd-30/nca/AvailInf.html later in 2005.

The NOPUS also observes other types of restraints, such as child restraints and safety belts, 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 "Child Restraint Use in 2005 – Overall Results," and the corresponding NHTSA Technical Report, "Child Restraint Use in 2005 – Analysis," for the latest data on these topics.