



Traffic Safety Facts 1998

Motorcycles



In 1998, 2,284 motorcyclists were killed and an additional 49,000 were injured in traffic crashes in the United States — 8 percent more than the 2,116 motorcyclist fatalities, but 7 percent less than the 53,000 motorcyclist injuries reported in 1997.

More than 100,000 motorcyclists have died in traffic crashes since the enactment of the Highway Safety and National Traffic and Motor Vehicle Safety Act of 1966.

Table 1. Motorcyclist Fatalities and Injuries and Fatality and Injury Rates, 1988-1998

Year	Fatalities	Registered Vehicles	Fatality Rate *	Vehicle Miles Traveled (millions)	Fatality Rate **
1988	3,662	4,584,284	8.0	10,024	36.5
1989	3,141	4,420,420	7.1	10,371	30.3
1990	3,244	4,259,462	7.6	9,557	33.9
1991	2,806	4,177,365	6.7	9,178	30.6
1992	2,395	4,065,118	5.9	9,557	25.1
1993	2,449	3,977,856	6.2	9,906	24.7
1994	2,320	3,756,555	6.2	10,240	22.7
1995	2,227	3,897,191	5.7	9,797	22.7
1996	2,161	3,871,599	5.6	9,920	21.8
1997	2,116	3,826,373	5.5	10,076	21.0
1998	2,284	--	--	--	--

Year	Injuries	Registered Vehicles	Injury Rate *	Vehicle Miles Traveled (millions)	Injury Rate **
1988	105,000	4,584,284	229	10,024	1,064
1989	83,000	4,420,420	189	10,371	805
1990	84,000	4,259,462	198	9,557	882
1991	80,000	4,177,365	193	9,178	876
1992	65,000	4,065,118	160	9,557	681
1993	59,000	3,977,856	149	9,906	600
1994	57,000	3,756,555	153	10,240	561
1995	57,000	3,897,191	147	9,797	587
1996	55,000	3,871,599	143	9,920	557
1997	53,000	3,826,373	137	10,076	522
1998	49,000	--	--	--	--

* Rate per 10,000 registered vehicles.

** Rate per 100 million vehicle miles traveled.

-- = not available.

Sources: Vehicle miles traveled and registered vehicles — Federal Highway Administration. Traffic deaths — Fatality Analysis Reporting System (FARS), NHTSA. Traffic injuries — General Estimates System (GES), NHTSA.

“NHTSA estimates that helmets saved 500 motorcyclists’ lives in 1998, and that 307 more could have been saved if all motorcyclists had worn helmets.”

For motorcyclists, the 1997 fatality rate per 10,000 registered vehicles was 33 percent lower than the 1987 rate (5.5 in 1997 and 8.3 in 1987), compared with a decrease of 15 percent for passenger car occupants over the same period (1.8 and 2.1 fatalities per 10,000 registered vehicles in 1997 and 1987, respectively). The fatality rate for motorcyclists per 100 million vehicle miles traveled declined by 51 percent (from 42.5 in 1987 to 21.0 in 1997), compared with a 23 percent decrease (from 1.9 to 1.5) in the corresponding fatality rate for passenger car occupants (1998 registered vehicle and vehicle miles traveled data not available).

Motorcycles made up less than 2 percent of all registered vehicles in the United States in 1997 and accounted for only 0.4 percent of all vehicle miles traveled.

Per vehicle mile traveled in 1997, motorcyclists were about 14 times as likely as passenger car occupants to die in a motor vehicle traffic crash and about 3 times as likely to be injured.

Per registered vehicle, the fatality rate for motorcyclists in 1997 was 3.2 times the fatality rate for passenger car occupants. The injury rate for passenger car occupants per registered vehicle was 1.3 times the injury rate for motorcyclists.

In 1998, motorcyclists accounted for 6 percent of total traffic fatalities, 6 percent of all occupant fatalities, and 2 percent of all occupants injured.

More than one-half (1,197) of all motorcycles involved in fatal crashes in 1998 collided with another motor vehicle in transport. In two-vehicle crashes, 78 percent of the motorcycles involved were impacted in the front. Only 6 percent were struck in the rear.

Motorcycles are more likely to be involved in a fatal collision with a fixed object than are other vehicles. In 1998, 30 percent of the motorcycles involved in fatal crashes collided with a fixed object, compared to 17 percent for passenger cars, 11 percent for light trucks, and 3 percent for large trucks.

Motorcycles are also more likely to be involved in an injury collision with a fixed object than are other vehicles. In 1998, 16 percent of the reported injury crashes involving motorcycles were fixed object crashes, compared to 9 percent for passenger cars, 9 percent for light trucks, and 5 percent for large trucks.

In 1998, there were 1,017 two-vehicle fatal crashes involving a motorcycle and another vehicle. In 36 percent (366) of these crashes the other vehicle was turning left while the motorcycle was going straight, passing, or overtaking the vehicle. Both vehicles were going straight in 248 crashes (24 percent).

“Per vehicle mile, motorcyclists are about 14 times as likely as passenger car occupants to die in a traffic crash.”

Almost half (43 percent) of all motorcyclist fatalities in 1998 resulted from crashes in seven states: 204 in California, 183 in Florida, 151 in Texas, 118 in Ohio, 111 in Pennsylvania, 108 in New York, and 99 in Illinois.

In 1998, 41 percent of all motorcyclists involved in fatal crashes were speeding, approximately twice the rate for drivers of passenger cars or light trucks. The percentage of alcohol involvement was more than 50 percent higher for motorcyclists than for drivers of passenger vehicles.

Licensing

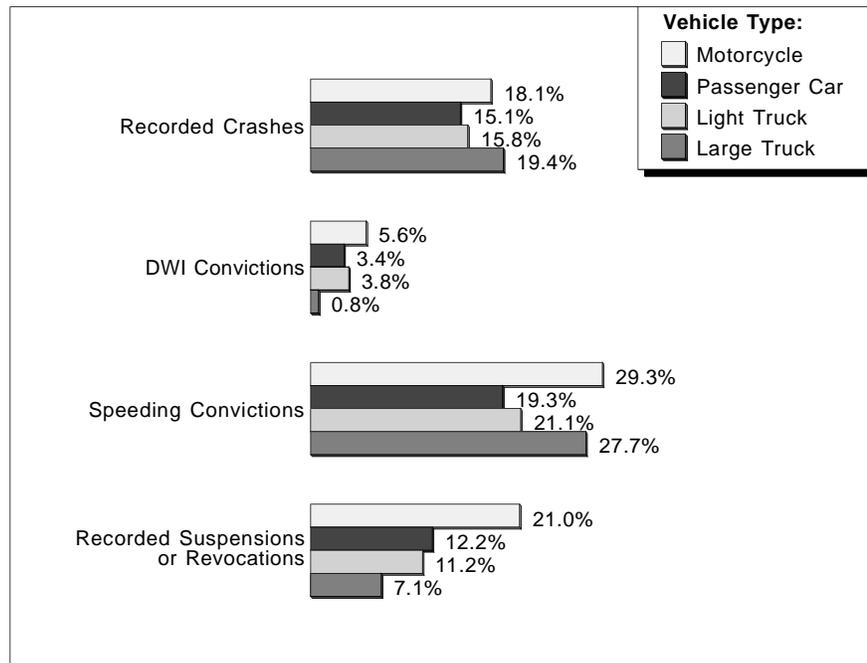
Nearly one out of five motorcycle operators (18 percent) involved in fatal crashes in 1998 were operating the vehicle with an invalid license at the time of the collision, while only 11 percent of drivers of passenger vehicles in fatal crashes did not have a valid license.

Motorcycle operators involved in fatal traffic crashes were nearly twice as likely as passenger vehicle drivers to have a previous license suspension or revocation (21 percent and 12 percent, respectively).

Almost 6 percent of the motorcycle operators involved in fatal crashes in 1998 had at least one previous conviction for driving while intoxicated on their driver records, compared to about 4 percent of passenger vehicle drivers.

“Nearly one out of five motorcycle operators in fatal crashes in 1998 were operating the vehicle with an invalid license.”

Figure 1. Previous Driving Records of Drivers Involved in Fatal Traffic Crashes, by Type of Vehicle, 1998



Alcohol

Motorcycle operators involved in fatal crashes in 1998 had higher intoxication rates, with blood alcohol concentrations (BAC) of 0.10 grams per deciliter (g/dl) or greater, than any other type of motor vehicle driver. Intoxication rates for vehicle operators involved in fatal crashes were 31 percent for motorcycles, 20 percent for light trucks, 18 percent for passenger cars, and 1 percent for large trucks.

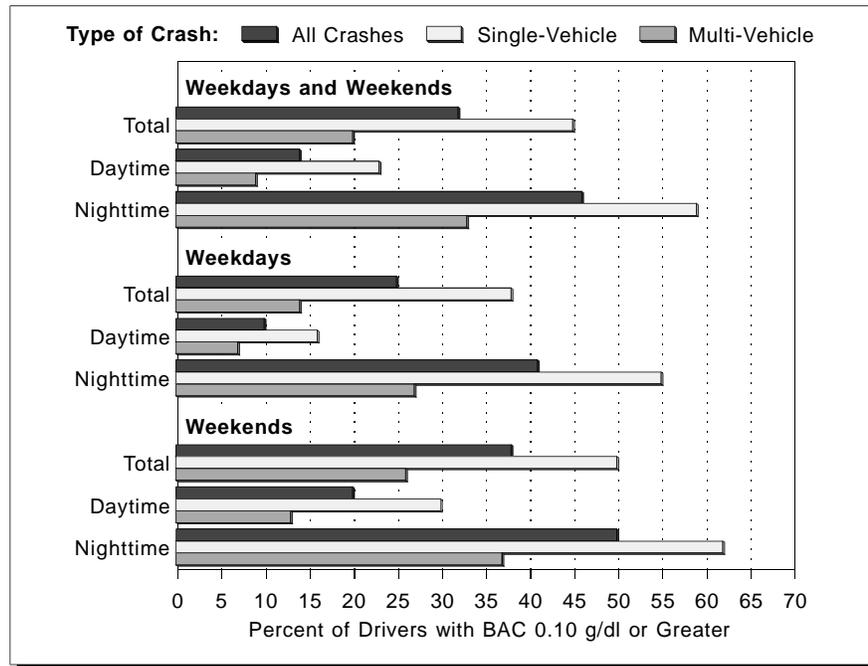
In 1998, 32 percent of all fatally injured motorcycle operators were intoxicated (BAC 0.10 g/dl or greater). An additional 9 percent had lower alcohol levels (BAC 0.01 to 0.09 g/dl). The intoxication rate was highest for fatally injured operators between 40 and 44 years old (42 percent) and ages 35 to 39 (42 percent), followed by ages 30 to 34 (38 percent).

Almost half (45 percent) of the 954 motorcycle operators who died in single-vehicle crashes in 1998 were intoxicated. Three-fifths (62 percent) of those killed in single-vehicle crashes on weekend nights were intoxicated.

Motorcycle operators killed in traffic crashes at night were 3 times as likely to be intoxicated as those killed during the day (46 percent and 14 percent, respectively).

The reported helmet use rate for intoxicated motorcycle operators killed in traffic crashes was 46 percent, compared with 59 percent for those who were sober.

Figure 2. Intoxication Rates for Motorcycle Operators Killed in Traffic Crashes, by Time of Day, 1998



“Almost half of the motorcycle operators who died in single-vehicle crashes in 1998 were intoxicated.”

“In 1998, motorcycle operators in fatal crashes had higher intoxication rates than any other type of driver.”

Helmets

NHTSA estimates that helmets saved the lives of 500 motorcyclists in 1998. If all motorcyclists had worn helmets, an additional 307 lives could have been saved.

Helmets are estimated to be 29 percent effective in preventing fatal injuries to motorcyclists.

Helmets cannot protect the rider from most types of bodily injuries. However, a recent NHTSA study showed that motorcycle helmets are 67 percent effective in preventing brain injuries. (Source: *1996 Crash Outcome Data Evaluation System (CODES): Report to Congress on Benefits of Safety Belts and Motorcycle Helmets.*)

According to NHTSA's National Occupant Protection Use Survey, a nationally representative observational survey of motorcycle helmet, safety belt, and child safety seat use, helmet use was 67 percent in 1998. According to previous NHTSA surveys, helmet use was reported to be essentially 100 percent at sites with helmet use laws governing all motorcycle riders, as compared to 34 to 54 percent at sites with no helmet use laws or laws limited to minors.

Reported helmet use rates for fatally injured motorcyclists in 1998 were 54 percent for operators and 45 percent for passengers, compared with 57 percent and 49 percent, respectively, in 1997.

All motorcycle helmets sold in the United States are required to meet Federal Motor Vehicle Safety Standard 218, the performance standard which establishes the minimum level of protection helmets must afford each user.

In 1998, 22 states, the District of Columbia, and Puerto Rico required helmet use by all motorcycle operators and passengers. In another 25 states, only persons under a specific age, usually 18, were required to wear helmets. Three states had no laws requiring helmet use.

NHTSA estimates that \$12.1 billion was saved from 1984 through 1998 because of the use of motorcycle helmets. An additional \$10.4 billion would have been saved if all motorcyclists had worn helmets.

“Helmets are estimated to be 29 percent effective in preventing fatal injuries to motorcyclists.”

For more information:

Information on motorcycle traffic fatalities is available from the National Center for Statistics and Analysis, NRD-31, 400 Seventh Street, S.W., Washington, D.C. 20590. NCSA information can also be obtained by telephone or by fax-on-demand at 1-800-934-8517. FAX messages should be sent to (202) 366-7078. General information on highway traffic safety can be accessed by Internet users at <http://www.nhtsa.dot.gov/people/nrsa>. To report a safety-related problem or to inquire about motor vehicle safety information, contact the Auto Safety Hotline at 1-800-424-9393.

Table 2. 1998 Motorcyclist Fatalities and 1997 Fatality Rates by State

State	1998			1997	
	Total Traffic Fatalities	Motorcyclist Fatalities	Percent of Total	Registered Vehicles (thousands)	Motorcyclist Fatalities per 10,000 Registered Vehicles
Alabama ^a	1,071	34	3.2	37	9.2
Alaska ^b	71	5	7.0	13	3.8
Arizona ^b	980	60	6.1	72	8.3
Arkansas ^b	625	28	4.5	16	17.5
California ^a	3,494	204	5.8	526	3.9
Colorado ^c	628	56	8.9	94	6.0
Connecticut ^b	329	41	12.5	48	8.5
Delaware ^d	115	6	5.2	10	6.0
District of Columbia ^a	54	5	9.3	2	25.0
Florida ^a	2,824	183	6.5	203	9.0
Georgia ^a	1,569	66	4.2	73	9.0
Hawaii ^b	120	21	17.5	25	8.4
Idaho ^b	265	6	2.3	34	1.8
Illinois ^c	1,393	99	7.1	171	5.8
Indiana ^b	978	69	7.1	97	7.1
Iowa ^c	449	28	6.2	132	2.1
Kansas ^b	493	19	3.9	49	3.9
Kentucky ^e	858	32	3.7	37	8.6
Louisiana ^a	922	35	3.8	37	9.5
Maine ^f	192	15	7.8	27	5.6
Maryland ^a	606	35	5.8	38	9.2
Massachusetts ^a	406	33	8.1	91	3.6
Michigan ^a	1,367	56	4.1	150	3.7
Minnesota ^b	650	41	6.3	116	3.5
Mississippi ^a	948	18	1.9	30	6.0
Missouri ^a	1,169	28	2.4	54	5.2
Montana ^b	237	14	5.9	21	6.7
Nebraska ^a	315	6	1.9	19	3.2
Nevada ^a	361	13	3.6	22	5.9
New Hampshire ^b	128	17	13.3	52	3.3
New Jersey ^a	743	32	4.3	92	3.5
New Mexico ^b	424	21	5.0	32	6.6
New York ^a	1,498	108	7.2	136	7.9
North Carolina ^a	1,596	83	5.2	68	12.2
North Dakota ^b	92	3	3.3	16	1.9
Ohio ^g	1,422	118	8.3	220	5.4
Oklahoma ^b	755	25	3.3	59	4.2
Oregon ^a	538	25	4.6	61	4.1
Pennsylvania ^a	1,481	111	7.5	179	6.2
Rhode Island ^h	74	5	6.8	17	2.9
South Carolina ^b	1,002	73	7.3	39	18.7
South Dakota ^b	165	9	5.5	25	3.6
Tennessee ^a	1,216	42	3.5	79	5.3
Texas ⁱ	3,577	151	4.2	149	10.1
Utah ^b	350	14	4.0	23	6.1
Vermont ^a	104	4	3.8	18	2.2
Virginia ^a	935	42	4.5	58	7.2
Washington ^a	660	51	7.7	104	4.9
West Virginia ^a	354	21	5.9	16	13.1
Wisconsin ^b	714	65	9.1	170	3.8
Wyoming ^b	154	8	5.2	15	5.3
U.S. Total	41,471	2,284	5.5	3,871	5.9
Puerto Rico	558	27	4.8	--	--

Status of state motorcycle helmet use requirements (as of July 1998): ^aRequired for all riders. ^bRequired for riders under 18 years old. ^cNo helmet use requirement. ^dRequired for riders under 19 years old; helmets must be in possession of other riders, but use is not required. ^eRequired for riders under 21 years old, riders operating with instruction permit, novices (first-year operators), and/or riders without proof of health insurance to county. ^fRequired for riders under 15 years old, novices, and holders of learner's permits. ^gRequired for riders under 18 years old and novices. ^hRequired for riders under 21 years old and novices (first-year operators). ⁱRequired for riders 20 and under and those who have not completed a rider training course or who do not have \$10,000 medical insurance coverage. Notes: 1998 registered vehicle data not available. Totals may not equal sum of components due to independent rounding. Sources: Fatalities — Fatality Analysis Reporting System, NHTSA. Registered vehicles — FHWA.