HELMET LAW FACTS

By Warren Woodward, Chair, State Legislative Committee
Street Bikers United Hawaii, 2007

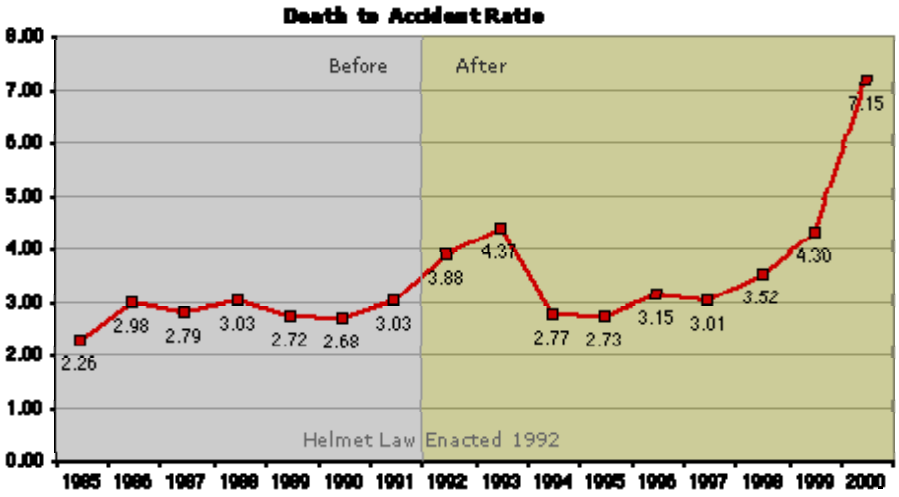
If helmets have significant safety benefits, then the ratio of deaths to accidents should decline as the use of helmets increases, such as after a mandatory helmet law is enacted. Yet in most states the Death to Accident Ratio (DAR) averages between 2% to 3% both **before *and* after** helmet laws have been enacted.

Below is a table prepared from information supplied by the Maryland Department of Transportation for the years 1985 to 2000.

	Year	Accidents	Deaths	DAR
Before Helmet Law	1985	3,182	72	2.26%
	1986	2,823	84	2.98%
	1987	2,328	65	2.79%
	1988	2,010	61	3.03%
	1989	1,693	46	2.72%
	1990	1,714	46	2.68%
	1991	1,752	53	3.03%
Total Accidents		15,502		
Total Deaths			427	
Death Accident Ratio before Helmet Law				**2.75%**

	Year	Accidents	Deaths	DAR
After Helmet Law (1992)	**1992**	1,417	55	3.88%
	1993	985	43	4.37%
	1994	1,083	30	2.77%
	1995	989	27	2.73%
	1996	889	28	3.15%
	1997	898	27	3.01%
	1998	966	34	3.52%
	1999	1,070	46	4.30%
	2000	727	52	7.15%
Total Accidents		9,024		
Total Deaths			342	
Death Accident Ratio after Helmet Law				**3.79%**

The Maryland data looked at another way:



Maryland is not an isolated case. Here is a table of total motorcyclist fatalities nationwide in 1994 (data from the Motorcycle Industry Council). Note the similarities in the DAR at the right of the table.

	Registrations	Reported Accidents	Fatalities	Accidents per 10,000 Registrations	Fatalities per 100 Accidents
Mandatory Helmet Use	2,352,293	52,270	1,557	222.21	2.98
Voluntary Helmet Use	1,497,923	29,062	844	194.02	2.90
Totals	3,850,216	81,331	2,401	211.24	2.95

Another example is from California before and after their helmet law enactment on January 1, 1992 (data from CHP). Note that the Death to Accident Ratio is little changed. If helmets worked, there should be a dramatic decrease in the DAR for years 1992 & 1993, but there isn't.

	1990	1991	1992	1993
Fatalities	565	509	328	302
Accidents	20,386	18,402	13,708	12,269
DAR	2.896	2.896	2.496	2.596

Note that the *total number* of accidents and deaths in both Maryland and California *did* decline after helmet law enactment. This is what helmet law proponents always point to as proof that "helmet laws save lives". What they

inevitably fail to mention is that this overall decrease has been accomplished, not because of helmets (which are incapable of preventing accidents), but because many people simply quit riding. Fewer riders = fewer accidents = fewer deaths.

Look at the dramatic decline in motorcycle registrations in California—a state with great roads and great weather—after their helmet law went into effect in 1992.

California Motorcycle Registrations 1991 - 99

Year	Annual	Year to Year	%	1991 to Year	%
1991	639,388	-	-	-	-
1992	583,222	-56,166	-8.78%	-56,166	-8.78%
1993	557,986	-25,236	-3.95%	-81,402	-12.73%
1994	527,666	-30,320	-4.74%	-111,722	-17.47%
1995	518,120	-9,546	-1.49%	-121,268	-18.97%
1996	511,637	-6,483	-1.01%	-127,751	-19.98%
1997	391,080	-120,557	-18.86%	-248,308	-38.84%
1998	397,032	5,952	0.93%	-242,356	-37.90%
1999	413,676	16,644	2.60%	-225,712	-35.30%

Source: California Department of Motor Vehicles

In other states, new motorcycle sales dropped 41% in Nebraska, 36% in Oregon, and 20% in Texas in the first full year following enactment of their mandatory helmet laws.

Conversely, when states remove mandatory helmet laws, registrations soar. Helmet law proponents constantly point to Florida's increase in motorcyclists' fatalities after helmet law repeal in that state in 2000, yet never mention the fact that, in the first seven years after repeal, motorcycle registrations increased by a whopping 157% !

Speaking of Florida, below are the Florida Department of Highway Safety and Motor Vehicles' motorcycle accident statistics for 2005.

	No Injury	%	Possible Injury	%	Non-Incapac-itating Injury	%	Incapac-Itating Injury	%	Fatal	%	Injury Not Stated	%	Total
With Helmet													
Driver	392	47.75	812	49.57	2,069	53.55	1,313	50.27	252	52.83	0	0.00	4,838
Passenger	44	5.36	88	5.37	185	4.79	129	4.94	20	4.19	0	0.00	466
SUBTOTAL	436	53.11	900	54.95	2,254	58.33	1,442	55.21	272	57.02	0	0.00	5,304
Without Helmet													
Driver	307	37.39	630	38.46	1,415	36.62	1,019	39.01	189	39.62	0	0.00	3,560
Passenger	78	9.50	94	5.74	187	4.84	149	5.7	16	3.35	0	0.00	524
SUBTOTAL	385	46.89	724	44.2	1,602	41.46	1,168	44.72	205	42.98	0	0.00	4,084
Helmet Use Not Stated													
Driver	0	0.00	14	0.85	8	0.21	2	0.08	0	0.00	3	100.0	27
Passenger	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
SUBTOTAL	0	0.00	14	0.85	8	0.21	2	0.08	0	0.00	3	100.0	27
TOTAL	821	100	1,638	100	3,864	100	2,612	100	477	100	3	100	9,415

Note that riders without helmets have the better numbers across the board. *Percentages of injuries and fatalities are less for riders involved in accidents who aren't wearing helmets.*

The following is an economic impact report for the first seven years after Florida's repeal. The registrations are compiled from the Florida Department of Highway Safety and Motor Vehicles. The registration and title fees come from the Florida License and Registration Bureau. From 1999 to April 2007, Florida motorcycle registrations went from 198,601 to 509,036, a 157% increase.

310,435 motorcycles at an average of $10,000 each	3,104,350,000
Sales tax on Motorcycles at 6%	186,626,100
Registration Fees and Tags for Motorcycles	11,330,877
Change of title	9,235,441
Total	**$3,311,542,418**

This is over ***three billion dollars*** in seven years that has been put into the economy of the State of Florida. Over ***two hundred million dollars*** went directly into the Florida State Treasury. This does not include the tourist money that has increased because of Florida being a freedom of choice state.

According to the Daytona Beach Chamber of Commerce, in the past seven years almost ***four billion dollars*** has been spent at Bike Week and Biketoberfest.

Motorcyclists being labeled a “public burden” therefore, is particularly irksome and has at its basis ignorance and prejudice.

According to the National Center for Health Statistics, approximately 1.16% of total U.S. Health costs are attributable to motor vehicle accidents, and the costs associated with the treatment of motorcyclist injuries account for *less than 0.001%* of total U.S. health care costs. Only a portion of that *less-than-0.001%* cost is attributable to un-helmeted motorcyclists, and the majority of that cost is paid by privately purchased health insurance. What remains, spread across the taxpayer base (which includes millions of taxpaying motorcyclists), is insignificant.

People who don’t ride, and especially the media reporters among them, persist in portraying un-helmeted motorcyclists as, at best, freedom-loving souls who ‘like the wind in their hair’. While we would hope freedom is important to all, having ‘the wind in our hair’ is not what’s it all about.

No one knows our safety better than we do. Some feel safer in a helmet; others do not. Helmets can help in some situations and maim and kill in others. This is why riders lobby for freedom of choice, and why our slogan is “Let Those Who Ride Decide”.

It took the deaths of several high-profile racecar drivers culminating with Dale Earnhardt in 2001 for NASCAR and Formula 1 to realize what motorcycle riders have been saying for years: Helmets snap necks and cause basal skull fracture which almost always results in instantaneous death. NASCAR and Formula 1 now require helmet restraining devices for drivers, an impossibility on motorcycles.

Due to the laws of physics, a 4 pound helmet, at 50 mph, weighs 200 pounds at impact. Motorcycle racers generally do not “impact”, having a closed course with little or nothing to run into if they fall. Street riders on the other hand have all kinds of objects to collide with if they come off. The body can stop abruptly then, but the head, because of the added weight of the helmet, can keep going causing neck breakage and basal skull fracture.

Unfortunately, most government studies do not look for this occurrence and so it has gone unnoticed among policy makers. As I mentioned, NASCAR and Formula 1 were very slow to realize the danger and did not call for helmet restraints until recently. There is one study from New York State however, which although old, tells the story.

The New York Department of Motor Vehicles did a study in 1969 comparing accident data from the years 1966 and 1967 in order to detect the effects of that state’s mandatory helmet law, which became effective Jan. 1, 1967.

They found that while head injuries decreased after the helmet law, **neck injuries increased.**

Injuries Sustained by Motorcycle Occupants Killed		
Injury	1966 Fatalities	1967 Fatalities
Head - fracture, bleeding wound, concussion	75.4%	45.9%
Neck - fracture, broken	5.8%	37.8%

Another interesting finding of that study is revealed in the following table. Note that the Death to Accident Rate (DAR) is exactly the same **before *and* after** the helmet law. Again, if helmets "save lives", shouldn't there have been a marked decrease in the DAR?

Frequency Of Motorcycle Accidents				
	1966		**1967**	
Severity	Number	% of Total	Number	% of Total
Fatal	85	**1.6**	51	**1.6**
Personal Injury	4,792	92.4	2,983	94.4
Property Damage	307	5.9	127	4.0
Total	5,184	100.0	3,161	100.0

To summarize, helmet laws succeed in preventing deaths only by decreasing riders. Helmet laws may decrease head injuries in some instances but increase neck injuries in others. Riders know the risks inherent in riding and must be free to choose whether or not to wear a helmet.

Postscript: The best safety solution is accident avoidance. This can be accomplished through increased driver awareness of motorcyclists and through motorcycle rider safety training.

A study of motorcycle accidents (the Hurt Report) found that in multiple vehicle accidents involving motorcycles, the driver of the other vehicle violated the motorcycle right-of-way and caused the accident in *two-thirds* of these accidents. Drivers must be taught to look for motorcycles. Right-of-way violations, especially those resulting in injury and death, must have consequences greater than a slap on the wrist.

States with the best overall safety record for motorcyclists also have comprehensive rider education courses in place. Evidence to the value of safety programs comes from the fact that in California, their award winning safety program accounted for a 43% decrease in fatalities and a 40% decrease in injuries from 1986 through 1991, before the helmet law was in effect. The decrease in injuries alone amounted to 12,258.

Addendum 1: Testimony of Shannon Laughy - Reproduced below is an official transcript of testimony given by Shannon Laughy, a rider paralyzed by a helmet, before the California Senate Transportation Committee on May 7, 1996, when repeal of that state's mandatory helmet law was being discussed. I was there to witness her deliver her testimony from the wheelchair to which she is permanently confined. Read her testimony and see if you could look her in the eye and tell her she should have to wear a helmet.

Shannon Laughy: My name is Shannon Laughy and I'm one of your statistics.

I am an orthopedic technician. I was trained by the U. S. military during the Viet Nam War. I served in Plei Ku in 1969.

Senator Kelley: Could you speak a little closer to the microphone?

Shannon Laughy: I served in Ku Che for an additional year in 1970. By the time I got out of the military, I was discharged in Washington State. I practiced medicine as a general surgery technician up there working on cardiac and orthopedic cases.

I came to the bay area in 1973. I started working with the San Francisco Orthopedic Residency program in San Francisco and ultimately ended up at Kaiser Hospital in San Rafael.

On September 30th, I joined your statistics, because as a motorcyclist I had been riding since the age of three. My father was compulsive about safety and so I have always worn a helmet. I was so compulsive that in Los Angeles, because the ozone depletion of my helmet and sun damage, every two years I backed over my helmet and destroyed it myself and replaced it with another DOT or Snell approved helmet.

At the time of my accident, it was 5:29 in the afternoon. We were traveling in a direction that has no sun glare involved. I was in a school zone so I knew I was doing 24 miles an hour. And a woman made a left turn in front of me. I slammed on both front and rear brakes and tried to swing my bike to the left in the hopes that the wheels would hit first. Unfortunately the wheels didn't hit first, I did.

From the shoulder down I impacted at the passenger's side door. My body ended up laid across this lady's back trunk. My helmet, which weighs a little over four pounds since it was a Shoei complete full-face helmet, it continued moving at 24 miles an hour when my body stopped against that car, and the right side leading edge of that helmet impacted my cervical spine at the transference processes of C-3, took out the C-3, 4, 5 and 6 and three and a half inches of my collar bone and shredded three cervical nerves that exit through that area, and those three nerves completely inervated my dominate side and my whole upper right quadrant. As a result, at the age of forty-four, I became a permanently disabled person because of my honest belief that a safety helmet was to my advantage.

I am not with any organization at this particular point. I am speaking from my own standpoint when I say that as a medical professional, using something that improves the quantity of my life without assuring me a quality to my life is not something I want to support. I won't tell you that I wish I had died in that accident. I will tell you that if I had known then what I know now, I never would have put that helmet on, and as a result I would have been back to work for Kaiser Hospital providing services that Kaiser has had to stop providing. I was the only technician in the county that made neck braces. That made fittings for artificial legs for amputees. That dealt with quadriplegic and paraplegic motorcycle riders as a specialist. They don't have me any more so that means those people don't have me any more either.

I would really really appreciate your considering my own personal story when you consider the vote that you cast on this helmet law.

Senator Kelley: Thank you very much.

Senator Russell: If you'd not had a helmet, would your head have struck the car?

Shannon Laughy: No. My helmet was sent down to the USC primate helmet lab to be studied to see what kind of damage it incurred in the accident. My helmet sustained no damage at the time of the accident. The damage to my helmet was sustained when the paramedics tore my face shield off and they broke two plastic screws on the right side of my helmet. My helmet is completely unmarred and undamaged, and if I ever ride again, I can guarantee you that that is one helmet that will not be on my head.

Senator Russell: Your head did not strike the automobile?

Shannon Laughy: No, I had not impact with the car at all in any place but the shoulder, down on the right side, and I had a grade 3 open semi-traumatic amputation of the right leg. That would have been my only injury if I had not been wearing that helmet. And I honestly believe that it is a design in a helmet, that by increasing the weight and mass of my head and by putting an artificial fulcrum, it caused the accident to my neck. It caused the fracture to my neck. My doctor that I worked for at Kaiser, John Tote, felt that that was the only thing that could have caused it because I never hit anything with my head or my neck.

Senator Kelley: Thank you very much; I appreciate your comments. Alright, I'd like to have the opponents come forward. Assemblyman Morrow, the proponents went over a little bit so I'm going to authorize a little bit of extra time for the opposition also.

Assemblyman Morrow: By all means, thank you.

Addendum 2: Vehicle Miles Traveled - The National Highway Traffic Safety Administration (NHTSA) bases much of its analysis of traffic accidents and fatalities on Vehicle Miles Traveled (VMT). It sounds very scientific and is unquestioningly repeated both by government officials and by the media in general.

Our investigation into VMT, however, has uncovered the sort of legendary sloppiness one can only expect from a federal bureaucracy.

VMT is derived by NHTSA from information supplied by the states. But many states do not even provide VMT for motorcycles. Or some years they might and others not.

For example, South Dakota, the home of the world's largest motorcycle rally with half a million participants yearly, reported the deaths of 26 motorcyclists in 2006 yet also reported no VMT for that or any other year. How can there be a rally, how can riders die, if no one is riding, not even one mile?

Any statistician knows that discrepancies such as these render conclusions invalid; yet NHTSA persists in perpetuating their VMT fraud.

Information supplied by states that *do* report VMT is highly inaccurate. Have you ever seen the black hoses stretched across the road? Those are counting the number of wheels going across, and there is a magic formula to determine how many are from cars, buses, trucks, and motorcycles, and how far they are traveling. Equally magical is that from a few hoses, VMT can be determined for an entire state!

If you believe the hoses then you will believe the telephone surveys that are also used to derive VMT. Never been called and asked about your yearly mileage? That is because only two or three hundred people in any given state are called.

The Motorcycle Riders Foundation has questioned NHTSA about their sloppy work. Amazingly, NHTSA replied that because the data is gathered wrong consistently then it is still valid and conclusions can still be drawn from it!

NTHSA has lost credibility. Their numbers are a fiction, their conclusions fraud. We do not accept NHTSA propaganda like, “Per vehicle mile traveled in 2005, motorcyclists were 37 times more likely than passenger car occupants to die in traffic accidents.” Nor do we accept NHTSA’s concomitant mandatory helmet message. How can we? How can anyone?

Addendum 3: Transportation-related traumatic brain injuries – According to the Brain Injury Association of America, motorcyclists comprise 6% of all transportation-related traumatic brain injuries. In the Association’s chart below notice that, at 6%, the motorcyclists’ total is smaller than all other groups of road users. If helmets are required for that 6% in order to save lives and money, think how much more lives and money would be saved by requiring helmets for the other 94%. We welcome a campaign to make helmets mandatory for all road users. The campaign would not last one minute.