

**Statement of Brian O'Neill, Executive Vice President
Insurance Institute for Highway Safety
before the House Subcommittee on Telecommunications,
Consumer Protection, and Finance
Reauthorization Hearings, National Highway Traffic Safety Administration
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The Insurance Institute for Highway Safety is an independent research organization that identifies and develops ways to reduce motor vehicle crash losses. We are supported by the nation's property and casualty insurers. I am the Institute's executive vice president and, at the subcommittee's request, I will supply information from the Institute about seat belt laws, automatic restraints, and car bumper performance.

Seat Belt Laws

With seat belt laws now passed in eight states and under consideration in many more, we can begin to determine what we can expect from these laws in the United States. It has often been claimed that a belt law -- any law -- will automatically produce high use rates because people are generally law-abiding. But experience in other countries indicates that the mere presence of a belt law is not, by itself, enough to ensure success; public support and police enforcement appear to be necessary, too.

The Institute recently completed belt use surveys in the first two states to pass such laws -- New York and New Jersey -- and found a wide range of use rates after the laws became effective. In New York belt use by front-seat occupants of passenger cars during the first month of the

law (January 1985) ranged from 43 percent in Watertown to 81 percent in Syracuse. Overall, rates in New York are up sharply from the pre-law September rates, which ranged from 8 to 30 percent (table 1). Other findings include the following:

- Women are more likely than men to obey the law. In January, a 64 percent belt use rate was observed among women, compared to 56 percent among men (table 2).
- Nighttime belt use in large urban areas is somewhat lower than daytime use (table 3).
- Overall, belt use rates are slightly lower for drivers and passengers aged 16 to 24. Restraint use is highest among passengers younger than 16 years old, including those in child safety seats (table 4).

These findings are based on a very large observational survey conducted in and around 10 urban areas (Albany, Buffalo, Syracuse, Elmira, Glens Falls, Jamestown, Rome, Watertown, Queens/Nassau, and Bronx/Westchester) and on major highways between them. In all, 42,000 front-seat occupants were observed during September 1984, and 38,500 during January 1985.

New Jersey passed the nation's second seat belt use law. Just after it took effect, use by front-seat occupants of passenger cars ranged from a low of 25 percent in Atlantic City to a high of 62 percent in Union (table 5). Before the law, use had ranged from only 8 percent in Vineland to a high of 24 percent in East and West Orange and Newark.

Overall, in New Jersey motorists' compliance with the belt law is somewhat less than in New York -- but then New York's law is stronger. Motorists may be stopped and fined in New York if they are simply observed without their belts. But in New Jersey, motorists may be

ticketed only if they have been stopped for another infraction. In addition, New York's law permits fines of up to \$50, while the fine in New Jersey is \$20.

Belt use under the New Jersey law varies sharply by age, with drivers estimated at 16-19 years old much less likely than older drivers to comply. Only 38 percent of the 16-to-19-year-olds were observed using belts, compared to 51 percent for drivers 20-24 and 52 percent for older drivers. For children aged 5 to 15, belt use was 57 percent after New Jersey's belt use law took effect (table 6).

Other findings from New Jersey include these:

- Belt use in large urban areas does not vary significantly by time of day. It ranges from 55 percent during the evening rush hour to 51 percent between 10 p.m. and midnight (table 7).
- Women are much more likely than men to comply with the law. Fifty-five percent of the women in the front seat wear belts, compared to 49 percent of the men (table 8).

The early surge in belt use in New York and New Jersey is encouraging but, as Canada's experience indicates, it may not last. Belt use was 21 percent just before a 1976 Ontario law went into effect; two months later, it was up to 71 percent. However, six months after the law took effect, belt use was down to 48 percent in Ontario. Use may also decline in the United States after an initial surge under seat belt laws. And, we do not yet know how belt use in crashes, which typically is lower than observed use, will be affected by belt use laws.

It is too early to assess the impact of the New York and New Jersey laws on deaths and injuries, but the early belt use survey results are sufficiently encouraging that we can reasonably expect to see some reductions. Clearly, these belt laws are a step in the right direction.

Automatic Restraints

It is important to realize that seat belt laws -- even successful ones -- by themselves are not a sufficient solution to the problem of highway deaths and injuries. Air bags or other automatic restraints are also needed.

In low- to moderate-speed crashes (up to about 25 mph head-on), lap/shoulder belts are particularly effective. But in crashes at higher speeds, even belted occupants can and often do hit steering columns, windshields, and dashboards, especially with their faces and heads. This does not mean that seat belts are not effective. They are. Injuries sustained with them almost always are less severe than they would be without belts. But air bags can prevent some of the injuries and deaths that seat belts still allow.

Air bags are not simply automatic alternatives to seat belts; they offer more protection than belts, especially to faces and heads, in higher speed crashes. This is one of the reasons we need air bags. The other big advantage is that they protect occupants who do not wear belts.

The combination of an air bag plus a seat belt is the most effective restraint system yet developed. It will save more lives and prevent more injuries than seat belts alone. Table 9 shows estimates, based on National Highway Traffic Safety Administration (NHTSA) figures, of the additional lives that could be saved and injuries that could be prevented each year by a combination of air bags plus increased seat belt use. As the table shows, if we could achieve a national belt use level of 50 percent in crashes, we would prevent about 4,400 deaths and 73,000

moderate to critical injuries each year. This level of level belt use and savings would be achieved if two-thirds of the population were covered by seat belt laws and if those laws achieved 70 percent belt use in crashes.

This is, of course, a very optimistic if not impossible scenario; it would save, as I noted, about 4,400 deaths and 73,000 moderate to critical injuries each year. As table 9 also shows, the addition of air bags would more than double these savings: Almost 9,000 deaths and 150,000 moderate to critical injuries would be prevented each year. Clearly we should not settle for half a loaf.

Air bags offer advantages for all front-seat occupants. For belt users, whether voluntary or coerced by law, air bags provide extra protection in higher speed crashes, especially to the face and head. For nonusers of belts -- and there will be many of these, even with seat belt laws -- air bags provide the primary means of restraint.

Seat belt laws and automatic restraints are not an either/or proposition. We need both. The problem of motor vehicle deaths and injuries cannot be solved by a single approach. We must continue to push for technology such as air bags that will greatly increase the protection offered to all motorists.

Bumper Performance

Turning now to car bumpers: When the NHTSA rolled back federal bumper requirements from 5 mph to 2.5 mph, it said among other things that the marketplace would determine what kind of bumpers new cars would have. If consumers wanted 5 mph bumpers, the agency said, competition

among car manufacturers would ensure their availability.

But that is not the case. Consumers are finding it difficult to choose to buy cars with better bumpers because, in most cases, manufacturers are not telling us what level of protection their bumpers provide. NHTSA is not supplying independent confirmation of manufacturers' claims about bumper performance, as it promised to do. And the situation is further confused by manufacturers equipping their cars with bumpers of varying degrees of protectiveness.

What is the effect of all this confusion? I would like to illustrate with some recent results from the Highway Loss Data Institute (an affiliate organization of IIHS). Table 10 compares the frequency of insurance collision coverage claims for crash damage for four groups of General Motors (GM) cars. These groups were chosen because one 1984 model in each group -- Pontiac's Phoenix and Buick's Regal, LeSabre, and Electra -- had major bumper design changes that weakened their performance.* No bumper design changes were made on the other, similar GM 1984 models shown in the table.

Although consumers had no way of knowing about the weakened bumpers on four of the cars, the HLDI results show the sizeable increases in claim frequencies caused by these weakened bumpers. Meanwhile, the companion models with essentially unchanged bumpers showed very small or no increases in their claim frequencies.

*On the Pontiac Phoenix, energy absorbers were replaced with rigid bumper mounts. The Buick Regal, LeSabre, and Electra all used substantially weaker bumper reinforcement bars on their 1984 models. The situation has changed yet again for 1985 models: the Pontiac Phoenix and other X-cars have been discontinued; the 1985 Buick Regal, LeSabre, and Electra have returned to stronger bumper reinforcement bars.

Weakened bumpers increase collision claim frequencies because of the many additional claims resulting from low-speed impacts -- impacts that previously would have produced either no damage or damage less than deductible amounts. (It is also worth noting that for each additional collision claim, consumers have to pay deductible amounts -- typically \$100 to \$200 -- out of their own pockets.)

Despite the wide variation in new car bumper performance, NHTSA is failing to provide a consumer information program, as called for in the Motor Vehicle Information and Cost Savings Act of 1972, and as it promised in 1982 when it weakened the federal bumper standard. The agency promised that such a program would "provide consumers with independent confirmation of manufacturers' bumper performance claims to assure that purchasing decisions are based on the most accurate information available. In this way, maximum marketplace freedom for informed selection ... would be encouraged, and consumers would be provided with the opportunity to purchase additional bumper protection" (Federal Register 47:21819). But such a program is not in place.

Car bumpers can be designed to prevent virtually all damage in low-speed crashes. Consumers have indicated they want such bumpers, and manufacturers have shown they can provide them. In fact, automakers successfully equipped their cars with strong 5 mph bumpers when they were required by to do so by federal standard. They still should be required to do so.

Until they do, consumer information is essential. NHTSA should begin providing sufficient and accurate information so that car buyers can make informed choices about the bumper protection levels they want to purchase.

TABLE 1
Lap/Shoulder Belt Use by Passenger Car Drivers
and Right Front-Seat Passengers* in New York State

	Belt Use Percent	
	<u>Pre-Law</u> <u>September 1984</u>	<u>Post-Law</u> <u>January 1985</u>
Large Urban Areas		
Albany	12	50
Buffalo	12	68
Nassau/Queens	11	49
Westchester/Bronx	15	57
Syracuse	18	81
Small Cities		
Elmira	14	62
Glens Falls	11	55
Jamestown	8	48
Rome	14	60
Watertown	14	43
Intercity	30	76

* Passengers estimated to be under seven years old excluded

TABLE 2
Lap/Shoulder Belt Use of Passenger Car Drivers
and Right Front-Seat Passengers in New York State by Sex

Sex	Belt Use Percent	
	<u>Pre-Law</u> <u>September 1984</u>	<u>Post-Law</u> <u>January 1985</u>
Male	12	56
Female	15	64

TABLE 3
Lap/Shoulder Belt Use of Passenger Car Drivers and
Right Front-Seat Passengers in Large Urban Areas in New York State
by Time of Day

<u>Time of Day</u>	<u>Belt Use Percent</u>	
	<u>Pre-Law</u> <u>September 1984</u>	<u>Post-Law</u> <u>January 1985</u>
2:30 - 4:30 p.m.	13	62
5:00 - 6:30 p.m.	14	61
7:30 - 9:30 p.m.	13	57
10:00 - Midnight	12	56

TABLE 4
Lap/Shoulder Belt Use by Passenger Car Drivers and
Right Front-Seat Passengers in New York State by Estimated Age

	<u>Estimated</u> <u>Age</u>	<u>Belt Use Percent</u>	
		<u>Pre-Law</u> <u>September 1984</u>	<u>Post-Law</u> <u>January 1985</u>
Drivers	16 - 19	10	54
	20-24	15	57
	>24	14	60
Passengers	7-15	14	68
	16-19	7	57
	20-24	10	51
	>24	12	61

TABLE 5
Lap/Shoulder Belt Use by Passenger Car Drivers
and Right Front-Seat Passengers* in New Jersey

	Belt Use Percent	
	<u>Pre-Law</u> <u>November 1984</u>	<u>Post-Law</u> <u>March 1985</u>
Large Urban Areas		
Paramus	17	41
Hackensack	16	58
Passaic/Paterson	13	58
Montclair/Bloomfield	16	61
Oranges/Newark	24	56
Jersey City	15	55
Union	20	62
Elizabeth/Linden	14	54
Trenton	11	41
Camden	20	38
Small Cities		
Atlantic City	9	25
Vineland	8	33

* Passengers estimated to be under five years old excluded

TABLE 6
Lap/Shoulder Belt Use by Passenger Car Drivers and
Right Front-Seat Passengers in New Jersey by Estimated Age

	<u>Estimated</u> <u>Age</u>	Belt Use Percent	
		<u>Pre-Law</u> <u>November 1984</u>	<u>Post-Law</u> <u>March 1985</u>
Drivers	16 - 19	8	38
	20-24	15	51
	>24	18	52
Passengers	5-15	18	57
	16-19	8	43
	20-24	12	43
	>24	14	50

TABLE 7
Lap/Shoulder Belt Use of Passenger Car Drivers and
Right Front-Seat Passengers in Large Urban Areas in New Jersey
by Time of Day

<u>Time of Day</u>	<u>Belt Use Percent</u>	
	<u>Pre-Law</u> <u>November 1984</u>	<u>Post-Law</u> <u>March 1985</u>
2:30 - 4:30 p.m.	20	53
5:00 - 6:30 p.m.	19	55
7:30 - 9:30 p.m.	12	52
10:00 - Midnight	15	51

TABLE 8
Lap/Shoulder Belt Use of Passenger Car Drivers
and Right Front-Seat Passengers in New Jersey by Sex

<u>Sex</u>	<u>Belt Use Percent</u>	
	<u>Pre-Law</u> <u>November 1984</u>	<u>Post-Law</u> <u>March 1985</u>
Male	15	49
Female	18	55

TABLE 9
Annual Incremental Reductions in Occupant Deaths and Injuries
for Lap/Shoulder Belts Alone and Air Bags Plus Lap/Shoulder Belts*

	<u>Belt Usage</u>	<u>Lap/Shoulder Belt</u>	<u>Lap/Shoulder Belt Plus Air Bag</u>	<u>Difference</u>
Deaths	12.5 (current)	0	6,830	6,830
	20	870	7,250	6,380
	40	3,220	8,310	5,090
	50	4,380	8,850	4,470
	70	6,720	9,910	3,190
Moderate to Critical Injuries	12.5 (current)	0	120,740	120,740
	20	14,110	126,590	112,480
	40	53,440	142,800	89,360
	50	73,090	150,930	77,840
	70	112,410	167,150	54,740

* Based on NHTSA estimates of deaths and injuries to front-seat occupants in 1990 and the effectiveness of occupant restraint systems