SEATBELTS: CURRENT ISSUES

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October 2002

Introduction

This is a version of an article prepared for the University of California Berkeley Traffic Safety Center Newsletter. The article provides background on the evolution of seatbelt technology and laws and discusses current issues related to seatbelt use.

Background

For a nation arguably more dependent than any other on the car, the U.S. has an occupant safety record that leaves significant room for improvement. Despite recent achievements, the U.S. fares worse in seatbelt use and traffic fatality rates when compared to other industrialized nations, including Great Britain, Germany, Sweden, Australia, and Canada. Seatbelt usage exceeds 90% in several of these countries, while the U.S. seatbelt use rate is currently 75%, an all-time high. In addition to having higher seatbelt usage rates, these countries have lower traffic fatality rates: for example, 9 out of 100,000 in Germany and less than 6 out of 100,000 in Great Britain die in traffic crashes; in the U.S., it's over 15 out of 100,000.

Occupant safety has been a subject of intense debate for nearly as long as automobiles have been on the roads. Seatbelts, credited with being the most important and effective safety feature currently available in cars, have been both a point of contention among and a focal point of efforts undertaken by advocates, manufacturers, and government in improving traffic safety.

Seatbelt Effectiveness

Belts work as a restraint for vehicle occupants both by keeping them in their cars during a crash and by lessening the impact of a crash. During a crash, three distinct forces occur. The first is the force of the vehicle colliding with another object. The second is the force of the occupant's body colliding with the interior of the vehicle. The third is the force of the occupant's body organs colliding against the body's skeletal structure. A seatbelt functions to stop the occupant with the car, preventing the body from continuing to travel at the car's original speed after the car has stopped. The seatbelt also spreads the deceleration energy over the larger, stronger parts of the body, namely, the pelvis, chest, and shoulders, which are more able to absorb the energy without sustaining injury.

According to traffic safety researchers and the National Highway Traffic Safety Administration (NHTSA), seatbelts reduce a person's chances of dying in a crash by 45% and being injured by 50%. Seatbelts also prevent total ejections from a car during a crash, an important factor in preventing fatalities, since 75% of car occupants who are totally ejected during a crash are killed, according to NHTSA. Several independent studies have

shown that seatbelts also reduce the severity of injury: the odds of serious injury for people not wearing seatbelts are 4 to 5 times greater than for people who are belted. In short, research has repeatedly demonstrated what is now widely known: seatbelts save lives and prevent injury.

Seatbelts also reduce the cost associated with motor vehicle crashes, the most costly and fatal form of unintentional injury. Because seatbelts lessen the severity of injury during a crash, the average inpatient charge for an unbelted driver is over 60% greater than the charge for a belted driver. According to the National Safety Council, the estimated cost of motor vehicle crashes in 1994 alone was $169 billion in lost wages, medical expenses, and administrative costs. As more drivers buckle up, the social costs associated with motor vehicle injuries decline. NHTSA estimates that between 1975 and 2000, seatbelts saved over 135,000 lives -- 12,000 in 2000 alone. If all vehicle occupants used seatbelts, over 9,000 additional lives could have been saved in 2000.

A Brief Seatbelt History

Seatbelts first appeared in American automobiles in the early 1900s. With few other cars to collide with at the time, seatbelts were popular not for their role in crash protection but because they kept occupants inside their cars during bumpy rides. Seatbelts were later installed in airplanes to keep pilots from falling out during upside-down maneuvers, and added to race cars in the 1920s. In 1950, the first factory-installed seatbelts in the U.S. appeared in the 1950 Nash Statesman and Ambassador models. This was nearly 20 years after U.S. physicians had begun urging auto manufacturers to provide seatbelts in cars.

Until the late 1960s and early 1970s, the automotive industry in the U.S. was almost entirely unregulated, and concern over traffic safety had been minimal. In 1965 an estimated 50,000 people were killed in automobile crashes. That same year, the Senate passed a two-year, $320 million highway beautification bill that provided $5 million for a study of ways to dispose of scrapped cars, and a meager $500,000 for a study of highway safety.

The auto industry at the time believed that safety would not sell, and that an emphasis on a car's safety features would scare the public. Advertising instead generally focused on a car's comfort, style, and performance. At the same time, efforts to reduce traffic crashes never focused on the automobile, but rather on the driver or the road.

Despite a lack of industry and government attention to occupant safety, there was a small cadre of legislators, consumer safety advocates, and lawyers -- most prominently, Ralph Nader -- who felt that the automotive industry needed to do a better job of engineering safe cars. In addition to calling the government's attention to the issue, these activists brought auto safety into the public's eye. In May 6, 1966, a press release was issued reporting that between 1960 and 1966, 426 recall campaigns involving 8.7 million cars had been undertaken by auto manufacturers without any notification to consumers. (If a recalled car was brought into a dealer, the dealer would fix the defect without notifying the owner, but if cars were not brought in, no efforts were made by the manufacturer to

locate or remedy the recalled cars.) After this and a few other events that caused embarrassment to auto manufacturers, government and public support was galvanized towards securing standards for automotive safety.

In 1966, the Highway Safety Act and the National Traffic and Motor Vehicle Safety Act were passed, still the most substantial legislation to date regarding automotive industry standards. The legislation authorized the federal government to set and regulate motor vehicle and highway standards, and also created the National Highway Safety Bureau, which later became the National Highway Traffic Safety Administration (NHTSA). The resulting improvements in auto design were significant and included head rests, energy absorbing steering wheels, shatter-resistant windshields, and mandated installation of seatbelts. By 1970, motor vehicle-related deaths were on the decline, both as measured by deaths per population and deaths per vehicle miles traveled.

With vehicle safety and industry accountability partly achieved, traffic safety advocates turned their attention to the adoption of automatic occupant restraint systems in vehicles and mandatory seatbelt use laws.

Seatbelt Legislation

The availability of seatbelts in cars did not guarantee their use. While seatbelt advocates urged vehicle occupants to buckle up, misinformation and misguided perceptions prevented widespread seatbelt usage. Popular misconceptions were that seatbelts would prevent occupants from escaping if their vehicle went underwater or caught on fire, or that it was safer to be thrown from a vehicle in the event of a crash. Some researchers claimed that the use of seatbelts increased risky driving behavior, with drivers compensating for the additional safety provided by the belt by engaging in reckless driving (such claims were not substantiated by evidence). Additionally, civil libertarians did not wish to be told by the government what to do inside their cars. These opinions were counterproductive to the technological advances made in seatbelt engineering and made it difficult to gather public support for mandatory seatbelt laws.

To counter this, legislators and advocates began promoting automatic restraint systems, and in 1970, a Federal Motor Vehicle Safety Standard proposed that all vehicles manufactured after January 1, 1973 be equipped with an automatic restraint mechanism. This technological concept meant one of two things: air bags or automatic belts. The auto industry, which would incur the costs of automatic restraint systems (though consumers would ultimately absorb the costs through the price of the car) strongly opposed this rule.

Over the next ten years the standard was debated, delayed, altered, and eventually rescinded by NHTSA in 1981. This favorable decision for auto manufacturers was not in the best interest of the insurance industry, for whom motor vehicle crashes, injuries, and fatalities are costly. Consequently, State Farm Insurance brought NHTSA to court in 1983; the ruling was in favor of the insurance company, and NHTSA was ordered to write a regulation for automatic occupant restraint systems.

In 1984, NHTSA proposed that automatic restraint systems be required in new vehicles unless two-thirds of the U.S. population was covered by a mandatory seatbelt law by September 1989. With a substantial incentive to see seatbelt laws adopted in a majority of states (which would place the responsibility for safety on the public as opposed to the auto industry), auto manufacturers joined forces with NHTSA and traffic safety advocates to support states' passage of mandatory seatbelt use laws.

Campaigns to pass mandatory laws suddenly had influential resources: support at the federal level and from a wealthy part of the private sector. The case for mandatory seatbelt use laws also gathered momentum from the child restraint laws passed between 1978 and 1985. Seatbelt advocates applied the child restraint argument to adults, challenging policy makers and voters to consider the rationale for why occupants at 4 years of age and not 10, 18, or adulthood deserve to be covered by a restraint law.

In 1985, at least one mandatory seatbelt use bill was introduced in all but two (Idaho and Nevada) of the 49 states holding Congressional sessions that year. By September 1989, 34 states had enacted mandatory seatbelt use laws. As of December 27, 1995, with the passage of Maine's belt law, every state except for New Hampshire had a mandatory belt law. (The auto industry concurrently developed and began installing passive restraint systems in some car models, mainly in the forms of automatic shoulder harness seatbelts and airbags, but these were not widely available.)

Mandatory laws have proved effective both in increasing seatbelt usage and decreasing traffic fatalities. The Centers for Disease Control and Prevention reports that seatbelt use nationwide increased from 11% in 1981 to 68% in 1997. NHTSA reports that the motor vehicle fatality rate as measured per 100,000 population decreased from 21.49 in 1981 to 15.69 in 1997, and also decreased as measured by 100 million vehicle miles traveled, from 3.2 in 1981 to 1.6 in 1997. While these decreases cannot be attributed to the use of seatbelts alone, seatbelts are credited with playing a significant role in these advancements.

Primary versus Secondary Laws

Some of the most dramatic improvements have been seen through the passage of primary, or standard, enforcement seatbelt laws, which allow a police officer to stop a driver and issue a ticket for the sole reason of not wearing a seatbelt. Secondary enforcement laws, unique to the U.S., allow for non-belted occupants or drivers to be ticketed only after being stopped for another moving violation. To date, 19 states have a primary enforcement law.

A recent study by Alma Cohen and Liran Einav at Harvard University's Department of Economics showed that seatbelt usage increased an average of 11 percentage points after the passage of secondary enforcement seatbelt laws and 22 percentage points after the passage of primary enforcement laws. When states switched from secondary enforcement laws to primary enforcement laws, usage increased an average of 13 percentage points. This also translates into fewer fatalities: as Evans and Graham reported in 1991, after the

passage of primary laws, states experienced an average reduction in motor vehicle occupant fatalities of over 20%; secondary law states experienced an average 7% reduction in fatalities.

California, a primary enforcement state, currently reports 91% usage -- the highest in the country. After the passage of a mandatory seatbelt law in 1986, California's usage rate went from 26% to approximately 45%. By 1992, California's usage had increased to 71%. With the passage of the primary enforcement law in 1993, California's usage rate jumped to 83%, steadily climbing to the current rate. According to the National Safety Council, California's fatality rate has decreased by over 34% since the passage of the primary enforcement law.

The passage of primary enforcement laws is controversial in some states due to concerns about racial profiling and infringement on individual rights. As Jonathan Adkins, a spokesman for the Governors Highway Association, recently told the Associated Press, "When you apply a sanction, it's very heavy handed and implies that Washington knows best. If the numbers were going the wrong way, we could understand. But progress is being made; it's not as quick as we would like, but it's being made."

In a report released in October 2000, Transportation Department Inspector General Kenneth Mead stated that nationwide seatbelt use would stagnate unless more states switched to standard enforcement laws.

"Unless additional states enact and enforce primary laws, which are the most effective means of increasing seatbelt use, we see no credible basis to forecast increases in excess of the recent trend," Mead stated in the report.

Several states with primary enforcement laws still have lower seat belt use than states with secondary enforcement laws. How the laws are actually enforced, who they cover, and how well the public knows about the laws are all factors in how effective the laws are.

Current Issues

Seatbelt design continues to be improved. Energy-absorbing fibers, seat belt tensioners, and height adjusters are examples of new technology making seatbelts both safer and more comfortable. In all new vehicles sold in the U.S., auto manufacturers are also required to install a buzzer and dashboard light to remind occupants to buckle up.

Attention continues to be focused, however, on how to get people to use the seatbelts they have. Under the Clinton administration, the "Presidential Initiative for Increasing Seat Belt Use Nationwide" set goals of increasing national seatbelt use to 85% by 2000 and 90% by 2005. Calling the goals too ambitious, Jeffrey Runge, the NHTSA administrator appointed by President Bush, lowered the goal to 78% by 2003. NHTSA currently coordinates a national campaign to increase seatbelt and child safety seat use called "Buckle Up America" and recently coordinated "Click It or Ticket," a high-profile

law enforcement activity that relied on increased checkpoints and citations to increase seatbelt use.

While encouraging increased seatbelt use is an important and necessary goal, auto manufacturers and policy makers continue to play an important role in shaping the environment in which people can and want to buckle up.