

# Traffic Safety Facts 1994

U.S. Department of Transportation  
National Highway Traffic  
Safety Administration



## Occupant Protection



**“Safety belts, when used, reduce the risk of fatal injury to front-seat passenger car occupants by 45 percent.”**

### Restraint Use Laws

The U.S. Department of Transportation's July 1984 rulemaking on automatic occupant protection began a wave of legislative action that resulted in the enactment of safety belt use laws in many states. The goal of those laws is to promote belt use and thereby reduce deaths and injuries in motor vehicle crashes.

- The first mandatory belt use law was enacted in the State of New York in 1984.
- As of December 1994, 47 states and the District of Columbia have belt use laws in effect. These laws differ from state to state, according to the type and age of the vehicle, occupant seating position, etc.
- The first mandatory child restraint use law was implemented in the State of Tennessee in 1978.
- Since 1985, all 50 states and the District of Columbia have had child restraint use laws in effect. These laws also cover various segments of the population.

### Restraint System Effectiveness

- Research has found that lap/shoulder safety belts, when used, reduce the risk of fatal injury to front-seat passenger car occupants by 45 percent and the risk of moderate-to-critical injury by 50 percent. For light truck occupants, safety belts reduce the risk of fatal injury by 60 percent and moderate-to-critical injury by 65 percent.
- Recent NHTSA analyses indicate an overall fatality-reducing effectiveness for air bags of 10 percent, over and above the benefits from using available safety belts (*Fatality Reduction by Automatic Occupant Protection in the United States*, Paper No. 94-S5-O-08, 14th International Conference on Enhanced Safety of Vehicles, May 1994).
- Research on the effectiveness of child safety seats has found them to reduce fatal injury by 69 percent for infants (less than 1 year old) and by 47 percent for toddlers (1-4 years old).

**Table 1. Estimated Number of Lives Saved by Restraint Systems, 1982-1994**

Restraint Type	1982-86	1987	1988	1989	1990	1991	1992	1993	1994
Seat Belts	9,214	5,171	5,983	6,353	6,596	7,022	7,403	8,372	9,175
Air Bags	--	1	4	7	46	92	141	245	374
Child Restraints	625	213	248	238	222	247	268	286	308

### Benefits of Safety Belt Use

Starting in 1994, NHTSA revised its method for calculating lives saved by safety belts. The note at the bottom of the following page explains the new method.

- In 1994, 30,780 occupants of passenger vehicles (cars, light trucks, vans, and utility vehicles) were killed in motor vehicle traffic crashes, 76 percent of the 40,676 traffic fatalities reported for the year.
- Among passenger vehicle occupants over 4 years old, safety belts saved an estimated 9,175 lives in 1994 and prevented approximately 211,000 moderate-to-critical injuries.
- From 1982 through 1994, an estimated 65,290 lives were saved by safety belts, and more than 1.5 million moderate-to-critical injuries were prevented.
- At the high use rates achieved in other countries (85 percent), safety belts could have saved the lives of 15,881 passenger vehicle occupants over age 4 (that is, an additional 6,706) for the nation as a whole in 1994. If ALL passenger vehicle occupants over age 4 wore safety belts, 18,704 lives (that is, an additional 9,529) could have been saved in 1994.
- Ejection from the vehicle is one of the most injurious events that can happen to a person in a crash. In fatal crashes, three-quarters of the occupants who were ejected from passenger cars were killed. Safety belts provide the greatest protection against occupant ejection: in fatal crashes in 1994, only 2 percent of restrained passenger car occupants were ejected, compared to 24 percent of unrestrained occupants.

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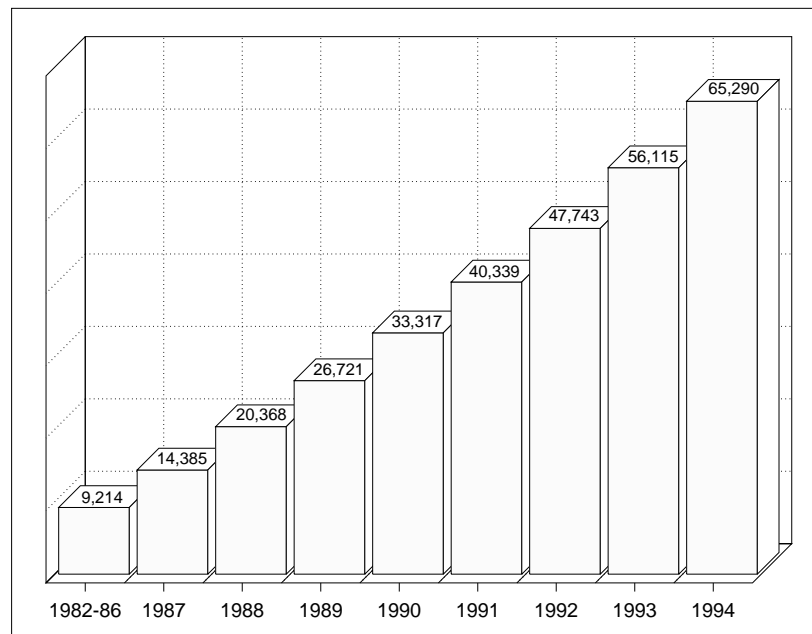
**“From 1982 through 1994, an estimated 65,290 lives were saved by safety belts.”**

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**Figure 1. Cumulative Estimated Number of Lives Saved by Safety Belt Use, 1982-1994**



### Air Bags

- Air bags, combined with lap/shoulder safety belts, offer the most effective safety protection available today for passenger vehicle occupants.
- As of September 1, 1994, it is estimated that over 21 million passenger vehicles on the road were equipped with air bags.
- In 1994, an estimated 374 lives were saved by air bags. From 1987 to 1994, a total of 911 lives were saved.
- Beginning September 1997 (model year 1998), all new passenger cars will be required to have driver and passenger air bags, along with manual lap/shoulder safety belts. The same requirement applies to light trucks beginning in September 1998.
- Air bags are *supplemental* protection and are not designed to deploy in all crashes. Most are designed to inflate in a moderate-to-severe *frontal* crash.
- Some crashes at lower speeds may result in injuries, but generally not the serious injuries that air bags are designed to prevent. For this and other reasons, **lap/shoulder belts should always be used, even in a vehicle with an air bag.**
- Children in rear-facing child seats **should not** be placed in the front seat of cars equipped with passenger-side air bags. The impact of a deploying air bag striking a rear-facing child seat could result in injury to the child.

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**“Between 1987 and 1994, 911 lives were saved by air bags.”**

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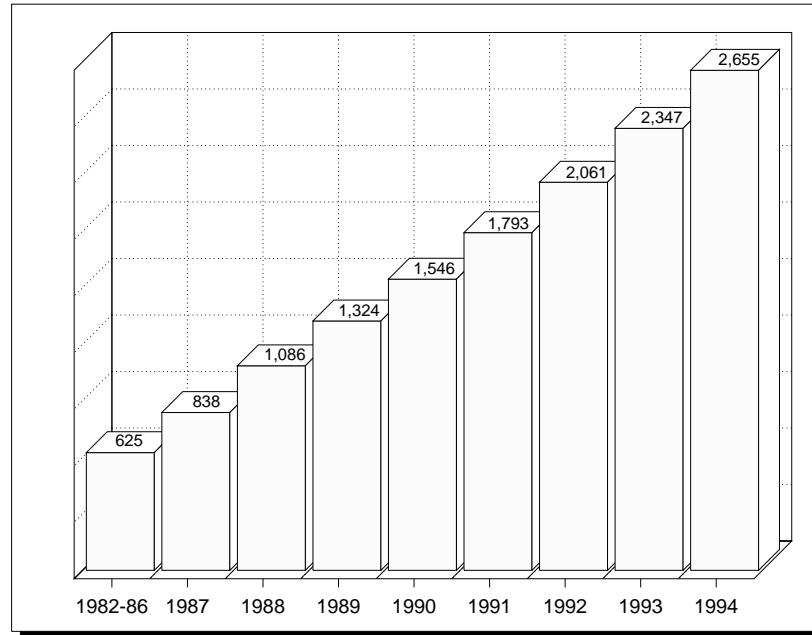
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### Benefits of Child Restraint Use

- In 1994, there were 682 occupant fatalities among children under 5 years of age. Of these 682 fatalities, an estimated 376 (or 55 percent) were totally unrestrained.
- Among children under 5 years old, an estimated 308 lives were saved in 1994 by child restraint use. Of these 308 lives saved, 250 were associated with the use of child safety seats and 58 with the use of adult belts.
- At 100 percent child safety seat use for children under 5, an estimated 532 lives (that is, an additional 282) could have been saved in 1994.
- Over the period 1982 through 1994, an estimated 2,655 lives were saved by child restraints.

In 1994, NHTSA revised its method of estimating lives saved by safety belts. The previous method incorporated survey data from states with and without belt use laws. The current method relies on police-reported restraint use information for each individual occupant fatality. In addition, the estimate now includes lives saved in passenger vehicles at *ALL* seating positions, where previously it had been front outboard positions only. Both methods address only occupants age 5 years and older; younger occupants should be restrained by child safety seats or booster seats, as appropriate.

**Figure 2. Cumulative Estimated Number of Lives Saved by Child Restraints, 1982-1994**



**“From 1982 through 1994, an estimated 2,655 lives were saved by child restraints.”**

### **Restraint Use**

- According to observational surveys conducted by the states and reported to NHTSA, 67 percent of passenger vehicle occupants used their safety belts in 1994.
- The reported restraint use rate among all occupants of passenger cars involved in fatal crashes was 53 percent in 1994. The use rate for drivers was higher (56 percent), and the highest use rate was reported for children age 4 and under (62 percent).

#### **For more information:**

Information on occupant protection is available from the National Center for Statistics and Analysis, NRD-31, 400 Seventh Street, S.W., Washington, D.C. 20590. Telephone inquiries should be addressed to Ms. Louann Hall at (202) 366-4198. FAX messages should be sent to (202) 366-7078. To report a safety-related problem or to inquire about motor vehicle safety information, contact the Auto Safety Hotline at 1-800-424-9393.

**“Serving the Highway Safety Community by the Numbers”**