CFRT Brief #1 West Virginia Child Fatality Review Team

he West Virginia Child Fatality Review Team has reviewed two West Virginia cases to date in the year 2000 where unrestrained occupants (one child passenger and one teenage driver) received fatal injuries from an air bag. Both would almost assuredly have survived if they had been wearing seatbelts.

Air bags are an effective and proven safety device when properly used in combination with seatbelts and have saved many lives. However, the failure to use seatbelts puts occupants in danger of being injured or killed by the detonation and expansion of an air bag in a crash.

Air bags are designed to go off at the time of impact and provide a cushion between the occupant and the hard surfaces immediately in front of them. To do this safely, a minimum distance of ten inches between the air bag container and the occupant is required.

Most frontal accidents do not occur without some forewarning, however short in time frame. Often the driver has time to apply the brakes before impact. This emergency braking maneuver will often throw the unrestrained (unbuckled) driver or passenger forward toward the dash before the impact. When the impact does occur, the occupants are then too close to the air bag for the air bag to properly deploy without injuring or killing the occupant.

Unrestrained (Unbelted) Accident Safe Distance AIR BAG IO Inches

Before Onset



Unrestrained child during emergency braking.



IMPACT



During Collision Bag is deployed against the child's body.

People overestimate their ability to hold themselves back from the dashboard under severe deceleration. This is assuming they are prepared in advance. If a person is not anticipating an emergency braking maneuver, then they may be thrown up against the dashboard at the first application of the brakes before they can attempt to hold themselves back. This is often the case with adult passengers and is especially true with children.

The close contact with the air bag on deployment may result in the occupant suffering fatal injuries such as neck fractures and chest injuries including cardiac rupture.

Recent press has noted the problem with adults of small stature and children sitting to close to the air bags. Little emphasis has been placed on the problem of unrestrained occupants who "think" they are at a safe distance but are thrown into the danger zone at the onset of the accident sequence.

To repeat, **air bags are an effective lifesaving device when properly utilized in conjunction with seatbelts**. Seatbelts are designed to take effect under severe braking maneuvers. Air bags only deploy at time of impact.

Air bags only provide protection in frontal crashes while seatbelts afford some protection in all types of crashes.

May 2000 Air Bags and Unrestrained Front Seat Vehicle Occupants

Unrestrained (Unbelted) Accident



Before Onset



Unrestrained occupant during emergency braking



IMPACT



During Collision Bag is deployed against the person's body rather than person hitting deployed air bag.

Recommendations:

Always use child safety seats and/or safety belts correctly every time you ride. Restrain children ages 12 and under in the back seat.

Infants, until at least 1 year old and at least 20 pounds, should be in rear-facing child safety seats. **Never put a rear-facing infant or convertible safety seat in the front passenger seat of a vehicle.**

Children over 1 year old and between 20 and 40 pounds should be in forward-facing child safety seats. In addition, children ages 4 to 8 (about 40 to 80 pounds) should be in a car booster seat and restrained with a lap/shoulder belt every time they ride.

Read your child safety seat instruction manual and your motor vehicle owner's manual for directions on proper installation.

Call the National Highway Safety Administration's Auto Safety Hotline at (888) 327-4236 to inquire about any recalls or safety notices on your child safety seat.

Deactivate passenger air bags in pickup trucks when using child safety seats.

Safety seats in front seat often place the child to close to the air bag placing them at risk.

Do not place children next to active side air bags.

Do not have seats reclined when vehicle is moving.

For further safety information contact:

National Highway Traffic Safety

Administration's toll-free Auto Safety Hotline at 1-800-424-9393 or visit their WEB site at http://www.nhtsa.dot.gov Or: National Safe Kids Campaign at (800) 441-1888 or visit their web site at

Http://www.safekids.org/ Or: Insurance Institute for Highway Safety at (703) 247-1500 or visit their web site at

(703) 247-1500 or visit their web site at Http://www.highwaysafety.org

WV - Child Fatality Review Team

Office of Chief Medical Examiner 701 Jefferson Road South Charleston, WV 25309 304-558-5319

Restrained (belted) Accident



Before Onset



Restrained occupant under emergency braking. Seatbelts engage and restrain forward movement



IMPACT Occupant restrained away from air bag



During Collision Bag is fully deployed, protecting occupant from movement of the dashboard and restraining forward movement of the head.