Procedure Section: **Safety**
Procedure Title: **Front Seat Air Bags**
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The Ministry of Transportation recommends that children under the age of thirteen (13) years be placed in the back seat of the vehicle and away from active front air bags.

Therefore, while transporting any students in the elementary level (grade JK to 8), please ensure they are seated in the back seats. Students in secondary level (grade 9 to 12) shall be allowed to ride in the front seat when necessary.

Related RCJTC Policies

P.01 Transportation Policy
P.03 Safety Policy

Related RCJTC Administrative Procedures

Related RCJTC Forms

Transport Canada Transports Canada

Canada

Attachment

Transport Canada

www.tc.gc.ca

Safety Issues for Canadians: Air Bags

TP 2436 Road Safety Leaflet CL 9601 (E)
Revised October 1996

Air bags are safety devices of proven value that supplement the protection provided by seat belts. Transport Canada has been receiving complaints from the public about injuries caused by air bags that inflate in low-speed collisions and about incidents in which air bags did not open when it seemed they should have. This leaflet answers commonly asked questions about frontal air bags, and it provides advice on how to prevent being injured by a deploying air bag.

How Do Air Bags Work?

Air bags are connected to sensors that detect sudden deceleration. When activated, the sensor sends an electrical signal that ignites a chemical propellant, and when ignited, this propellent produces nitrogen gas, which inflates the air bag. This process occurs very quickly—in less than one-twentieth of a second—faster than the blink of an eye. Most air bags have internal tether straps that shape the fabric and limit the movement of the bag. Vents in the rear allow the bag to deflate slowly to cushion the head as it moves forward into the deploying air bag.

Sensors deploy air bags only when deceleration exceeds a minimum threshold. If the change in speed due to an impact is lower than the threshold, the air bag will not inflate. In low- to moderate-speed collisions, the seat belt alone is usually sufficient to prevent serious injury. In high-speed crashes, the seat belt may not be able to prevent the driver's head from striking the steering wheel or the passenger's head from hitting the dashboard. Frontal air bags protect the head and upper body in frontal crashes and are not designed to open in rear-end collisions, side impacts, or rollovers. Air bags may deploy in undercarriage impacts and angled collisions, including side impacts, where there is sufficient longitudinal deceleration.

Smoke, some of which is caused by residual combustion products, may be present in the vehicle following the inflation of an air bag. In addition to creating smoke, deployment also releases powder that is in the air bag folds to prevent them from sticking together.

Why Do Air Bags Sometimes Cause Injuries?

In order to protect the head and upper body in high-impact crashes, air bags must inflate so quickly, and with such force, that they can cause injuries. While most of these injuries are minor, consisting only of bruises and abrasions, some are more serious, such as broken arms. In extreme cases, such as when the head or chest is against the module when it opens, fatal injuries can result.

People who sit close to the steering wheel are at higher risk of being injured by a deploying air bag than those who sit further away. Small children are also very vulnerable. Children under the age of 12 should always be seated in the back of the vehicle and should be properly restrained. Never allow a child to sit or stand near the dashboard. In addition, never install a rearward-facing infant restraint system in a seat equipped with an air bag—if it deploys, the infant restraint system will be propelled into the back of the seat.

What Can We Expect of Air Bag Systems in the Future?

In Canada, it is not mandatory for air bags to be installed in vehicles; however, when they are, they must meet specific safety requirements. Whenever possible, Transport Canada sets standards of performance and does not stipulate that particular hardware be used by manufacturers. In the case of air bags, the Regulations specify vehicle test conditions and injury criteria for the effective protection of occupants.

In order to reduce the incidence of air-bag-induced injury, motor vehicle manufacturers are developing “smart” air bags. Already some possess two thresholds of activation, one that is appropriate for a belted occupant and another, lower threshold, for an unbelted person. The next generation of air bag systems will probably have proximity sensors that gauge how close an occupant is to the air bag module and will be equipped with warning systems that signal when someone is too close—for instance, when a driver has fallen asleep and is slumped over the steering wheel. Some vehicles already have a manual cut-off switch that disables the passenger- side air bag when an infant restraint system is installed; in the future, automatic systems may prevent the air bag from deploying.

What Can I Do in the Meantime?

You can maximize the protection offered by current occupant restraint systems and reduce the risk of being injured by an air bag by taking the following precautions.

General Guidelines:

- Always wear your seat belt.
- Adjust the seat belt properly. Place the lap belt as low as possible over the hips—not over the abdomen. Ensure the shoulder belt lies on the chest and over the shoulder. Do not leave any slack in the belt.
- Adjust the vehicle's front seats as far to the rear as possible to give the air bags as much room as possible in which to inflate.

Guidelines for Children:

- Children under the age of 12 should be seated in the back of the vehicle
- Make sure the infant restraint system, the child restraint system, or the booster cushion is properly suited to the child's height and weight.
- Always ensure that the restraint system is properly secured by the seat belt to the vehicle.
- Secure the child properly in the restraint system.
- Never install a rearward-facing infant restraint system in a seat equipped with an air bag.
- Never place the shoulder strap of a seat belt behind the child's back or under the arm.