**Report Overview: The Future of Automobile Airbags**

*Note:* This was a student oral presentation back in the 1980s. Times have changed!

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| **Explanation of the Context**  *Topic and Audience:* The employees of Covert Ford will hear this presentation as a result of an agreement between the owner and the research consultant. This presentation is intended to give these employees a demonstration of how they might better inform their customers concerning airbags. The topic of the oral report is "The Future of Airbags." |

**Oral Report**

My name is Darrin White and I am an automotive safety technology consultant. I want to talk to you today about the current status of airbag technology to enable you to better answer customer questions. I'll be covering new technical advances in airbags, including new locations within the automobile, new materials that are going to be used in airbags, and new sensing devices that we'll soon be seeing in airbag technology. I'll also be focusing the safety issue, which I know is a big concern of many of your customers, and will talk about what is being in government and industry address it.

Imagine buying an automobile equipped with 10 airbags!

This may be a possibility in the near future, but it's just an idea right now in the 1980s. As technology improves and the safety of airbags is proven, they will become as vital as seat belts in preventing injury or death in an automobile. At the present time, most new vehicles are now equipped with two airbags, one on the driver's side and one for the front seat passenger. Already some manufacturers are offering side airbags on selected models.

*Slide 1: Present a list showing BMW, Mercedes, and Volvo as currently offering side airbags.*

Some of the airbags are located in the doors while others have been placed into the seat of the vehicle. Research is being conducted to determine the safest location for these smaller airbags. After the acceptance of four standard airbags, it is expected that additional locations will follow.

Already there are plans for foot airbags to protect the leg and foot area during frontal collisions. It is not unrealistic to imagine that eventually the automobile will be surrounded by a cushion of air. The future of airbags is not restricted to simply adding more in different locations to vehicles.

There are many plans for the future that involve not only the automobile industry but the federal government as well.

The airbag of the future will be much smarter than the ones used today. The so called, "smart airbags", will be able to think for themselves. This ability will enable airbags to make judgments about the severity of a collision as well as the individual they are intended to protect.

Another significant improvement in technology will involve the sensors used in airbags.

Plans for the future include installation of multiple sensors that will be able to detect a driver's or a passenger's weight and height as well as the force of a crash. It is expected that a vehicle will have many more sensors in the future.

The actual material of the airbag is also going to undergo some adjustments.

Lighter, sturdier material will enhance the effectiveness of the airbag to protect the occupants of a vehicle.

Perhaps the biggest concern to airbag users is the safety issue.

While most consumers agree that airbags save lives in serious frontal collisions, there is widespread alarm over the deaths that occur in the deployment of airbags. Because the airbag is inflated with such tremendous speed, the pressure caused can literally kill certain smaller individuals. All research indicates that the original airbag design was intended for males weighing from 150 to 160 pounds.

Obviously, these are not the only individuals that may be riding in the front seats of vehicles. Because statistics validate these concerns, the federal government is actively involved in reducing the inflation speed of future airbags. The most tragic reports of airbag-causing injuries involve children and infants. Because of their smaller size, the impact created by an inflating airbag can be extremely hazardous. A recent article in *US News and World Report* emphasizes the severity of the problem: "A year ago, Robert Sanders was driving near his Baltimore home, his 7 year old daughter, Allison, at his side when their minivan skidded into an intersection and bumped another car at about 15 miles per hour. 'My first reaction,' he recalls 'was that I would have to have some body work done.' Then his eyes turned toward Allison. The powerful deployment of the passenger side airbag and knocked her unconscious. She died the next day. It is now clear that airbags, designed to hit adults in the chest, often strike kids in the face. Last year the devices saved 475 adult lives. But they have killed at least 28 children." Because of instances such as this, the federal government is strongly involved in airbag improvement for the future.

*Slide 2: Show transparency with child covered with airbag. Discuss while pointing to picture.*

Perhaps the most widely publicized issue concerning airbags involves rear-facing infant restraint seats.

After several horrible accidents, the federal government began to investigate reasons for the unsafe positioning of these seats. At the present time, it is known that the inflating airbag may possibly suffocate a small child in such a seat because the head is so close to the bag. Another reaction might be throwing the child into the actual car seat with such pressure that serious injury could occur. Strong warnings urge parents to place such seats in the back seat of vehicles with airbags. There are, however, vehicles such as trucks that do not have a back seat.

The alarming concern over children has prompted the federal government and the automobile industry to begin major adjustments in airbag technology. The future should provide airbags that can detect the presence of an infant seat or a child and automatically lower the inflation speed and pressure. The future of airbags could involve endless possibilities. Ford Motor Company is a leader in planning for airbag improvement. In order to further review the implications of the future, it would be helpful to understand the technology behind airbags. Additional information on this subject can be acquired by reading my report, *Automobile Airbag Technology and Safety*.