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Withdrawal/Redaction Sheet

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DOCUMENT NO. AND TYPE	SUBJECT/TITLE	DATE	RESTRICTION
001. list	suggested witnesses for airbag rollout event (1 page)	nd	b(6)
002a. memo	Cathey Hickey of Advocates for Highway and Auto Safety to Tim Hurd re Advocates "Saved by the Air Bag" group members (partial) (1 page)	09/04/1998	b(6)
002b. attachment	advocates "Saved by the Air Bag" (partial) (4 pages)	09/04/1998	b(6)
003. note	To Phil Recht re people to participate in air bag press conference (partial) (1 page)	09/03/1998	b(6)

COLLECTION:

Clinton Presidential Records
Office of Science and Technology Policy
Jerold Mande
OA/Box Number: 13034

FOLDER TITLE:

Air Bags: [Correspondence] [1]

2008-1524-F

kc1218

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

Freedom of Information Act - [5 U.S.C. 552(b)]

P1 National Security Classified Information [(a)(1) of the PRA]
P2 Relating to the appointment to Federal office [(a)(2) of the PRA]
P3 Release would violate a Federal statute [(a)(3) of the PRA]
P4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
P5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA]
P6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

b(1) National security classified information [(b)(1) of the FOIA]
b(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
b(3) Release would violate a Federal statute [(b)(3) of the FOIA]
b(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
b(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
b(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
b(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
b(9) Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Personal record misfile defined in accordance with 44 U.S.C. 2201(3).

RR. Document will be reviewed upon request.

National Highway Traffic Safety Administration
Office of Public & Consumer Affairs

September 8, 1998

NOTE TO: Jerry Mande, WH

Phil Recht asked me to tell you about another good possibility for the Thursday air bag announcement, an air bag survivor, a woman named Terry Vaccher, from California.

She introduced Secretary Slater at a "Lifesavers" conference in Orlando, and the secretary was impressed with her performance.

Her crash involved a rear-end collision of her Ford Explorer into the back of a tractor trailer. She was pregnant at the time, but both she and her child were saved by the deployment of the air bag.

We are trying to get in touch with her to see if she could be available on the 10th.

CC: Bill Schulz

Safety Fact Sheet

Advanced air bags

- The goal is to preserve and enhance the benefits of air bags while reducing the risks, providing protection to a wide range of occupants in a variety of real world crash conditions. The proposal gives automakers the maximum flexibility to pursue effective technological solutions.
- The rule incorporates additional air bag system performance tests aimed at providing maximum protection for properly seated adults, and reduced risk for infants, young children and adults who get too close to inflating air bags.
- In addition to the new tests, the proposed rule includes upgraded injury criteria that will save additional lives compared with the current standard.
- Advanced air bags will eliminate more than 90 percent of the fatalities associated with air bag deployments. These benefits are in addition to the more than 3,000 lives per year that air bags are expected to save when every vehicle is equipped with them. The new crash tests in this proposal also will preserve the benefits to more than 400 people at risk from smaller and less powerful air bags that would be allowed by the existing sled test option.
- The tests will incorporate a new crash dummy family, including 1-, 3- and 6-year-old child dummies, a 5th percentile or small female dummy, and a 50th percentile or average-size male dummy. Although the child and female dummies are new, they are based on proven technology.
- The advanced air bag rule includes low-speed testing designed to reduce risks to infants, children and out-of-position adults. The rule also includes high-speed tests designed to preserve and enhance the current level of air bag protection.
- Advanced air bags will never eliminate the need for all vehicle occupants to wear seat belts. And, the back seat still will be the safest seating position for children. Young children should still be transported in safety seats or booster seats appropriate for their age.

New tests

The tests in the new advanced air bag proposal are designed to achieve two objectives. One is to reduce the potential danger for three groups of people that have been identified as having risks associated with air bag deployments. The second goal is to maintain and enhance the substantial lifesaving benefits of air bags, which have saved nearly 3,500 people.

To reduce the risks, NHTSA is proposing a series of tests that specifically address the situations that are potentially dangerous to infants in rear-facing child seats, other children age 12 and under, and small adult drivers.

To preserve and enhance the benefits, NHTSA is proposing a series of high-speed crash tests designed to assure that the vehicle and its air bag system, as a whole, provides reliable protection for average-sized and small adults.

The proposed testing, using improved injury criteria, gives automakers maximum flexibility to pursue effective technological solutions. The tests are performance oriented, not design specific.

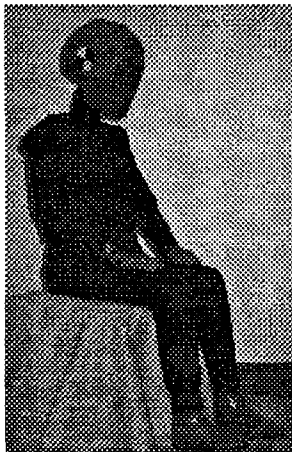


Infants

The proposal gives automakers the option of ensuring the air bag is off when a rear-facing child seat is present, or demonstrating a low risk of injury to an infant secured in the in the seat.

Automakers have several options for testing depending on the design of the air bag system in the vehicle.

Some tests incorporate the CRABI dummy (left).



Children

Automakers have the option of turning off the air bag when a child is present, or demonstrating a low risk of injury, in tests using a 6-year-old dummy (left) and a 3-year-old dummy (right).

Automakers have several options for testing depending on the design of the air bag system in the vehicle.

NHTSA also is proposing the option of a vehicle crash test that simulates a typical low-speed, pre-crash braking situation.



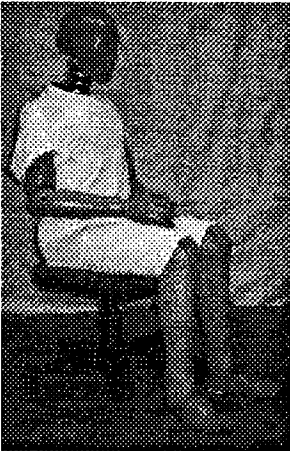
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Out of position adult drivers

Automakers have the option of turning off the air bag if a driver is too close, or demonstrating a low risk of injury, in tests using a 5th percentile female dummy (left).

Automakers have several options for testing depending on the design of the air bag system in the vehicle. Among the options is a vehicle crash test that simulates a typical low-speed, pre-crash braking situation. These tests are designed to demonstrate that the driver air bag system poses little or no danger to a person sitting too close.

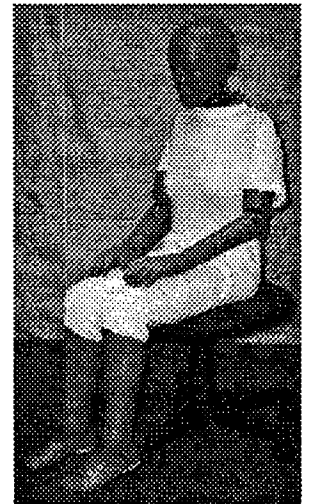


Preserving/enhancing the benefits of air bags

The new rule proposes to maintain and enhance the existing 30 mph vehicle crash test into a rigid barrier using a 50th percentile male dummy (left) secured with a seat belt. The same test using an unbelted dummy, which was made optional in 1997, would become mandatory again with the proposed advanced air bag rule.

NHTSA also is proposing to require two additional 30 mph crash tests into a rigid barrier that use belted and unbelted 5th percentile female dummies (right).

These tests are designed to ensure effective protection for belted and unbelted occupants in high-speed crashes.



All-new sensor test

NHTSA is proposing to require a 25 mph, 40 percent offset vehicle crash test into a deformable barrier. This test is designed to assure that the sensors which trigger the air bag do so at the appropriate time.

Research has shown that in many types of crashes, some sensors may not signal air bag inflation until late in the crash event, after occupants have been thrown forward by deceleration forces or braking.

This test should lead to improved crash sensors that provide enhanced protection for occupants. Although all occupants will benefit from improved sensors, NHTSA is proposing the use of the 5th percentile female dummy (above right) for this test.

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Safety Fact Sheet

Advanced air bag phase-in

Percentage of passenger car and light truck production sold in the United States that will have to meet the new standard:

- ☐ 25 percent in model year 2003 (beginning Oct. 1, 2002)
- ☐ 40 percent in model year 2004 (beginning Oct. 1, 2003)
- ☐ 70 percent in model year 2005 (beginning Oct. 1, 2004)
- ☐ 100 percent in model year 2006 (beginning Oct. 1, 2005)

Dummy dimensions

	<u>Height</u>	<u>Weight</u>
50 th Percentile Male Hybrid III	5 feet 8 inches	171 pounds
5 th Percentile Female Hybrid III	4 feet 11 inches	108 pounds
6 Year Old Hybrid III	3 feet 11 inches	52 pounds
3 Year Old Hybrid III	3 feet 1 inches	34 pounds
1 Year Old CRABI (Child Restraint Air Bag Interaction)	2 feet 5 inches	22 pounds

Safety Fact Sheet

Comprehensive air bag plan

The Department of Transportation's comprehensive plan to preserve the benefits of air bags while reducing their risks:

Existing vehicles

- ✓ Letters/labels mailed to owners
- ✓ On-off switch policy
- ✓ Extensive media, public outreach
- ✓ Coalition efforts – labels, public information

Near-term vehicles

- ✓ Enhanced warning labels
- ✓ Extending on-off switches for certain vehicles
- ✓ Less forceful air bags

Future vehicles

- ✓ Advanced air bags

Air bags: A chronology

Key steps in the Department of Transportation's efforts to preserve the benefits of air bags while reducing their risks:

- May 1995: The National Highway Traffic Safety Administration allows automakers to install on-off switches on new cars and light trucks that have no rear seats or rear seats that are too small to properly accommodate a child seat.
- October 1995: NHTSA issues strong warning that children and adults who are not protected by a seat belt could be seriously injured or killed by an air bag. NHTSA repeats earlier warnings about not placing children in rear-facing safety seats in front of an air bag and urged all children to ride buckled up in the back seat.
- November 1995: NHTSA issues a request for public comment on air bag safety, opening the door to suggestions from all sources about how to reduce risks presented by air bags.
- January 1996: NHTSA issues a call to action on air bag safety. At a public meeting attended by more than 50 organizations, NHTSA lays for foundation for a comprehensive and coordinated approach to air bag safety.
- May 1996: NHTSA launches the Air Bag Safety Campaign, a public-private coalition involving automakers, insurance companies, suppliers and safety groups aimed at educating people about safe transportation in vehicles with air bags.
- November 1996: NHTSA requires that bold new labels with explicit air bag safety warnings be installed in all new vehicles and on child safety seats. Automakers also agree to mail copies of the new labels to the owners of air bag-equipped vehicles that already are on the road.
- December 1996: NHTSA extends for two more years, until August 31, 2000, its regulation allowing on-off switches in new vehicles that cannot accommodate a child seat.
- March 1997: NHTSA gives automakers the ability to more quickly reduce the power of their air bags by 20 to 35 percent. Automakers have installed reduced-power air bags in most 1998-model vehicles.
- November 1997: NHTSA allows consumers fitting certain risk profiles to purchase an on-off switch to temporarily deactivate air bags when needed.
- September 1998: NHTSA issues proposal for new air bag testing procedures that will lead to more advanced air bag systems.

Safety Fact Sheet

9/1/98

Crash Statistics (1997)	
People killed: 41,967	People injured: 3.4 million
Passenger vehicle occupants killed: 32,213	Children age 15 and under killed: 3,157
Annual cost of motor vehicle crashes : \$150.5 billion (1994 number, latest available)	

Estimated Air Bag Benefits (calculated as of 9/1/98)	
Drivers saved: 2,954	Calculating lives saved is done with a mathematical analysis of the real-world fatality experience of vehicles with air bags compared with vehicles without air bags. These are called double-pair comparison studies, and are widely accepted methods of statistical analysis.
Passengers saved: 494	
Total: 3,448 (965 belted, 2,483 unbelted)	
Injury prevention	The combination of seat belts and air bags is 75 percent effective in preventing serious head injuries and 66 percent effective in preventing serious chest injuries.
Deployments	2.6 million air bags deployed from late 1980s to Sept. 1, 1998: • 2.25 million driver-side deployments • 344,000 passenger-side deployments
Number of vehicles with air bags (as of 9/1/98)	53.0 million cars (about 42 percent of cars on the road) 26.0 million light trucks (about 35 percent of light trucks) 79.0 million total

Confirmed Air Bag Deaths (as of 9/1/98)	
Children in rear-facing child safety seats: 15	Children in rear-facing child seats should never be placed in the front seat of an air bag-equipped vehicle because their heads are too close to the air bag cover.
Children not in rear-facing child safety seats: 51 (three restrained, but not properly)	Children 12 years old and younger should be in appropriate restraints and ride in the back seat. This is recommended because children can easily place themselves in danger by not wearing their seat belts properly or leaning forward unexpectedly. Also, the back seat always has been the safest place to ride in vehicles, whether they have air bags or not.
Adult drivers: 42 (11 properly restrained)	Just about everyone -- including short women and older people -- can preserve the benefits of air bags, while reducing or eliminating the risks, by buckling their seat belts and keeping at least a 10-inch distance between the air bag cover and their breastbone.
Adult passengers: 5 (two restrained)	Proximity to the air bag has been the issue in nearly every death.
Total: 113	

(OVER)

Seat Belt Usage
U.S. rate based on state surveys: 69 percent
Children under 5 in restraints: 61.2 percent
Buckle Up America Campaign goals for seat belt usage: 85 percent by 2000
Human benefit of meeting the goal: 4,194 lives saved and 102,518 injuries prevented
Cost savings from meeting the goal: \$6.7 billion per year
The seat belt usage rate in the United States lags far behind most industrialized countries that have strict seat belt use laws. For example, Canada, Australia, the United Kingdom, Germany and Sweden have usage rates of 90 percent or better.

Air Bag Effectiveness (frontal crashes)
Car drivers: 31 percent fatality reduction
Car Passengers: 27 percent fatality reduction
Light truck drivers: 27 percent fatality reduction
No estimate for light truck passengers because there are too few passenger air bags in those vehicles to have statistically valid experience.

Seat Belt Effectiveness
Preventing deaths in cars: 45 percent effective
Preventing serious injuries in cars: 50 percent effective
Preventing deaths in light trucks: 60 percent effective
Preventing serious injuries in light trucks: 65 percent effective
Annual lives saved: 10,000



News:

U.S. Department of
Transportation

Office of the Assistant Secretary for Public Affairs
Washington, D.C. 20590
<http://www.dot.gov/briefing.htm>

FOR IMMEDIATE RELEASE

Monday, August 31, 1998

NHTSA 44-98

Contact: Tim Hurd

Telephone: 202-366-9550

**Transportation Secretary Slater Announces
Proposal for New Small Female Crash Dummy;
New Science Will Lead to Improved Air Bag Safety**

U.S. Transportation Secretary Rodney E. Slater today announced proposed design and performance specifications for a new crash dummy representing small women, one of the key steps in the development of advanced air bag rules.

"Safety is President Clinton's highest transportation priority, and this proposal helps prepare the way for advanced air bags," U.S. Transportation Secretary Rodney E. Slater said. "It continues our comprehensive series of actions to preserve the benefits of air bags and minimize their risks, in this case to small women."

The 5th percentile female dummy with advanced instrumentation, proposed by the department's National Highway Traffic Safety Administration (NHTSA), is the latest addition to the Hybrid III crash dummy family that began with the 50th percentile Hybrid III male dummy in June 1986. Two months ago, NHTSA proposed a 6-year-old Hybrid III child dummy. Other "family" members will include a Hybrid III 3-year-old and a 12-month-old CRABI (Child Restraint Air Bag Interaction) dummy -- all designed to assess injury potential to a range of occupant sizes.

"Improved safety for smaller women will result from this new scientific tool," said Ricardo Martinez, M.D., NHTSA administrator. "We can better evaluate the effects of air bag deployment and quickly put our new knowledge to work in the real world, making it safer for them."

The 5th percentile female Hybrid III dummy has been used for general research purposes for some time, but the need for its certification for official compliance testing has become more urgent because of safety problems that current air bags may pose for small women who are unbuckled or out of position.

August 31, 1998
NHTSA 44-98

The new 5th percentile female dummy has a multi-segment and highly instrumented neck that makes it better able to mimic human neck responses and measure the injury potential. This is critical because neck injuries are one of the main causes of air bag-related fatalities involving short women. The new dummy also measures chest compression, spinal injury, and seat belt effectiveness.

After extensive testing, NHTSA now is proposing that the 5th percentile female Hybrid III dummy be added to Part 572 of the Code of Federal Regulations. The issue of requiring the use of the new dummy as part of Federal Motor Vehicle Safety Standard 208 will be addressed in the advanced air bag rulemaking.

The proposal for the 5th percentile female Hybrid III dummy will be published in the Federal Register and a drawing package will be placed in NHTSA's docket. Interested parties may comment on the proposal within 90 days of the Federal Register notice.

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NOTE: A photograph of the new 5th percentile female Hybrid III dummy is available in several formats at www.nhtsa.dot.gov in the "Press Release" section.



U.S. Department of
Transportation

News:

Office of the Assistant Secretary for Public Affairs
Washington, D.C. 20590
<http://www.dot.gov/briefing.htm>

FOR IMMEDIATE RELEASE

Thursday, June 25, 1998

NHTSA 33-98
Contact: Tim Hurd
Telephone: 202-366-9550

NHTSA Proposes New Child Crash Dummy; New Science Will Lead To Improved Family and Child Safety

The National Highway Traffic Safety Administration today proposed design and performance specifications for a new 6-year-old child crash dummy, one of the key steps in the development of pending advanced air bag rules.

"Safety is President Clinton's highest transportation priority, and this proposal helps prepare the way for advanced air bags," U.S. Transportation Secretary Rodney E. Slater said. "It continues our comprehensive series of actions to preserve the benefits of air bags and minimize their risks, in this case to children."

The advanced 6-year-old dummy is the first addition to the Hybrid III crash dummy family proposed for use in air bag tests since the 50th percentile Hybrid III male dummy was adopted in June, 1986. Other "family" members will include a Hybrid III 5th percentile (small) female, a Hybrid III 3-year-old, and a 12-month-old CRABI (Child Restraint Air Bag Interaction) dummy - all designed to assess injury potential to a range of occupant sizes.

"Improved safety for children will result from this new science," said Ricardo Martinez, M.D., NHTSA administrator. "We can better evaluate the effects of air bag deployment and quickly put our new knowledge to work in the real world, making it safer for them."

The 6-year-old Hybrid III dummy has been used for general research purposes for some time, but the need for its certification for official compliance testing has become more urgent as new science has pointed to safety problems that current air bags may pose for children who are unbuckled or out of position. While the 6-year-old dummy has been useful for evaluating child restraints, it was not designed to measure the types of injuries that unbelted or out-of-position children can suffer from air bags.

The new Hybrid III 6-year-old dummy, for example, has a multi-segment and highly instrumented neck that makes it better able to mimic human neck responses and measure the injury potential. This is critical because neck injuries are one of the main causes of child fatalities due to air bags.

June 25, 1998
NHTSA 33-98

After extensive testing, NHTSA now is proposing that the Hybrid III 6-year-old dummy be added to Part 572 of the Code of Federal Regulations. The issue of requiring the use of the new dummy as part of Federal Motor Vehicle Safety Standard 208 will be addressed in the advanced air bag rulemaking.

The proposal for the Hybrid III 6-year-old dummy will be published in the Federal Register and a drawing package will be placed in NHTSA's docket. Interested parties may comment on the proposal within 90 days of the Federal Register notice. When the new Hybrid III 6-year-old dummy is finalized, NHTSA will publish a user's manual and digital descriptions of its patterns and molds.

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NOTE: A photograph of the new 6-year-old Hybrid III dummy is available in several formats at www.nhtsa.dot.gov in the "Press Release" section.

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QUESTIONS FOR

ADVANCED AIR BAG ROLLOUT

1. What are the costs and benefits of this rulemaking? How many of the lives lost so far would have been saved by the measures proposed by the agency? (NPP)

Minimize Risks

Air bags have been an extremely successful, life saving technology. To date they have saved nearly 3,500 lives. Unfortunately, 113 people have been killed by air bags, most of whom have been out-of-position because they were unrestrained or improperly restrained or were too close to the air bag when it deployed. This proposal will virtually eliminate the risk for out-of-position occupants. If this improved technology had been universally available, almost all (106 to 113) of the people killed by air bags would be alive today.

Preserve and Enhance Benefits

This proposal restores full scale barrier testing that has been the basis for frontal crash worthiness performance assessment for more than twenty years. Full scale tests evaluate the occupant protection performance of the entire vehicle system and promote development of air bag and vehicle structural designs that work over a wide range of crash environments. The proposal also introduces new dummy designs and injury measures to more fully represent the wide variety of vehicle occupants as well as injury mechanisms occurring in the real world environment. The bottom line is that up to an additional 430 people might be saved each year compared to air bag systems developed to meet just a sled test requirement.

Buckle Up

Advanced air bags will never eliminate the need for all occupants to wear safety belts, and the back seat remains the safest place for children.

Costs

This is a flexible, performance based rule which provides manufacturers with significant choices when designing advanced air bag systems. Costs for installing advanced air bag technology range from \$22 per vehicle for a system with a passenger side weight sensor and dual-stage inflator to \$162 per vehicle for a more complex system that would feature sophisticated proximity sensor

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systems to detect out of position occupants. The manufacturers will decide which systems to install.

Although there will be significant societal cost savings from lives saved and injuries prevented, there are also significant cost savings to be realized by limiting air bag deployments to crashes where their life saving benefits are required. We estimate that consumers will save up to \$ 158 per vehicle from reduced property damage by eliminating air bag deployments in these crashes. This means that consumers, as a whole, might actually realize cost savings (that is, the increased costs associated with new technology would be more than offset by property damage savings) from advanced air bag systems. This occurs when property damage is avoided by minimizing deployments where the life saving performance of air bags is not needed. (Background: In a worst case scenario, for advanced air bag designs that are at the high end of the cost spectrum, we estimate that the net cost per life saved could be as high as \$ 4.8 million.)

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2. Why is the proposal so complex? How many tests are there now? How many more will the proposal add? (NPS)

The safety performance requirements in this proposal will minimize the risks of air bag deployments to infants, children, and out-of-position small adults while concurrently preserving and enhancing the benefits for most restrained and unrestrained occupants. The agency is proposing methods of assessing the protection to different size occupants in a variety of seating positions and out-of-position situations. The proposal provides manufacturers with the flexibility, through various options, to utilize the best available advanced air bag technologies to meet these requirements.

Presently, Federal Motor Vehicle Safety Standard number 208, "Occupant Crash Protection," specifies two procedures: testing with the large adult (50th % male) normally seated: (1) restrained and (2) unrestrained in 30 mph crashes. These procedures, although not requiring assessment of safety performance for other conditions (i. e., high risk groups - infants, children and out-of-position small adults), do not restrict manufacturers from evaluating and designing for these conditions.

This proposal requires manufacturers to assure safety to high risk groups and to preserve and enhance the present benefits. Seven additional procedures are specified:

- (1) testing with infant in rear facing child safety seat in front right seat,
- (2) testing with children in right front seat; 3 year old,
- (3) testing with children in right front seat; 6 year old,
- (4) testing with the small adult (5th % female) normally seated; restrained
- (5) testing with the small adult (5th % female) normally seated; unrestrained,
- (6) and testing with the small adult; out-of-position, and
- (7) offset deformable barrier crash testing with the small adult to assess air bag sensors and deployment timing.

The agency proposes to use new and improved injury criteria to assess injury to more areas of the body and to better evaluate the levels of injury.

Much of the perceived complexity of the proposal is due primarily to the variety of options allowed to manufacturers. These options are to ensure that the manufacturers have full flexibility in use of the best available technology.

The manufacturers have petitioned for many of these new requirements (out-of-position children and small adults). The agency has routinely met with the manufacturers and air bag suppliers as these requirements have evolved.

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3. Will the agency be able to cope with the increased testing burden and adequately monitor the effectiveness of the vehicle manufacturers' compliance efforts? (NSA)

NHTSA is confident that it will be able to effectively monitor the manufacturers' compliance with the advanced air bag rule. As is done today, the agency's Office of Vehicle Safety Compliance (OVSC) would require manufacturers to provide the data on which they based their certification of compliance. The agency would then make a judgment as to where to focus the compliance testing efforts.

It is likely that the agency would need additional funds to acquire the new family of dummies and to conduct an adequate number of tests, particularly since there may be a need to purchase multiple vehicles and conduct multiple tests to adequately assess compliance of some vehicle models. Without such funds, a reduction in compliance testing and oversight in other areas would probably have to occur.

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4. Why is the agency dropping the sled test and reinstating the barrier test? Won't this lead to "old-style" killer air bags? Won't this make it much harder and more costly for vehicle manufacturers to design and produce safe air bags? (NPS)

The sled test measures only a small part of the vehicle crash protection system. It does not include vehicle structural design effects nor does it evaluate the actual air bag deployment timing. The sled test was an emergency interim test to make it easier for manufacturers to quickly redesign air bags. Given time, manufacturers could have made the changes under the barrier test conditions. Tests of redesigned systems indicate that even under the time constraints, most redesigned systems meet the barrier test condition for unrestrained occupants.

Without the barrier test and its 30 degree angle requirement, manufacturers have a free hand on providing significantly smaller air bags that will reduce safety in many frontal crashes. (The agency estimates that over 300 lives would not be saved annually if manufacturers switched to significantly smaller air bags.)

The barrier test is needed to assess overall performance of the frontal crash occupant protection system (including the structure and the restraint system) and to assure protection for unrestrained occupants. Air bags have saved the lives of more than 2,400 unbelted occupants to date. The barrier test assures that these benefits are preserved. With the advanced technology, it is not necessary for manufacturers to make a compromise between minimizing the risks to infants, children, and small adults and preserving protection for the unrestrained population. It is feasible and cost effective to do both.

The variety of options will allow manufacturers the flexibility to meet protection requirements for the high risk groups and preserve protection for unrestrained occupants.

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5. How much lead time is the agency providing? How are the requirements being phased-in? When will vehicles with the new air bags begin appearing in the showroom? (NPP)

Vehicle and air bag manufacturers have already developed and are offering for sale air bag systems that will meet many of the requirements proposed here today. They also have accelerated development programs to produce even more sophisticated and effective air bag technologies in the very near future. We have worked very closely with these manufacturers to develop a comprehensive understanding of these development programs and are confident that the phase-in schedule proposed here is feasible.

Briefly, our proposal today requires a phase-in of:

- 25 percent of each manufacturer's fleet for MY 2003 (starting Sept. 1, 2002)
- 40 percent for MY 2004
- 70 percent for MY 2005
- All vehicles for MY 2006 and thereafter.

6. How many years will it be before this proposal starts significantly affecting the number of deaths and injuries caused by air bags?

We are already seeing safety benefits from the interim steps we have taken to address this issue. Manufacturers began offering depowered air bags in the MY 1998 fleet. Weight sensors on the passenger side and dual speed inflators are currently being offered and married with improved safety belt systems with pre-tensioning devices. Our public education campaign with our many partners has been very active in explaining the risks of air bag deployments to out of position occupants. Of course, we must continue to support these educational efforts. We also have underway President Clinton's Buckle Up America campaign, as advanced air bags will never eliminate the need for all vehicle occupants to wear safety belts, and the back seat remains the safest place for children.

As more manufacturers offer advanced air bag technology, we should see immediate pay offs. About 15 million vehicles are sold each year in this country and, as advanced air bag technology is made available, safety benefits will immediately take place.

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7. How much of the technology needed to meet the proposal's requirements is available now? As to technology not yet available, how do you know if it will be ready in time? How does the agency know that it will really work? What unintended consequences and dangers are possible if it doesn't work correctly? (NRD)

In developing the NPRM, the agency went to great lengths to understand the state of the art in advanced air bag technology. In addition to meeting with individual automobile manufacturers and suppliers, the agency commissioned a study by the Jet Propulsion Laboratory (JPL) through an interagency agreement with the National Aeronautics and Space Administration. The findings regarding the technologies generally were consistent among the various parties, and can be summarized as follows (and as found in the JPL report):

- The industry is developing a number of promising technologies to meet the air bag design challenges. By Model Year 2001, improved crash sensors, belt use sensors, and seat position sensors can be available to provide more information about the crash and occupants. If aggressive development is undertaken, belt spool-out sensors and static proximity sensors could be available to provide improved occupant position determination. Improvements in response include automatic suppression to prevent inflation, two-stage inflators, compartmented bags, variable venting and advanced safety belts. With these improvements will come a reduction in the keep-out zone and more tailored response which will reduce the risk of injury relative to depowered air bags.
- By about Model Year 2003, occupant weight and position sensors should be available to be used with sensors and response capabilities previously developed. These systems should be able to remove most of the risk of injury from deploying air bags.

The agency notes that the JPL report projected technology availability on a limited number of contacts with vehicle manufacturers and suppliers, and that the state-of-the-art of advanced air bag technology is in a high state of flux. NHTSA has had more extensive and more recent contacts than JPL with suppliers and vehicle manufacturers. Based on confidential information shared with the agency during those contacts, the agency believes that the JPL report is conservative with respect to where some suppliers are now in developing new technologies and also with respect to the model year when some very highly advanced air bag designs will first be introduced.

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8. What will this proposal accomplish that depowering hasn't already accomplished? Based on your testing and crash investigations, what can you say about the effectiveness of depowering in preventing air bag deaths? In protecting occupants in moderate and high speed crashes? (NRD)
- *The proposal is structured both to **minimize the risks** as well as **enhance the benefits of air bags across the range of crash severities and for occupants of all ages**. NHTSA published a final rule on March 19, 1997, to facilitate the rapid redesign of air bags so that they inflate less aggressively. The agency made a policy decision to sacrifice some of the benefits in high severity crashes in order to provide an immediate, yet partial, solution to the problem of the fatalities and injuries that current air bag systems are causing in relatively low speed crashes to a small, but growing number of children and occasionally to adults. This proposal has been written in order to encourage the use of advanced air bag technology and **get away from the one-size-fits-all** air bag by developing test procedures for different sized occupants (from infants to adults) at various crash severity levels.*
 - If the fleet consisted entirely of pre-MY 1998 vehicles (fully powered air bags), we estimate there would be 214 people killed annually by air bags.

If the fleet consisted entirely of MY 1998 vehicles (depowered air bags), we estimate there would be 186 people killed annually by air bags. MY 1998 depowering would save 28 people. This estimate is based on the reduced risk of neck and chest injury found in tests conducted by VRTC.

If the fleet consisted entirely of vehicles with advanced air bags, we estimate there would be 0 to 13 people killed annually by air bags. Advanced air bags could virtually eliminate the risk to out-of-position occupants.

- Based on NCAP testing (35 mph) of 48 matched pairs (pre-MY 1998 vehicles and MY 1998 vehicles), *there appears to be no adverse effect of depowering to date on **belted** occupants*. In fact, the only difference in test scores among the vehicles was a reduced potential for neck injury in the MY 1998 vehicles.

Vehicles that are depowered to the MY 1998 levels on the driver side, still meet the requirements in the 30 mph unbelted test. Six MY 1998 vehicles were tested at 30 mph with **unbelted** dummies and the results compared to the test results of pre-MY 1998 vehicles. MY 1998 vehicles met all the injury criteria requirements on the driver side. The chest g's reduced on the average by 3 g's, thus reducing the probability of chest injury by a small amount.

Vehicles depowered to their MY 1998 levels can meet a 30 mph unbelted test. The

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margin of compliance is reduced. Passenger-side results indicate that one vehicle exceeded the chest g requirement of 60 g's. However, overall the average chest g's increased by 5 g's compared to the pre-MY 1998 vehicles, thus reducing the margin of safety. This may be due to changes such as decreased air bag volume and peak pressure that resulted from the MY 1998 redesign. This increase in chest g's is estimated to result in a reduction in the benefits for unrestrained passengers of 18 to 96 lives compared to pre-MY 1998 vehicles.

Limited tests conducted at VRTC of 5 vehicles on the driver side and 6 vehicles on the passenger side, indicate a reduction in the risk of fatal neck and chest injury for MY 1998 vehicles. Based on this data, NHTSA has made a preliminary estimate that MY 1998 air bags will save 28 (22 drivers and 6 passengers) out of an estimated 214 people that would have been killed annually by air bags.

- As of August, 1998, the SCI program has documented 68 vehicles with deployments of redesigned air bags in 66 initiated cases (two cases contained two MY98 redesigned air bag equipped vehicles).

Sixteen cases are in our final stage of quality control and should be publicly available within 30 days.

There are 6 fatalities in vehicles equipped with a redesigned air bag. NHTSA is studying the fatalities in three possible scenarios:

First, the crash severity is so extreme that it is not survivable. Examples would include catastrophic intrusion into the occupant compartment. NHTSA has documented 6 fatalities that would fall into this category.

The second scenario would be cases where the vehicle occupants bottom out the air bag in a moderate crash pulse (speed changes of 19 to 24 MPH). In these cases the restraining force is too low so as to provide sufficient cushioning of the occupant. To date, NHTSA has not confirmed any cases that would fall into this category.

The third type would be occupants that NHTSA has confirmed that the fatalities are related to air bag deployment. The SCI has an active investigation on a vehicle equipped with redesigned air bags in which a child seated on the front right occupants' lap received fatal injuries. However, the SCI is awaiting medical records on this case. Once these records are received, the SCI staff will analyze all of the evidence prior to making any conclusions.

A noteworthy success story case which NHTSA has documented to date involves a driver that

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was not wearing the seat belt. The driver fell asleep, drifted off the road at around 50 miles per hour and struck the front of a parked heavy truck. The case vehicle's front underrode the front bumper of the truck resulting in late deployment of air bag. Due to the late deployment, the unrestrained driver was out of position forward at the time of deployment. Despite the fact that the vehicle was severely damaged, the driver did not receive life threatening injuries.

The agency anticipates having approximately 100 cases initiated, with cases available for review as soon as they have been quality controlled. We will have a wide variety of types of crashes from low severity to high severity, from a number of manufacturer's vehicles and for occupants of various age, sex, weight and height categories. We expect to be able to begin comparisons of vehicle crashes with and without redesigned air bags.

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9. Why did the agency issue the information requests that it sent to vehicle manufacturers (NRD) and air bag suppliers (NPS)? What did it learn from their responses? How has that information affected the agency's proposal?

Vehicle Manufacturers:

NHTSA has received data from the nine automobile manufacturers responding to NHTSA's Information Request for "Air Bag Technology in Light Vehicles"—Chrysler, GM, Ford, Toyota, Nissan, Honda, MB, VW, and Volvo.

These data have been reviewed, and are being used to establish a database on air bag and seat belt technology. The database will contain information on all vehicles produced by the nine manufacturers since 1990 with air bags installed. From information in the final database trends in changes in air bag design parameters can be studied.

A program was developed to analyze the manufacturer's response to thirty-four questions selected from the fifty-seven questions contained in the Information Request.

To support this effort spread sheets were created for the vehicles. The effort to develop the database is well underway. To perform detail and summary analysis, a prototype analytic tool was developed. This tool was used to extract answers from questions generated to assess the capability and accuracy of data retrieved from the preliminary database when compared to the information contained in the spread sheets. An Executive Information System has also been developed to tie together all SAS programs.

Besides the database effort, the air bag inflator tank test curves from the responses to the IR for both driver and passenger side inflators have been scaled and normalized for values of peak pressure and pressure rise rate. One hundred eighty-four sets of curves representing 322 vehicle models were analyzed. Peak pressures and pressure rise rates for both redesigned and pre-redesigned driver and passenger side inflators have been compared. Initial results indicate the manufacturers have depowered the airbag inflators between the 1997 and 1998 model years. One figure-of-merit of airbag depowering can be based on the inflator tank test. Based on these tests, *manufacturers have depowered BOTH the peak output of the inflator and well as the rate at which the airbag inflates.* Analysis of a representative, but limited, subset of the tank test data indicate the peak pressure has been depowered by 13 percent for the driver and 10 percent for the passenger; and the inflation rate has been depowered by 23 percent for the driver and 14 percent for the passenger.

The agency's goal is to complete the database and analytical effort by mid November.

Air Bag Suppliers

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NHTSA has received data from the nine air bag suppliers responding to NHTSA's Information Request for "Advanced Air Bag Technology" -- Autoliv, Bosch, Breed, Delphi, NEC, NSK, Siemens, Takata, and TRW.

The agency sent the information request to air bag suppliers to verify that air bag technologies would be available that would allow vehicle manufacturers to comply with the new rule within the allotted time frame. The submissions reconfirmed the progress of various approaches and technologies. Vehicle manufacturers have two options to comply with the new rule - air bags that inflate safely or suppression of the air bag for at-risk occupants. Both of these options require the development of new crash and occupant sensors to provide the data necessary for the air bag system to make intelligent choices regarding whether and/or how to deploy the air bag. Safe inflation requires the development of new inflators and air bags that can achieve this goal. Suppression requires the development of technologies to prevent inflation under certain conditions. The information submitted by the air bag suppliers shows that some of these technologies are already available and in production vehicles, and all will be available by the beginning of the phase-in period. The information also indicates that the anticipated costs of these technologies is within the range of NHTSA's estimates.

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10. Won't this proposal add complexity to air bags and create more opportunities for air bag failures and inadvertent deployments? (NPS)

The options provided will give the manufacturers the flexibility to seek the most effective and reliable technology at any given time. It will assure that manufacturers take real world situations into account when designing air bag systems.

Many of the new requirements have been requested by the manufacturers. Manufacturers have been testing to some of these conditions for several years and essentially have asked NHTSA to define the performance levels for these tests.

By adding new and more stringent safety performance requirements, manufacturers will need to improve their basic air bag designs and quality control. The more stringent assessments of the air bag systems should provide a better evaluation of the total system performance which should lead to improved performance and reliability in actual crashes.

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11. Is the agency going to continue to allow on-off switches in certain new vehicles? As retrofit devices in vehicles-in-use? (NCC)

NHTSA's current rules on on-off switches are part of the agency's comprehensive strategy to preserve the benefits of air bags for the vast majority of the motoring public, while reducing the risk of serious or fatal injury to a small, but discrete, segment of the population which faces special risks from air bags.

Our proposal for advanced air bags would require air bags to be redesigned to minimize risks to infants, children, and other occupants who currently face special risks from air bags. The agency expects therefore that, as advanced air bags are introduced by the auto industry, there will no longer be a need for on-off switches.

The agency is therefore proposing to phase out the provisions permitting on-off switches as requirements for advanced air bags are phased in. In essence, the proposal would not permit either original equipment or retrofit on-off switches for vehicles with advanced air bags.

The agency is, however, specifically requesting public comments on whether retrofit on-off switches should continue to be available under narrower eligibility criteria, revised to be appropriately reflective of the protective capabilities of advanced air bag technology. The agency will carefully evaluate those comments before reaching a final decision.

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12. In this rulemaking, why is the agency going against the recommendations of the vehicle manufacturers and insurers about retaining the sled test as an alternative to the barrier test? (NRD)

- NHTSA in fact has taken action on all the recommendations provided by the automobile manufacturers and insurers. The only area of disagreement was that of reinstating the unbelted barrier crash. The recommendations where there is agreement include:
 - Efforts must continue to educate the public on air bag and seat belt safety and to enact and enforce primary belt use laws.
 - Priorities be established for occupant protection improvements.
 - Rulemaking on advanced air bag technology should be practicable, objective, meet the need for motor vehicle safety, and be performance-oriented and data driven.
 - NHTSA should make the real-world evaluation of vehicles with depowered air bags one of its highest priorities.
 - The “rating” of air bags by comparison of selected design characteristics would be meaningless and misleading.
- NHTSA published a final rule on March 19, 1997, to facilitate the rapid redesign of air bags so that they inflate less aggressively. More specifically, the agency adopted an unbelted sled test protocol as an alternative to the full scale unbelted barrier crash test requirement. The agency took this action to provide an immediate, yet partial, solution to the problem of the fatalities and injuries that current air bag systems are causing in relatively low speed crashes to a small, but growing number of children and occasionally to adults. Unlike a full scale vehicle crash test, a sled test does not, and cannot, measure the actual protection an occupant will receive in a crash. The current sled test measures limited performance attributes of the air bag, but not the performance provided by the vehicle occupant crash protection system or even the full air bag system.

Several inherent deficiencies prevent the generic sled test from being an adequate measure of frontal crash protection:

- *The current generic sled pulse does not replicate the actual crash pulse of a vehicle.* The actual crash pulse of a vehicle is a critical factor in occupant protection. The pulse takes into account the specific manner in which the front of the vehicle deforms during a crash, thereby absorbing energy. However, the current sled test uses an identical crash pulse to test all vehicles, which is somewhat typical of the crash pulse of a large passenger car. Light trucks and smaller cars typically have much “stiffer” crash pulses than that of the

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sled test. This means that deceleration occurs more quickly than is indicated by the sled test. Thus, the sled test result may falsely portray the occupant protection characteristics of a vehicle.

- *The sled test does not replicate the actual timing of air bag deployment.* Deployment timing is a critical component of the safety afforded by an air bag. If the air bag deploys too late, the occupant may already have struck the interior of the vehicle before deployment begins. Air bag deployment timing is determined by parts of the air bag system which are not tested during a sled test, i.e., the crash sensors and computer algorithm. While this performance is tested in a barrier test, there is no crash involved in a sled test to trigger air bag deployment based on the performance of the crash sensors and computer algorithm. Instead, the air bag is simply deployed at a predetermined time during a sled test. The time is artificial – it may have nothing to do with the time when the air bag would deploy during an actual real world crash of the same vehicle
- *The sled test does not measure protection and harm from actual vehicle systems, e.g., steering wheel intrusion into the driver, or pillar or toe-board intrusion and related injuries to the driver or a passenger that may result.* Since a sled test does not involve any kind of crash, it does not test for such intrusions in crashes. Thus, the sled test may falsely indicate that a vehicle provides good protection based on dummy injury criteria when, in actuality as a result of steering wheel or other intrusion, the vehicle provides poor protection.
- *The sled test does not measure how a vehicle performs in oblique crashes.* It only tests a perpendicular impact. Real world frontal crashes occur at varying angles, resulting in occupants moving toward the steering wheel and instrument panel in a variety of trajectories. The angle test component of the barrier test requirement ensures that a vehicle is tested under these real world conditions.

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13. Why is the agency still requiring testing using unbelted dummies? Why protect people who don't wear their seat belts? Doesn't the effort to protect nonusers require that air bags be designed in a way that endangers young children and small adults? (NPS)

This proposal is aimed at providing protection to all occupants, whether or not they are belted. The proposal includes tests to preserve protection for unrestrained adults and to minimize risks to unrestrained infants, children, and out-of-position adults. Although belt use is approaching 70 percent, approximately 50 percent of vehicle occupants that are involved in fatal and serious injury causing crashes remain unbelted. Teenagers, who represent the group that is least likely to use safety belts, are particularly at risk. Vehicle crashes are the leading cause of fatalities to teenagers. The study of air bag crashes indicates that more than 2400 unrestrained occupants have been saved by the air bag. Many more devastating head and chest injuries have been eliminated. The proposed tests will preserve and enhance this protection for those who continue not to take full advantage of the protection systems provided in modern vehicles.

For unrestrained and the restrained children, the proposed tests will significantly reduce any adverse risks due to air bag deployment. With the available advanced technology, the agency has concluded that it is possible to minimize the risks to infants, children, and out-of-position adults, while continuing to provide benefits to the unbelted population.

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14. Does the agency plan to hold a meeting to provide an opportunity for a thorough public discussion of the technical and policy aspects of this important rulemaking? (NPS)

The agency will hold a public hearing during the latter half of the 90 day comment period. It will focus on the injury criteria and crash test procedure reports. The agency wants to allow every opportunity for interested parties to provide their views on this advanced air bag proposal.

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15. What effect will this rulemaking have on the agency's effort to persuade parents to place their kids in the back seat? (NCC)

As advanced air bags are introduced, the agency will continue to emphasize to parents that children should be placed in the back seat whenever possible. It is very important for parents to realize that whether or not a vehicle has air bags, the back seat is always much safer for children. In fact, our studies of vehicles without air bags indicate that restraining children in the back seat instead of the front seat reduces the risk of death in a crash by 27 percent. The same percentage applies to unrestrained children. To put this in perspective, the number of children killed each year while riding in the front seat of a vehicle is over 500. If parents had placed those children in the back seat, 135 of those children would still be alive because the back seat is a much safer seating environment for reasons that have nothing to do with air bags.

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16. Why does the proposal provide so many options? Why doesn't the agency just require use of the "best technology?" (NPS)

The agency is providing the various options to be sure that vehicle manufacturers and air bag system suppliers will have the maximum flexibility in developing and utilizing the best available advanced technology. In some cases, these technologies are still evolving. There is presently no clear "best technology." These options will allow manufacturers the most latitude possible consistent with our safety performance goals and should result in the use of the best technology as determined by the manufacturers for their particular vehicles.

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17. What is the status of the agency's processing of requests for retrofit on-off switches? (NCC)

The agency's rule permitting motorists to request retrofit on-off switches in appropriate circumstances is part of the NHTSA's comprehensive strategy to preserve the benefits of air bags for the vast majority of the motoring public, while reducing the risk of serious or fatal injury to a small, but discrete, segment of the population. The rule, published in November 1997, requires those persons desiring a switch to obtain authorization from the agency by submitting an authorization form specifying their membership in a risk group and acknowledging that they understand the risk involved in turning off an air bag. To assist people in making an informed decision, the agency created a consumer-friendly booklet and conducted a broad publicity campaign when the rule was issued. The agency also set up a computerized system to quickly process authorization requests and track the rate of demographic patterns and switch installations. The authorization process is working as envisioned. Authorization requests are taking only one to two days to process. Additionally, the number of authorization requests is consistent with the portion of the population at risk. To date, NHTSA has authorized approximately 37,000 requests for on-off switches, although it has only received verification that approximately 1,900 switches have been installed.

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18. What is the status of the agency's investigations of possible air bag defects? (NSA)

NHTSA's Office of Defects Investigation (ODI) is currently conducting five defect investigations into possible air bag defects. Each of these involves allegations of inadvertent deployment of air bags, either while starting the vehicle (usually due to an electrical short circuit) or due to driving over a bump, pothole, curb, or road debris (usually due to improper calibration of the air bag sensor). The investigations cover the following vehicle models: Subaru Impreza (1994-95) and Legacy (1995-96); Mazda 626 and MX-6 (1995-96); Dodge and Plymouth Neon (1995); Chrysler Minivans (1994); and Mitsubishi Mirage, Dodge and Plymouth Colt, and Eagle Summit (1994).

ADDITIONAL BACKGROUND: During the past three years, there have been 11 safety recalls to address the inadvertent deployment of air bags, involving approximately 1.9 million vehicles. Five of these 11 recalls (covering 1.6 million vehicles) were influenced by NHTSA investigations. There have been several other recalls to correct defects in air bag systems due to misassembly, and there have been several recalls to remedy vehicles whose air bags failed to comply with FMVSS No. 208.

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19. This proposal goes to great lengths to ensure that frontal air bags perform safely. Is the agency considering applying similar tests to side and head air bags? (NRD/NPS)

Side and head air bags are installed voluntarily by manufacturers. They are not required by Federal standards. When deciding to install these systems, auto manufacturers have an obligation of due diligence to assure that these devices do not cause harm. However, due to the concerns raised by injuries and fatalities to both children and adults in low severity frontal crashes, the agency is examining the performance of side and head air bags.

- An extensive research effort has been initiated in which out-of-position tests are being conducted to assess the risks that such systems provide. These tests are being conducted using both child dummies and the 5th percentile female dummy.
- Furthermore, the agency is monitoring the real world performance of these systems by including them in the agency's Special Crash Investigations.
- The agency is gathering data from manufacturers about the testing they have performed with these systems.

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20. Why is the agency proposing now to upgrade the injury criteria? What effect will that have on the ability of the vehicle manufacturers to comply with the agency's other proposals? (NRD)

The combination of the newly proposed test procedures and these state of the art injury criteria are designed to accurately predict the level of injury in order to minimize risk of injury to occupants, both adults and children, who are in close proximity to the air bag module when it deploys and to enhance the safety benefits for higher speed crashes.

- To ensure protection for the adults and children, injury criteria are proposed for all the dummy sizes included in the NPRM, namely, the 50th percentile adult male, the 5th percentile adult female, the 6 year-old, the 3 year-old, and the 12 month old infant. Injury criteria for the 95th percentile male will be added when the dummy is incorporated into regulation.
- The proposed injury criteria represent the state of the art knowledge of the mechanisms of automotive injury and the tolerances of both adults and children. In addition to maintaining protection for the head and legs, two new injury criteria are being proposed for the neck and chest. The new neck injury criteria, termed Nij, uses a biomechanical principle of evaluating combined loads on the neck. So, although a particular tension load applied to the neck or a particular bending moment applied to extend the neck may not be injurious in isolation, the combination of the two may be injurious. Similarly, the newly proposed chest injury criteria, termed the Combined Thoracic Index (CTI), evaluates the combination of chest deflection and chest acceleration.

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21. Is this proposal consistent with TEA21? (NCC)

Yes. As part of the NHTSA Reauthorization Act of 1998, which was part of TEA21, Congress required the agency to conduct rulemaking to improve air bags. The Act directed NHTSA to issue, not later than September 1, 1998, "a notice of proposed rulemaking to improve occupant protection for occupants of different sizes, belted and unbelted, while minimizing the risk to infants, children, and other occupants from injuries and deaths caused by air bags, by means that include advanced air bags."

Our proposal includes performance requirements intended to accomplish each of those goals. It is also consistent with other aspects of the legislation, such as the specified dates for phasing-in the new requirements.

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22. Why isn't the agency proposing to establish a minimum deployment threshold? (NPS)

The agency was petitioned to establish a specific higher threshold of deployment. After careful study, it was concluded that such a requirement would be unnecessarily design restrictive, given the available alternatives. A mandatory threshold requirement would discourage the use of other approaches that may offer greater potential benefits. The agency is proposing to allow the use of a higher deployment threshold as one method for minimizing risks. One of the proposed options, the out-of-position dynamic test, could be met by the use of a higher threshold level.

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DOCUMENT NO. AND TYPE	SUBJECT/TITLE	DATE	RESTRICTION
001. list	suggested witnesses for airbag rollout event (1 page)	nd	b(6)

COLLECTION:

Clinton Presidential Records
Office of Science and Technology Policy
Jerold Mande
OA/Box Number: 13034

FOLDER TITLE:

Air Bags: [Correspondence] [1]

2008-1524-F
kc1218

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P1 National Security Classified Information [(a)(1) of the PRA]
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DOCUMENT NO. AND TYPE	SUBJECT/TITLE	DATE	RESTRICTION
002a. memo	Cathey Hickey of Advocates for Highway and Auto Safety to Tim Hurd re Advocates "Saved by the Air Bag" group members (partial) (1 page)	09/04/1998	b(6)

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FOR HIGHWAY
AND AUTO SAFETY**

002a

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David C. Turner
Independent Insurance Agents
of America

Robert Vagley
American Insurance Association

MEMORANDUM

TO: Tim Hurd
NHTSA Public Affairs

FROM: Cathy Hickey
Manager, Public Affairs

RE: Advocates' "Saved by the Air Bag" group members

DATE: September 4, 1998

Tim:

Attached as we discussed is information on 4 people who have had positive experiences with air bags. All of these people are wonderful spokespeople on the lifesaving benefits of safety belts and air bags. They are members of Advocates for Highway and Auto Safety's "Saved by the Air Bag" group and should be identified as such.

The first one, Kim (b)(6) I feel is the best because the entire family was saved. She is also the one that said she would be available to fly in next week if needed.

I don't usually give these people's names and numbers out but in this case I have called them all ahead of time to let them know what is going on. Please let us know what you decide to do next week and if you will be flying any of them in for a news conference. I am out on Monday for the holiday and on Tuesday but will return to the office Wednesday morning. In my absence please contact Judie Stone directly at (202) 408-1711.

Thank you.



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002b. attachment	advocates "Saved by the Air Bag" (partial) (4 pages)	09/04/1998	b(6)
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P1 National Security Classified Information [(a)(1) of the PRA]
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RR. Document will be reviewed upon request.

Freedom of Information Act - [5 U.S.C. 552(b)]

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b(9) Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]

[0026]

(b)(6)

Kim P., D.E. P. and family
Southhaven, MS

Kim P. of Southhaven, MS, was in evening rush-hour traffic on Friday of Easter weekend in 1996, headed home in her 1994 Nissan Altima on a two-lane highway. Her father was in the front passenger seat and her cousin's two children, 5-year old Brittany and 1-year old Matthew, were in the back seat. All were wearing safety belts and Matthew was in a child safety seat. In addition, the Altima has two air bags. The family needed all of these safety devices when an oncoming Chevy Lumina made a left turn in front of them without checking first, crossing Kim's lane of traffic with almost no room to spare.

"I started to brake but there just wasn't time to slow down much," Kim says. "I was doing about 40 mph and I hit her head-on, into the side of her car. I had no time to realize what was happening. I heard the air bag and I felt it like a kick in the chest. Nothing I regret, though, it was well worth it when you think about what could have happened." She also received a friction burn from the deploying air bag, but that was the extent of the injuries to her and her family. The unbelted Lumina driver was transported to the hospital with some injuries. Her passenger, her teenage son, was not injured.

Immediately after the crash, Kim was startled by smoke for a moment until she realized it was the powder from the air bag. Then she turned to look at her father and was relieved to see that he was just fine. After his recent stroke, his doctors warned the family to be particularly careful of injuries to the head, so Kim was doubly thankful that her car had two air bags. The children in the back seat were okay, too. The police who responded to the crash told Kim they were lucky they had the air bags and belts, which she knew already. "We would have been seriously hurt without them," she says.

One thing did concern her: Matthew's car seat tipped over during the crash. The police officer suspected the seat was not belted in, but Kim knew she had fastened the safety belt. "I always make sure the kids are properly buckled up when they're in my car," she said. She got on the Internet to do some research and learned from the DANA Foundation's Web site that she needs to use a locking clip when the car seat was used with a three point belt. "I'd never heard of one before," she says, " But now I use one when he's with me."

(0026)

(b)(6)

Julie S.
Essexville, Michigan

On January 9, 1997, Julie was traveling to work at a speed of approximately 40 mph when a car turned in front of her at a speed of approximately 25-30 mph and hit her head on. Julie was wearing her safety belt but feels it was the air bag that prevented her from serious injury. The vehicle she was driving, a 1992 Pontiac Bonneville was totalled. Julie suffers a broken ankle from the crash — but that is it.

"I feel the air bag definitely saved me from serious injury," says Julie. "I think the seat belt helped, but I still would have been injured much worse if it wasn't for the air bag. My vehicle was totalled."

[0026]

(b)(6)

JACKIE W.
Alamance County, NC

WFO
Wedn.

Jackie W. has always been a firm believer in safety belts, and her family has used them for many years. Her son and daughter grew up with the safety belt habit and passed it along to their children, Jackie's four grandchildren. "My grandchildren probably think the car won't start if they don't have their seat belts on," she says. Jackie is a safety-conscious driver in other ways, too. She sets her cruise control to the posted speed limit and she was happy that her 1996 Dodge Caravan came with dual air bags.

Earlier this year, she learned first hand the lifesaving value of air bags. On March 8, 1997, in the late morning, she was headed home from a neighboring town, going the speed limit of 35 mph. She was traveling down a two-lane street in town and had the right-of-way, but the driver of a full-size Chevy pickup truck ran a stop sign right in front of her. Jackie was already into the intersection when she saw him coming and she slammed on her brakes hard (so hard they later had to be replaced), but she didn't have enough time to stop. Her car broadsided the Chevy and rode under it, flipping the truck upside down in the impact.

Jackie didn't feel or hear the air bag deploy. By the time she saw it, the air bag had deflated, as did the van's passenger-side air bag. She unbuckled her safety belt to get out to check on the other driver, but he was already out of his truck and at her door, checking on her. Both appeared to be fine, although the other driver was scratched by some of the broken glass in his truck and Jackie began having some pain in her side about thirty minutes after the crash.

In a small town, word travels fast. The crash occurred near the home of the Chevy driver's parents, who were quick on the scene. So was the local fire chief, who knew Jackie and immediately called her husband and children. A husband and wife, both doctors, stopped to help and suggested that Jackie go to the hospital to be examined. She did and it turned out she had one broken rib and two fractured ribs, as well as some bruises on her left side.

When he saw the seriousness of the crash and the extent of the damage (over \$10,000 to Jackie's van), the fire chief told Jackie, "You are really lucky you had that air bag and your seat belt." Jackie firmly agrees. "The air bag and the seat belt saved my life," she says. "I probably would have gone through the windshield without them. I hit so hard the steering wheel broke. But the Lord was with me. I was very lucky."

Jackie continues to advocate for safety, especially in her own family. Her oldest grandchild is 16 and now driving. "He's a good driver," she notes, "and I'm not just saying that as a proud grandmother. My daughter and son-in-law raised him right. He always wears his seat belt, just like the rest of us."

[0026]

(b)(6)

Dean S.
Fergus Falls, MN

His job as a trainer for a utility company in the upper midwest takes Dean S. on the road about 100 days a year, covering a 50,000 square mile territory in parts of three states. On April 13, 1993, Dean was driving his company car -- a 1992 Plymouth Acclaim south of Langdon, North Dakota, when his vehicle struck the back wheel of a grain truck that had pulled in front of him at an intersection. Dean's seat belt, which he was wearing, worked in unison with an air bag that inflated and probably saved his life.

The vehicle performed well according to Dean, who was an auto mechanic for 10 years earlier in his career. "It absorbed the energy of the crash the way it was supposed," he says. He remembers "a puff of white powder" before he looked down and saw the air bag in his lap. "I was sure happy to have that air bag and happy that it worked. It didn't even break my glasses." Although the car was totaled, Dean walked away with no injuries other than some bruises across his chest where the safety belt held him firm.

Dean is also a certified defensive driving instructor with the National Safety Council who has told his story to students and other public groups across Minnesota and North Dakota.



FACSIMILE TRANSMISSION COVER SHEET
OFFICE OF THE ADMINISTRATOR



National Highway Traffic Safety Administration, NHTSA
400 7th Street, SW., Room 5220, Nassif Bldg.
Washington, D.C. 20590
FAX #202-366-2106

DATE: 9/3/98

PLEASE DELIVER THE FOLLOWING 1 PAGE(S) (INCLUDING COVER SHEET) TO:

NAME:

Jerry Mande

ORGANIZATION:

TELEPHONE NO.

FAX NO.

FROM:

PHIL RECHT

TELEPHONE NO.

202-366-2775

REMARKS:

F.Y.I.

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DOCUMENT NO. AND TYPE	SUBJECT/TITLE	DATE	RESTRICTION
003. note	To Phil Recht re people to participate in air bag press conference (partial) (1 page)	09/03/1998	b(6)

COLLECTION:

Clinton Presidential Records
Office of Science and Technology Policy
Jerold Mande
OA/Box Number: 13034

FOLDER TITLE:

Air Bags: [Correspondence] [1]

2008-1524-F
kc1218

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financial institutions [(b)(8) of the FOIA]
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concerning wells [(b)(9) of the FOIA]

[003]

National Highway Traffic Safety Administration
Office of Public & Consumer Affairs

September 3, 1998

NOTE TO: Phil Recht, Deputy Administrator

Per your direction, I have contacted Janet Dewey of the Air Bag and Seat Belt Safety Campaign and Rob Sanders of the Parents Coalition for Safer Air Bags to obtain names and contact information for possible participants in a press conference on the advanced air bag rule. This is the status as of 5:30 pm:

Though he is in the process of getting two additional names for us first thing tomorrow morning, Rob Sanders himself would be a good candidate as a person who has been affected by the shortcomings of present air bag designs. Here are his name and phone numbers.

Rob Sanders

Home answering machine: 410 377-5548

DC Office of the Parents Coalition: 202 467-8300, fax 466-3079

Janet Dewey has supplied two names and promises more by 10 a.m. tomorrow morning. The ones we have now are:

(b)(6)



Safety Fact Sheet

DRAFT

Comprehensive air bag plan

These are the key steps to date in the Department of Transportation's comprehensive plan to preserve the benefits of air bags while reducing their risks:

- May 1995: The National Highway Traffic Safety Administration allows automakers to install on-off switches on new cars and light trucks that have no rear seats or rear seats that are too small to properly accommodate a child seat.
- May 1996: NHTSA launches the Air Bag Safety Campaign, a public-private coalition involving automakers, insurance companies, suppliers and safety groups aimed at educating people about safe transportation in vehicles with air bags.
- November 1996: NHTSA requires that bold new labels with explicit air bag safety warnings be installed in all new vehicles and on child safety seats. Automakers also agree to mail copies of the new labels to the owners of air bag-equipped vehicles that already are on the road.
- December 1996: NHTSA extends for two more years, until August 31, 2000, its policy allowing on-off switches in vehicles that cannot accommodate a child seat.
- March 1997: NHTSA gives automakers the ability to more quickly reduce the power of their air bags by 20 to 35 percent. Automakers have said they will be able to install reduced-power air bags in most 1998-model vehicles that need them.
- November 1997: NHTSA allows consumers fitting certain risk profiles to purchase an on-off switch to temporarily deactivate air bags when needed.
- September 1998: NHTSA issues proposal for new air bag testing procedures that will lead to more advanced air bag systems.



Safety Fact Sheet

DRAFT

Advanced air bags

- They are expected to do the most to preserve the benefits of air bags while reducing the risks.
- Phase-in begins in the 2003 model year, when 25 percent of each automaker's production will have to meet the new standard. The percentage rises to 40 percent in the 2004 model year, then 70 percent in the 2005 model year. By the 2006 model year, all passenger cars and light trucks sold in the United States will have to be equipped with advanced air bags.
- The rule incorporates additional air bag system performance tests aimed at providing maximum protection for young children, small women and average-sized adults.
- Advanced air bags, when fully in the fleet, may save up to 214 people per year who could have been killed by first generation air bags. Advanced air bags also could save an additional 430 people per year who might not be saved by air bags designed using a sled test. This is in addition to the 3,000 lives per year that air bags are expected to save when every vehicle is equipped with them.
- The tests will incorporate a new crash dummy family, including 1-, 3- and 6-year-old child dummies, a 5th percentile or small female dummy, and a 50th percentile or average-size male dummy. Although the child and female dummies are new, they are based on proven technology and have been thoroughly tested.
- The advanced air bag rule includes low-speed testing designed to reduce or eliminate risk to infants, children and out-of-position adults. The rule also includes high-speed tests designed to preserve the current level of air bag protection while enhancing protection for small women.
- Advanced air bags will never eliminate the need for all vehicle occupants to wear seat belts. And, the back seat still will be the safest seating position for children. Young children should still be transported in safety seats or booster seats appropriate for their age.



Safety Fact Sheet

DRAFT

Advanced air bag phase-in

Percentage of passenger car and light truck production sold in the United States that will have to meet the new standard:

- ☐ 25 percent in model year 2003 (beginning Oct. 1, 2002)
- ☐ 40 percent in model year 2004 (beginning Oct. 1, 2003)
- ☐ 70 percent in model year 2005 (beginning Oct. 1, 2004)
- ☐ 100 percent in model year 2006 (beginning Oct. 1, 2005)



DRAFT

Safety Fact Sheet

Dummy dimensions

	<u>Height</u>	<u>Weight</u>
50 th Percentile Male Hybrid III	5 feet 8 inches	172 pounds
5 th Percentile Female Hybrid III	5 feet	110 pounds
6 Year Old Hybrid III	3 feet 11 inches	46 pounds
3 Year Old Hybrid III	3 feet 1 inches	34 pounds
1 Year Old CRABI (Child Restraint Air Bag Interaction)	2 feet 5 inches	21 pounds



Safety Fact Sheet

DRAFT

9/1/98

Crash Statistics (1997)	
People killed: 41,967	People injured: 3.4 million
Passenger vehicle occupants killed: 35,693	Children age 15 and under killed: 3,157
Annual cost of motor vehicle crashes: \$150.5 billion (1994 number, latest available)	

Estimated Air Bag Benefits (calculated as of 9/1/98)	
Drivers saved: 2,954	Calculating lives saved is done with a mathematical analysis of the real-world fatality experience of vehicles with air bags compared with vehicles without air bags. These are called double-pair comparison studies, and are widely recognized as the most accurate method of statistical analysis.
Passengers saved: 494	
Total: 3,448 (965 belted, 2,483 unbelted)	
Injury prevention	The combination of seat belts and air bags is 75 percent effective in preventing serious head injuries and 66 percent effective in preventing serious chest injuries.
Deployments	2.6 million air bags deployed from late 1980s to Sept. 1, 1998: • 2.25 million driver-side deployments • 344,000 passenger-side deployments
Number of vehicles with air bags (as of 9/1/98)	53.0 million cars (about 42 percent of cars on the road) 26.0 million light trucks (about 35 percent of light trucks) 79.0 million total

Air Bag Deaths (as of 9/1/98)	
Children in rear-facing child seats: 15	Children in rear-facing child seats should never be placed in the front seat of an air bag-equipped vehicle because their heads are too close to the air bag cover.
Children not in rear-facing child seats: 51 (three restrained, but not properly)	Children 12 years old and younger should be in appropriate restraints and ride in the back seat. This is recommended because children can easily place themselves in danger by not wearing their seat belts properly or leaning forward unexpectedly. Also, the back seat always has been the safest place to ride in a vehicle, with or without air bags.
Adult drivers: 42 (11 properly restrained)	Just about everyone -- including short women and older people -- can preserve the benefits of air bags, while reducing or eliminating the risks, by buckling their seat belts and keeping at least a 10-inch distance between the air bag cover and their breastbone.
Adult passengers: 5 (two restrained)	Proximity to the air bag has been the issue in nearly every death.
Total: 113	

(OVER)

DRAFT

Seat Belt Usage
U.S. rate based on state surveys: 69 percent
Children under 5 in restraints: 61.2 percent
Buckle Up America Campaign goals for seat belt usage: 85 percent by 2000
Human benefit of meeting the goal: 4,194 lives saved and 102,518 injuries prevented
Cost savings from meeting the goal: \$6.7 billion per year
The seat belt usage rate in the United States lags far behind most industrialized countries. For example, Canada, Australia, the United Kingdom, Germany and Sweden have usage rates of 90 percent or better.

Air Bag Effectiveness (head-on crashes)
Car drivers: 30 percent fatality reduction
Car Passengers: 27 percent fatality reduction
Light truck drivers: 27 percent fatality reduction
No estimate for light truck passengers because there are too few passenger air bags in those vehicles to have statistically valid experience.

Seat Belt Effectiveness
Preventing deaths in cars: 45 percent effective
Preventing serious injuries in cars: 50 percent effective
Preventing deaths in light trucks: 60 percent effective
Preventing serious injuries in light trucks: 65 percent effective
Annual lives saved: 10,000

National Highway Traffic Safety Administration
Office of Public & Consumer Affairs

September 2, 1998

NOTE TO: Jerry Mand, WH

FROM: Tim Hurd, USDOT, NHTSA

Phil Recht asked me to get you the following information on the benefits of the proposed rule you were discussing.

The rule is estimated to prevent the projected deaths of 214 people who would otherwise be killed by airbags if technology and behavior were not changed;

The rule is also estimated to save 430 more lives than a full fleet of all-depowered bags, as would be allowed under the currently approved sled test.

Auto-safety agency mulls restoring air-bag clout

By Peter Kaplan
THE WASHINGTON TIMES

9/3 08

Federal regulators are considering new rules that could put some of the punch back into automobile air bags.

A year after the National Highway Traffic Safety Administration (NHTSA) allowed carmakers to "de-power" the safety devices, the agency is expected to suggest new regulations that may restore the explosive force to newer model bags during the next few years.

That prospect has already provoked a warning from U.S. automakers and insurance companies, who fear that the stronger air-bag

Prospect draws flak from carmakers, insurers

inflators will lead to a new rash of air-bag-related deaths and injuries.

"It's crazy to mandate something that would lead to a return to [high-powered] inflators before we know that we need them," said Brian O'Neill, director of the Insurance Institute for Highway Safety. "We have documentary evidence from real world crashes that powerful inflators can harm people in both low- and high-speed crashes."

NHTSA gave carmakers per-

mission to "de-power" the bags by 20 to 35 percent last year in response to growing evidence that hundreds of children and small-statured adults were being injured and killed by the safety device, often during minor, low-speed collisions.

De-powering was one of several steps the NHTSA took to prevent air-bag casualties. Since the de-powered bags deploy with less force, they're less likely to injure or kill children and small adults who are sitting close to them.

But officials at NHTSA have expressed concerns all along that the less forceful air bags are less effective in protecting people in high-speed crashes — particularly those who aren't wearing a seat belt.

So while switching to less powerful air bags was expected to save hundreds of people from becoming air bag casualties, the agency has also predicted that it will also cost as many as 400 lives a year.

The issue is coming up again as NHTSA tries to come up with a set

of regulations to cover a new generation of more sophisticated air bags. The advanced bags will be designed to inflate at different speeds depending on the severity of a crash.

NHTSA's new regulations will determine how much punch the new air bags will have because they will spell out the tests they will have to pass and require them to meet certain standards. The regulations will also mandate new crash-test dummies that simulate women and children for the first time.

Nobody is sure what NHTSA

will propose. And officials there won't comment on the subject until after the proposal comes out, agency spokeswoman Liz Neblett said this week.

But automakers and insurers are already afraid that the new rules will order them to go back to using a "barrier" crash test to test the air bags — one that simulates a 30 mile-per-hour crash into a fixed barrier.

The barrier test was mandatory before last year. And the only way automakers can make sure all their cars pass it, the car manufacturers contend, is to go back to the high-powered air-bag settings that were in use before last year.

Automakers insist that would be a big mistake.

"Future air bags must continue to be de-powered. It's in the public interest," said Barry Felrice, director of regulatory affairs at the American Automobile Manufac-

turers Association, a trade group that represents General Motors Corp., Ford Motor Co. and Chrysler Corp.

"Hundreds of people could lose their lives each year if air bags are re-powered," Mr. Felrice said.

In theory, the new, more sophisticated air bags would only go off at high power in a severe crash. During a fender bender, sensors in the car would signal the bags to come out more slowly.

But Mr. O'Neill, of the insurance institute, said the sensors, which are designed to work in only a fraction of a second, won't always work perfectly.

"In the real world, crash sensors will by definition get it wrong," said Mr. O'Neill, of the insurance institute. "While everything can work very nicely in the lab, the real world crash is quite a bit more complicated."

Car manufacturers are also doubtful about the agency's theory that the lower-powered bags are costing hundreds of lives. "We (the number is closer to zero,"

Mr. Felrice said. "You never needed [high-powered bags], so why on earth would you ever want to go back to it?"

Automakers prefer to test air bags by putting them into a mechanical "sled" and thrusting them backward. The de-powered air bags would be able to pass that test.

Critics say the "sled" test is easier for the car manufacturers, but doesn't do a good job of simulating the real-life crash of an entire car. The manufacturer's real aim, they said, is to get a more lenient safety standard.

"This is a clever little gimmick to avoid auto safety recalls," said Clarence Ditlow, head of the non-profit Center for Auto Safety. "They want to use the [sled test] as a way of avoiding liability."

The dispute is especially vexing because there are no statistics to prove either side. Automakers have begun collecting information on how well the low-powered bags are working, Mr. Felrice said. But

it will take another four to five years to get enough information to draw any conclusions.

"So far we have not seen anything which proves NHTSA's point," Mr. Felrice said. "But we can't prove statistically that de-powered bags are just as good at protecting unbelted occupants as fully powered bags."

Roughly 12 million vehicles have been sold during the last year with the new, less explosive bags. Overall, there are about 80 million cars in the United States equipped with the safety device.

Both Mr. Felrice and Mr. O'Neill said NHTSA should wait several years before it even considers anything that would force them back to high-powered air bags. That would give the agency more time to figure out whether there are any drawbacks to the less-powerful bags.

"Wait for the science. Wait for the data. That doesn't seem like an unreasonable request," said Mr. Felrice.

Smarter, safer air bags may be required in 2002

By Jayne O'Donnell
USA TODAY

9/2/98

Starting in 2002, advanced air bags that don't injure children or women will be required in new cars, under a proposed federal rule expected in the next week.

The National Highway Traffic Safety Administration (NHTSA) plans to require that cars pass several new crash tests using infant, child- and small female-shaped dummies. That means automakers must install sensors that can detect if a child or smaller adult is seated facing an air bag. If so, the sensor would signal either that the air bag not deploy or that it deploy with less force.

The proposal is the most sweeping change in auto-safety rules since NHTSA started testing air bags and seat belts more than 10 years ago. It's the first time safety devices will be tested using dummies representing people who are not average-size adult males. And unlike current tests, which check how well bags protect people, air bags will be subject to a battery of tests to determine whether they injure them.

Four new dummies representing 1-, 3- and 6-year-old children and a 5-foot, 110-pound woman will be used. Air bags have killed 65 children and 46 adults since 1990. Sixteen of the adults were women less than 5 feet, 2 inches tall.

But NHTSA may be banking on smarter bags than are possible. When the rule is announced, regulators will say how much injury they think is too much for each of the age groups. Automakers say they don't know if they have systems that will pass the tests. Car companies also say NHTSA may require them to certify that children and women are safe in so many positions that it will be impossible to design a reliable system.

The government also plans to change crash-test rules to make it more difficult for automakers to "depower" air bags. Less-forceful air bags are safer for kids and small adults but are less protective of larger adults not wearing safety belts.

The American Automobile Manufacturers Association's Barry Felrice says automakers want to depower bags because they aren't sure smart bag sensors can protect everyone.



FACSIMILE TRANSMISSION COVER SHEET
OFFICE OF THE ADMINISTRATOR



National Highway Traffic Safety Administration, NHTSA
400 7th Street, SW., Room 5220, Nassif Bldg.
Washington, D.C. 20590
FAX #202-366-2106

DATE:

9/1/98

PLEASE DELIVER THE FOLLOWING 3 PAGE(S) (INCLUDING COVER SHEET) TO:

NAME:

Terry Mande

ORGANIZATION:

TELEPHONE NO.

FAX NO.

456-6027

FROM:

Phil Recht

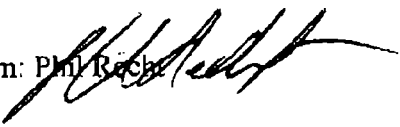
TELEPHONE NO.

366-2775

REMARKS:



People Saving People

From: Phil Richey 

To: Jerry Mande

Re: NHTSA proposed rule on advanced air bags

Date: September 1, 1998

Frontal air bags increase one's chance of surviving a frontal crash without serious injury or fatality by approximately 25-30%. To date, they have saved over 3000 lives. Unfortunately, they have also been responsible for 111 deaths, mostly of young children and short stature adults who were out of proper position (i.e., too close to the air bag) at the time of impact.

The risks posed by the current generation of air bags became apparent by the end of 1995, leading the Administration (through DOT) to craft a comprehensive plan to preserve the benefits, yet minimize the risks, of frontal air bags. The plan included both behavioral and technological solutions, and sought to address vehicles then on the road, those to be built in the next few years, and those to be built in the future.

On December 28, 1996, President Clinton delivered a radio address discussing this comprehensive plan. The President announced a number of the steps meant to address vehicles then on the road or to be built in the near future. These steps included allowing depowering of air bags and on-off switches, also a nationwide campaign to increase seat belt use. The President also discussed that part of the plan addressing future vehicles, speaking of "a new generation of 'smart' air bags, which will determine the size of the passenger and inflate just enough to protect them without hurting them."

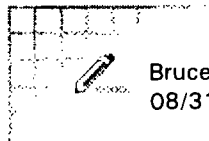
DOT is now ready to issue a rulemaking proposal with respect to "smart" (the preferred term now is "advanced") air bags. The proposal, which represents the final step of the comprehensive plan, would require manufacturers to phase advanced air bags into their fleets beginning in model year 2003. The phase-in would have to be completed by model year 2006.

To ensure the new air bags provide significant benefits, yet minimize risks to those who have proven to be vulnerable, the rule significantly expands upon the testing required of air bags. Currently, manufacturers must simply pass either a crash or sled test with belted and unbelted average size male dummies. The new rule would require manufacturers to pass tests with child and small female dummies as well. The manufacturers could choose from a number of different test options designed to ensure that the air bags would not harm such persons should they be out of proper position and, thus, at risk.

The rule also requires manufacturers to pass a 30 mph fixed barrier crash test with belted and unbelted male and female dummies, this to ensure the vehicles as a whole, including their air bag systems, provide adequate protection in the event of a severe crash. The rule eliminates the manufacturers' current option of using sled tests to ensure this protection. Sled tests do not test

the performance of the vehicle as a whole, and thus are considered inferior to crash tests in predicting real world performance.

It is estimated that the rule will eliminate 344 driver and passenger deaths which would occur each year were current designs of air bags to be in all vehicles and were behavior patterns to stay the same. The rule will be supported by consumer and safety organizations. The auto industry has already publicly indicated its strong opposition to the elimination of sled testing. There is significant media and Congressional interest in the rule.



Bruce N. Reed
08/31/98 09:16:21 AM

Record Type: Record

To: Jerold R. Mande/OSTP/EOP
cc:
Subject: Advanced Airbags proposed rule Heads-up

Where would our friend Sen. Kempthorne be on this?

----- Forwarded by Bruce N. Reed/OPD/EOP on 08/31/98 09:16 AM -----

Lisa M. Jones
08/28/98 03:29:26 PM

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To: See the distribution list at the bottom of this message
cc: Victoria Wassmer/OMB/EOP
Subject: Advanced Airbags proposed rule Heads-up

August 28, 1998

MEMORANDUM FOR ERSKINE BOWLES

THROUGH: Jack Lew
FROM: Donald Arbuckle
SUBJECT: Heads-up -- Department of Transportation's proposed rule on Advanced Airbags

We have just received the Department of Transportation's National Highway Traffic Administration's (NHTSA) proposed rule that requires the development of advanced airbag technology and their introduction in vehicles over a phase in period from MY 2003-MY 2006. This rule is part of the long-term solution NHTSA has designed to address the adverse side effects of airbag technology. Although airbags have saved 3,148 lives since their introduction in 1986, they have also caused 105 known fatalities. The proposed advanced airbag standard is flexible and allows auto manufactures a broad range of technological possibilities, from weight sensors to dual-stage airbags, which are estimated to cost between \$4-\$162 per vehicle. The preliminary analysis indicates that the significant cost of the rule, up to \$2.5 billion annually (based on predicted costs of the high cost technological option and annual sales of 15.5 million vehicles) is balanced by substantial benefits -- the avoidance of fatalities to the high risk population -- infants, children under the age of 12, and small stature adults -- and the avoidance of property damage expenses due to unnecessary airbag deployment.

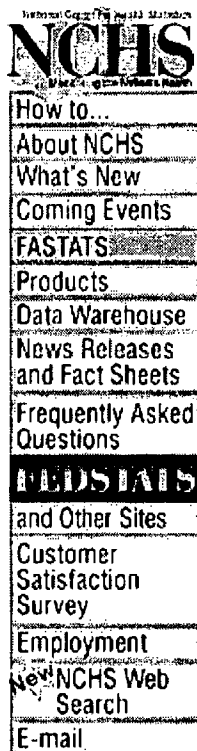
The proposal also includes other noteworthy provisions that require auto manufacturers to: test using a 5th percentile (small stature) adult female, 12-month old infant, and 3 and 6-year

old dummies, in addition to the 50th percentile male dummy currently required; add several new crash tests, including a choice among three low-speed tests and a dynamic offset crash test; and, sunset the sled test option after advanced airbags are introduced by the industry. These new provisions should not surprise the interested public; in fact the American Automobile Manufacturers Association petitioned NHTSA to include additional dummies in the test requirements. However, sunsetting the sled test is controversial. The auto companies favor the sled test because it is cheap, repeatable, and as opposed to the barrier crash test, a vehicle is not destroyed. NHTSA is fearful that the safety benefits of airbags are compromised by the sled test because the test is a simulation of a crash, not an actual crash; and, as manufactures change their airbag design to optimize for the sled test, the consequence could be smaller bags that protect less surface area.

NHTSA is anxious for the rule to be published to meet the September 1st statutory deadline. We believe the agency has written a technology forcing proposed rule that is focused on the problems with current airbag technology and, at this proposed stage, maintains a great deal of flexibility for new developments in technology.

Message Sent To:

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Updated 6/3/98



Accidents/Unintentional Injuries

(All figures are for U.S.)

Deaths Annually: **93,874 (1996)**

Source: Monthly Vital Statistics Report, Vol. 46, No. 1 Supplement

Death Rate: **30 deaths per 100,000 population (1996)**

Source: Monthly Vital Statistics Report, Vol. 46, No. 1 Supplement

Cause of Death Rank: **5 (1996)**

Source: Monthly Vital Statistics Report, Vol. 46, No. 1 Supplement

Motor Vehicle Deaths: **43,449 (1996)**

Source: Monthly Vital Statistics Report, Vol. 46, No. 1 Supplement

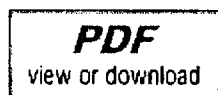
Motor Vehicle Fatality Rates: **16 deaths per 100,000 population (1996)**

Source: Monthly Vital Statistics Report, Vol. 46, No. 1 Supplement

Motor Vehicle Accident-Related Emergency Department Visits: **4,200,000 (1995)**

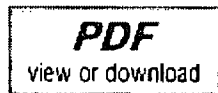
Source: Advance Data 285

Comprehensive Data



Ambulatory Care Visits

Accident Mortality as a Leading Cause of Death, by Sex, Race, and Age



Accidental Deaths and Death Rates, by State

Motor Vehicle Fatalities and Fatality Rates, by State

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National Center for Injury Prevention and Control



National Institute for Occupational Safety and Health 

National Highway Traffic Safety Administration



Injury Control Resource Information Network 

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