

NLWJC - Kagan

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**Consumer Safety - Airline Child
Restraints**

MEMORANDUM

**TO: BRUCE REED
ELENA KAGAN**

**FROM: TOM FREEDMAN
MARY L. SMITH
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RE: CHILD SAFETY IN COMMERCIAL AIRPLANES

DATE: JULY 18, 1997

SUMMARY

An estimated 10,000 children each day fly as "lap children," held in the laps of an accompanying adult instead of being secured in a separate seat by a certified Child Restraint System (CRS). These children are exposed to serious risk of injury or death in case of an accident or turbulence. Current FAA policy is to "strongly encourage," but not mandate, the use of a CRS for children under two years of age. The FAA has opposed a CRS mandate because of fears that the increased cost of buying an extra seat would lead many families to drive, leading to a net increase in injury and death, and because there are some technical problems with adapting existing CRS's to airplane use. Legislation pending in the House (H.R. 754 and 1141) and Senate (S. 398) would require the use of CRS's for children under two years of age.

PROBLEM

Children under two years of age have long been permitted to sit in their parent's laps during air travel. An estimated 10,000 children per day travel in this manner. But safety experts say that an unrestrained child traveling in an adult's lap runs a much higher risk of injury or death in case of air turbulence or a plane crash than a child secured by a separate child restraint system (CRS) on an adjacent seat. From 1978-1994, five children under two died in plane accidents who would have lived had they been in child seats. During the same period, ten injuries to children under two might have been prevented by the use of child seats.

Several recent incidents involving "lap children" have brought the matter to the public's attention. On July 19, 1989, United Airlines Flight 232 crashed in Sioux City, Iowa. Of the four unrestrained children on that flight, one was found in an overhead bin 15 rows behind the original seat, and one died from smoke inhalation in the ensuing fire. On July 12, 1994, a DC-9 flown by US Air crashed in Charlotte, North Carolina. There were 37 fatal injuries on the flight, including a 9-month-old unrestrained child who was hurled three rows from her mother's arms and died of massive head injuries. Air turbulence also poses serious risks to the unrestrained child. On a flight in June of 1995, an unrestrained child flew through the air during a patch of turbulence, but was caught by a fellow passenger. In 1990, a DC-10 encountered turbulence near Puerto Rico.

The only injury on the flight was sustained by an unrestrained infant, who suffered a fractured skull.

The use of child restraint systems has prevented injury or death in several other airline accidents. On July 6, 1996, the engine of Delta Flight 1288 exploded on the runway in Pensacola, Florida. Several passengers were killed instantly, but a 15-month-old suffered only a scratch on her neck because her parents had strapped her into a CRS in a separate seat. On September 6, 1992, a Piper PA-30 crashed at Broussard, Louisiana. Parts of both wings and both horizontal stabilizers were torn off before impact. A four-year-old boy and ten-month-old girl who sat in child restraint systems in the rear bench seat suffered serious injuries, but survived. Their father was killed.

PROPOSED SOLUTION

Many organizations, including the National Transportation Safety Board (NTSB), the Aviation Consumer Action Project, and the Association of Flight Attendants (AFA), have supported legislation that would mandate the use of child restraint systems on commercial aircraft. On February 12, 1997, the White House Commission on Aviation Safety and Security Bills, headed by Vice President Gore, recommended that "all infants and small children below the weight of 40 pounds and under the height of 40 inches be restrained in an appropriate child restraint system, such as child safety seats, appropriate to their height and weight." Bills to this effect were introduced in the 104th Congress by Rep. Lightfoot (R-IA, H.R. 1309) and in the 105th Congress by Rep. DeFazio (D-OR, H.R. 754 and 1141) and Sen. Murray (D-WA, S. 398). Copies of H.R. 754 and 1141 and S. 398 are attached.¹

POSSIBLE DIFFICULTIES WITH MANDATORY CRS LEGISLATION

1. Increased injury and death from travel diversion.

The FAA has refused to issue regulations mandating the use of child restraint systems because of fears that the increased cost to families of purchasing an extra seat would cause more of them to drive to their destination, leading to a net increase in injuries and fatalities.

A study by Apogee Research in 1990 found that the average cost of a trip to each family under mandatory CRS legislation would be \$185, leading to a total additional expenditure of \$252 million per year on airfare. Faced with this situation, Apogee predicted that 17% of families would forgo travel entirely or divert to another mode of travel, leading to a net increase of 1.6 fatalities, 4.8 serious injuries, and 218 minor injuries per year. The conclusions of this study were supported in broad outline by later studies by Windle and Dresner of the University of Maryland (1990) and in a briefing paper by McKenzie and Lee that was published by the Cato Institute (1990). Apogee conducted a second study for the FAA in 1993 coming to essentially the same conclusions. In the second study, however, Apogee contended that 95% of the safety gains of

¹H.R. 754 and S. 398 are almost identical; H.R. 1141 adds the provision that airlines would be prohibited from charging a price for the required additional seat that exceeds the lowest price charged by the carrier to any other paying passenger on the same flight.

mandatory CRS legislation could be realized at low additional cost by requiring airlines to reserve empty seats next to parents with young children until the plane was absolutely full.²

Finally, a DOT-FAA study conducted pursuant to section 522 of the Federal Aviation Authorization Act of 1994 confirmed the results of earlier studies. The DOT-FAA study found that a CRS mandate could prevent an estimated five infant fatalities over ten years. But the additional cost over ten years, assuming that the family pays full fare for every family seat, would be about \$200 to each family, per family trip, leading to an additional cost to families of \$109 million per year. In such a situation, 27% of families would still travel by air, 53% would not travel at all, and 20% would choose other modes of transportation. The shift to other modes of transportation would cause 82 more deaths among children and adults over ten years. Even if airlines responded to a mandatory CRS rule by lowering fares for infants or by some other marketing strategy, some travel diversion would still occur. The DOT-FAA study found that if carriers charged only 25% of the full fare, some families would still choose other forms of transportation, leading to a net increase of 17 child and adult deaths over ten years.

Instead of requiring CRS use, therefore, the FAA has embarked on a public education campaign strongly encouraging their use. In addition, Secretary Peña has asked carriers to establish incentives for parents to purchase seats for infants. Southwest Airlines, for instance, offers a discounted fare for children under two years of age.

But the results of these studies have been challenged by other organizations. The National Transportation Safety Board (NTSB), a longtime advocate of mandatory CRS legislation, has charged that the FAA studies are “based upon incomplete analysis.”³ The central contention of the NTSB is that airlines will not risk the revenue loss caused by entire families diverting to other forms of transportation, and will respond with innovations such as free seats for infants, group discounts, or special fares for traveling at off-peak times. In testimony before the U.S. House of Representatives on July 20, 1990, the Vice President of Operations for the Air Transport Association said that airlines would offer a special fare arrangement for families with infants “rather than risk the loss of one or more adult fares or perhaps an entire family unit.” Even the DOT-FAA study concluded that there would be no net increase in infant fatalities if airlines charged 20% of the full fare, although travel diversion in this scenario would still lead to an additional 12.8 non-infant fatalities over ten years. Of course, if airlines chose not to charge to provide separate seats for infants in CRS’s, there would be no net increase in deaths or injuries.

In response to the FAA studies, the Association of Flight Attendants (AFA) commissioned a study by Darryl Jenkins, a visiting scholar at the International Institute of Tourism Research at

²According to a July 3, 1997 article in the *New York Times*, many airlines will often reserve the seat next to a parent who does not buy a ticket for an infant. But these seats are not guaranteed on heavily booked flights.

³Testimony of Barry Sweedler, Director of the Office of Safety Recommendations, National Transportation Safety Board, before the Subcommittee on Aviation of the House Committee on Transportation and Infrastructure, August 1, 1996, p. 2.

George Washington University, to re-examine the economic arguments on requiring CRS use. The AFA study contended that the FAA studies were based on incorrect modeling assumptions. According to the AFA study, the FAA studies did not have key data to determine price sensitivity, used an industry demand curve that unrealistically simplified a complex situation, did not take into account the price competition generated by low-fare carriers, and did not take into account the effects of income sensitivity. Basically, the contentions of the AFA study are 1.) that the airline industry is increasingly dominated by low-cost carriers, especially on frequently traveled routes, who are forcing prices down, and 2.) that the FAA studies incorrectly used "price elasticity" (who would choose not to fly if the cost increased) as a surrogate for "cross-elasticity" (who would switch into other modes of transportation, such as automobiles, if the cost of flying increased).

A key to resolving this dispute seems to be whether or not airlines are willing to follow the lead of Southwest Airlines and offer specially discounted fares for children under two years of age. **The cuts in fares for children under two announced in the last two weeks seems to indicate that airlines are willing to cut fares to encourage families to buy a separate seat for their young child.** On July 2, 1997, American Airlines announced that children under two could ride in a separate seat for a fare of only 50% of the fare of the accompanying adult.⁴ This policy was quickly adopted by United Airlines, Delta, Northwest, and Continental. Contrary to FAA assumptions, the new pricing policy would not lead to a loss of airline revenue but could even lead to a small net gain. Robert W. Baker, the Vice President of Operations of American airlines, said in the July 3, 1997 *New York Times* that American expected a modest increase in revenue as a result of the new fare.

2. Technical difficulties with CRS use in airplanes.

The second main argument against mandatory CRS legislation is that there are technical difficulties with using existing CRS's in airplanes. **But even with these difficulties, children under two are always safer in an existing CRS than on the lap of an accompanying adult.** The FAA currently recommends that children weighing under 20 pounds be restrained in a certified, rear-facing CRS, that children weighing between 20 and 40 pounds be restrained in a certified, forward-facing CRS, and that children weighing over 40 pounds be strapped in a regular lap belt. Margaret Gilligan, FAA Deputy Associate Administrator for Regulation and Certification, said last year in testimony before the House Subcommittee on Aviation that although the FAA is continuing their research on CRS design to achieve a greater safety margin, "no one contests our finding that children are better off in currently-marketed, approved CRS's [than in the lap of an accompanying adult]."⁵

⁴Because the FAA studies are based on full-fare data, a 50% discount from the fare of the accompanying adult could approach the FAA's 20% threshold for no net gain in infant fatalities from travel diversion. If the accompanying adult was traveling on a special reduced-price ticket, for instance, a 50% discount on such a fare could be a considerable markdown from the price of a full-fare ticket.

⁵Margaret Gilligan, Testimony before the Subcommittee on Aviation of the House Committee on Transportation and Infrastructure, August 1, 1996, p. 5.

A major study by the Civil Aeromedical Institute (CAMI) in 1994 also found that while current CRS designs were not perfect, they still provided more protection than sitting on the lap of an adult. An infant in a front-facing CRS, although still exposed to serious risks, was found to be safer than if he or she were held by an accompanying adult. The use of a rear-facing CRS, though, was found to be a "definite safety benefit."⁶ However, both front- and rear-facing CRS's were found to be often difficult to install and inconvenient to other passengers and staff. A forward-facing CRS is sometimes too big to install in seats with fixed arm rests, and airline lap belts often do not suitably secure the CRS to the seat. In addition, the lap belt does not always protect the child from being thrown out of the CRS and hitting his or her head on the forward row seat. A rear-facing CRS often interferes with passage between seat rows and the recline motion of a forward row seat.

Because of these difficulties, many efforts are currently underway to develop a CRS that would be more suitable for airline use:

- The Society of Automotive Engineers (SAE), an ad-hoc group, is currently trying to develop a standard of compatibility between seats for cars and seats for airplanes.
- The FAA is working on developing new types of restraints for children and better ways to secure a conventional CRS to an airplane seat.
- The FAA is also developing a prototype "platform" for in-seat installation of a forward-facing CRS, which in preliminary tests has significantly increased the effectiveness of forward-facing CRS's.
- Two projects are currently underway, one in the United States and one in Canada, to develop an airplane-specific CRS. Both prototypes have been tested at CAMI in both forward- and rear-facing positions, and both performed much better than any currently available CRS.

In short, the use of any certified CRS provides better protection than being carried on the lap of an accompanying adult, although a rear-facing CRS is generally preferable to a forward-facing one. Advances in technology for an airplane-specific CRS and for better installation of conventional CRS devices should lead to even greater safety benefits for young children.

CONCLUSION

The recent fare cuts by U.S. airlines for children under two years old, the proven safety record of existing CRS's in airplanes, and the ongoing development of better CRS's seem to remove many of the problems with mandatory CRS legislation. H.R. 754 and 1141 and S. 398 would follow the recommendations of the NTSB, the Gore Commission, and many other organizations by requiring children under two years of age to be restrained in a CRS in a separate seat, potentially preventing several injuries and fatalities among infants in the next ten years.

⁶Civil Aeromedical Institute, "The Performance of Child Restraint Devices in Transport Airplane Passenger Seats," OAM Report AM-94-19, September, 1994, p. 22.

FILE h754.ih

HR 754 IH
105th CONGRESS
1st Session

To amend title 49, United States Code, to require the use of child safety restraint systems approved by the Secretary of Transportation on commercial aircraft.

IN THE HOUSE OF REPRESENTATIVES

February 13, 1997

Mr. DEFAZIO (for himself, Mr. SHAYS, Mr. CONYERS, Mr. HINCHEY, Mr. FILNER, Mrs. MORELLA, Mr. ABERCROMBIE, Mr. NADLER, Mr. EVANS, Mr. HORN, Ms. WOOLSEY, Mr. BLAGOJEVICH, Ms. NORTON, Ms. JACKSON-LEE of Texas, Mr. RAHALL, Mrs. CARSON, Mrs. MALONEY of New York, Mr. MASCARA, Mr. FLAKE, Mr. GONZALEZ, Mrs. CLAYTON, Mr. LANTOS, Ms. PELOSI, and Mr. DAN SCHAEFER of Colorado) introduced the following bill; which was referred to the Committee on Transportation and Infrastructure

A BILL

To amend title 49, United States Code, to require the use of child safety restraint systems approved by the Secretary of Transportation on commercial aircraft.

[Italic->] Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, [<-Italic]

SECTION 1. CHILD RESTRAINT SYSTEMS ON COMMERCIAL AIRCRAFT.

(a) IN GENERAL- Chapter 447 of title 49, United States Code, is amended by adding at the end the following new section:

`Sec. 44725. Child restraint systems

`Not later than 90 days after the date of the enactment of this section, the Secretary shall issue regulations requiring the use of child safety restraint systems approved by the Secretary on any aircraft operated by an air carrier in providing interstate air transportation, intrastate transportation, or overseas air transportation. Such regulations shall establish age or weight limits for children who are to use such systems.'.

(b) CLERICAL AMENDMENT- The table of sections at the beginning of such chapter is amended by adding at the end the following new item: `44725. Child restraint systems.'.

SEC. 2. INTERNATIONAL STANDARD.

It is the sense of Congress that the United States representative to the International Civil Aviation Organization should seek an international standard to require that passengers on a civil aviation aircraft be restrained on takeoff and landing and when directed by the captain of such aircraft.

HR 1141 IH
105th CONGRESS
1st Session

To amend title 49, United States Code, to require the use of child safety restraint systems approved by the Secretary of Transportation on commercial aircraft and to restrict the fares charged by air carriers for air transportation provided to children under 3 years of age.

IN THE HOUSE OF REPRESENTATIVES

March 20, 1997

Mr. DEFAZIO introduced the following bill; which was referred to the Committee on Transportation and Infrastructure

A BILL

To amend title 49, United States Code, to require the use of child safety restraint systems approved by the Secretary of Transportation on commercial aircraft and to restrict the fares charged by air carriers for air transportation provided to children under 3 years of age.

[Italic->] Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, [<-Italic]

SECTION 1. CHILD RESTRAINT SYSTEMS ON COMMERCIAL AIRCRAFT.

(a) IN GENERAL- Chapter 447 of title 49, United States Code, is amended by adding at the end the following new section:

`Sec. 44725. Child restraint systems

`Not later than 90 days after the date of the enactment of this section, the Secretary shall issue regulations requiring the use of child safety restraint systems approved by the Secretary on any aircraft operated by an air carrier in providing interstate air transportation, intrastate transportation, or overseas air transportation. Such regulations shall establish age or weight limits for children who are to use such systems.'.

(b) CLERICAL AMENDMENT- The table of sections at the beginning of such chapter is amended by adding at the end the following new item: `44725. Child restraint systems.'.

SEC 2. AIR TRANSPORTATION PRICES FOR CHILDREN UNDER 3 YEARS OF AGE.

(a) MAXIMUM PRICE-

(1) IN GENERAL- Chapter 415 of title 49, United States Code, is amended by adding at the end the following new section:

`Sec. 41512. Air transportation prices for children under 3 years of age

(a) IN GENERAL- An air carrier providing air transportation to a child under 3 years of age on a scheduled flight to any final destination may not charge a price for such air transportation that exceeds the lowest price charged by the air carrier for such air transportation to any other paying passenger on such flight with the same final destination.

(b) DEFINITIONS- In this section, the following definitions apply:

(1) AIR CARRIER- The term 'air carrier' includes foreign air carriers.

(2) AIR TRANSPORTATION- The term 'air transportation' includes intrastate air transportation.'.

(2) CLERICAL AMENDMENT- The table of sections at the beginning of such chapter is amended by adding at the end the following new item:

`41512. Air transportation prices for children under 3 years of age.'.

(b) SENSE OF CONGRESS- It is the sense of Congress that air carriers should provide air transportation to children under 3 years of age at no charge.

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S 398 IS
105th CONGRESS
1st Session

To amend title 49, United States Code, to require the use of child safety restraint systems approved by the Secretary of Transportation on commercial aircraft, and for other purposes.

IN THE SENATE OF THE UNITED STATES

March 5, 1997

Mrs. MURRAY introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

A BILL

To amend title 49, United States Code, to require the use of child safety restraint systems approved by the Secretary of Transportation on commercial aircraft, and for other purposes.

[Italic->] Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, [<-Italic]

SECTION 1. CHILD SAFETY RESTRAINT SYSTEMS ON COMMERCIAL AIRCRAFT.

(a) IN GENERAL- Chapter 447 of title 49, United States Code, is amended by adding at the end the following new section:

`Sec. 44725. Child safety restraint systems

`(a) IN GENERAL- Not later than 90 days after the date of enactment of this section, the Secretary of Transportation shall issue regulations requiring the use of child safety restraint systems that have been approved by the Secretary on any aircraft operated by an air carrier in providing interstate air transportation, intrastate air transportation, or foreign air transportation.

`(b) AGE OR WEIGHT LIMITS- The regulations issued under this section shall establish age or weight limits for children who use the child safety restraint systems.'

(b) CLERICAL AMENDMENT- The chapter analysis for chapter 447 of title 49, United States Code, is amended by adding at the end the following new item:

`44725. Child safety restraint systems.'

SEC. 2. INTERNATIONAL STANDARD.

It is the sense of Congress that the United States representative to the International Civil Aviation Organization should seek an international standard to require that passengers on a civil aviation aircraft be restrained--

- (1) on takeoff and landing; and
- (2) when directed by the captain of such aircraft.