Special Report: Child Safety

Child Restraint Systems
Not To Be Mandated

Infants and small children will continue to run the risk of being hurled from their parents' arms or crushed by their parents' bodies, rather than be protected in a child restraint system, because the Federal Aviation Administration (FAA) argues that requiring parents to purchase a seat for their infant children will force many families to drive rather than fly, and the death and injury rate while driving is higher.

As a result of this determination, the FAA is withdrawing an Advance Notice of Proposed Rulemaking (ANPRM) that eventually would have led to a requirement for safety seats; in lieu of a hard requirement, it has issued a rule making it easier to receive FAA approval for child restraint systems (CRS) for airlines that want to provide them (see ruling, p. 8). These words from the FAA's announcement are significant: "Alternative child restraint systems must be approved by the FAA and provided by an airline, not passengers." According to sources, this language means that systems such as improved child-friendly lap and shoulder belts cannot be installed by passengers but must be provided by airlines (see box, p. 3). Thus, for parents who do not have car seats also approved for aircraft use, the FAA ruling will have the practical effect of requiring lap children.

The latest development ends a debate, at least for the moment, over child safety in airliners that was energized by the White House Commission on Aviation Safety and Security (a.k.a., the "Gore Commission," so-named in honor of its head, then Vice President Al Gore). In 1997, this commission believed it is "inappropriate for infants to be afforded a lesser degree of protection than older passengers" and recommended an end to lap children (see ASW, May 10, 1999, p. 10). It should be noted that unrestrained infants and toddlers not only can be injured when the forces of deceleration break them out of their parents' arms, they can cause injury to other passengers as they are flung about the cabin.

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Restraint Systems (Cont'd from p. 1)

FAA Administrator Marion Blakey justified the decision to not require restraints on the grounds that, if forced to purchase an extra airline ticket, families might choose to drive. "Statistics show that families are safer traveling in the sky than on the road," Blakey said. "We encourage the use of child safety seats in airplanes. However, if requiring extra airline tickets forces some families to drive, then we're inadvertently putting too many families at risk."

The announcement that child restraint systems will not be required but will be permitted on a strictly voluntary basis deeply disappointed the National Transportation Safety Board (NTSB). "While the FAA's new position may provide more options for the voluntary use of safety seats, we continue to believe that infants and young children deserve the same protection that is provided to other passengers," said NTSB acting chairman Mark Rosenker. "During takeoff, landing, and turbulence, adults are required to be buckled up, baggage and coffee pots are stowed, computers are turned off and put away, yet infants and toddlers need not be restrained. This is an unnecessary risk to our children."

The NTSB has recommended for years that child restraints be made mandatory, and has had this item on its "Most Wanted" list of safety improvements since 1999. Jim Hall was chairman of the safety board when child protection was placed on the "Most Wanted" list. Regarding the recent FAA decision, he said, "This continues to reflect that we place less value on the smallest and most dependent members of our society."

"It should be incumbent on government to ensure that infants and small children are protected," Hall said.

The FAA's decision to do otherwise comes 6½ years after it issued the ANPRM seeking public and industry comment on a proposal to require child restraint systems (CRSs) for babies and small children weighing 40 pounds or less. The response to that proposal, as the FAA freely admits, was overwhelmingly positive. Although the airline industry was concerned about technical aspects, and opposed the notion of airlines providing restraint systems, it was generally receptive to the idea. The public, safety experts and health officials were nearly united in their support. Based on a review of comments submitted to the docket, support for the proposal exceeded 95 percent.

Yet the FAA shot down the proposal. The fact that the ruling came years after most comments were received suggests an extensive debate within both the Clinton administration and, more recently, the Bush administration and the possible costs of requiring child restraints on an airline industry reeling from economic losses following the terrorist attacks of 9/11. The FAA says, "Commentators did not submit data or analysis to convince the FAA that mandating the use of CRSs in aircraft would not have the unintended consequences of causing a net increase in transportation injuries and fatalities."

A plain reading of the comments in the docket shows otherwise, that the FAA received a volume of expert testimony about the worth of CRSs for small children in aircraft. To be sure, the FAA did not receive much comment on the potential impact on net transportation fatalities caused by "diverting" families from flying to driving. The absence of such comment can be explained two ways. First, the public perceives the issue on moral grounds, not on cost-benefit considerations. Second, the FAA itself lacks injury data on small children in aircraft. Expecting the public to provide comprehensive data the FAA has not produced may be expecting too much.

Yet the FAA may be accused of engaging in bogus statistics here. Arguing that more people are killed on the nation's highways than on airliners is flawed on a number of counts. It is inappropriate, some say, to compare the safety record of a highly regulated form of public transport—airline travel—with private motor vehicles. One would expect, and demand, greater safety from a mode of public conveyance anyway.

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Taking this argument to its logical extreme, no seat belts should be required on airlines for any passengers. Despite the potential injury rate, they’re still safer, statistically speaking, than in their car.

“Making this argument across the board, then everybody should be on trains,” argues John Goglia, a former NTSB member and passionate advocate of child restraints on airliners. According to statistics, trains are about eight times safer than airliners (see ASW, April 14, 1997, p. 4).

Moreover, Goglia says, the comparative auto-versus-plane safety record can be manipulated in various ways. “If based on time in the vehicle, as opposed to miles traveled, the auto is safer,” Goglia said. This is based on the billions of miles of auto travel, and the time it takes to drive them, as opposed to the relative speed with which air travel accumulates a fraction of the miles driven by automobiles.

By this reasoning, aviation is not as safe as automobile travel, and therefore it is incumbent on the FAA to do everything possible to improve the safety of air transportation. Indeed, Goglia maintains that the FAA should not base its decisions on the relative safety of air travel to other modes of transportation. “Their job is to make air travel as safe as possible,” Goglia maintains.

If child restraint systems were mandated for airplanes, the question is who should provide them? If parents, then there is a strong incentive to have the child restraint system perform double duty – functioning as both automobile and aircraft restraint system. By this means, costs for the parents are minimized, as they would not have to purchase a seat exclusively for aviation use.

The downside is that not all infant seats suitable for cars are acceptable for airplanes in terms of size and functioning. Some are simply too big to fit in airliner passenger seats.

The argument in favor of a common auto-airplane seat is that seats designed for cars are evolving to depend less on adult seat belts for affixing them, and more on a unique set of attachment points. This feature would facilitate installation of car seats in airliners, and would obviate one of the great disadvantages of attaching them via the adult seat belt, which introduces the potential for the infant seat to move during the impact forces of deceleration, as parents may not snugly fit the restraint seat.

The other option is for the child to be restrained in a seat designed for airline use. This course has been opted by everyone who has considered through testing auto and aviation specific seats; the auto seats are found to suffer numerous disadvantages when subjected to deceleration tests in an aircraft environment – problems that can only be surmounted by an aviation-specific child restraint system. This is the finding of Transport Canada and Virgin Atlantic Airways (see comments at p. 5 & 6). Indeed, Virgin Atlantic supplies an infant seat designed for aircraft use, insisting that parents who arrive with a car seat check the seat, at no charge, as part of hold baggage.

It may not be necessary for the airline to provide the seat and to assume the burden of maintaining it, insuring that the seat cover is sanitary, or of installing it. Auto rental companies and caterers at airports have been suggested as possible suppliers of child restraint seats. In fact, the FAA could leave this matter up to the airlines, allowing some airlines to provide the seat while allowing others to contract for the seat. The FAA need only specify that children be properly restrained.

Goglia believes it is now up to Congress to mandate child restraints in airliners. “Congress can require the FAA to develop an in-seat restraint system and to mandate its use,” he said. He pointed out that Congress has done so in the past on other safety issues where the FAA and the administration were gridlocked. For example, it was at Congressional insistence that traffic alert/collision avoidance systems (TCAS) were installed on cargo planes.

“There’s a lot that could be done, rather than saying, no, we’re not going to provide kid seats and walk away from the issue,” Goglia said.

Comments (Cont’d from p. 1)

me are extremely distressed and confused by the fact that very young children are the only items unrestrained in an airline cabin. Please rectify this dangerous situation by mandating universal occupant restraint on aircraft.”

David Shumate:
“...If parents don’t want the added expense or ‘hassle’ to protect their own children, then they should stay at home.
“...Additionally, I resent the fact that the unrestrained infant is a ‘little’ ball of mass – that can be transformed into a hurtling, mega pound, decapitating projectile during an emergency situation.”

Susanne Ogaltis, Johns Hopkins Univ. Center for Injury Research and Policy:
“We require buckling up in the car, and we require adults, luggage and coffee pots to be properly restrained in aircraft, however, young children can be held on an adult’s lap. ...
“...I don’t personally believe arguments presented by the FAA and NHTSA that requiring use of a car seat for children will mean a significantly greater cost to parents to travel, and that they will therefore choose to drive (i.e., a riskier method of traveling). I believe that the market system and the competition of airlines for travelers will cause the airlines to offer children’s rates or special offers, particularly for families who purchase tickets to travel at lower-use times.”

Bonnie Farmer, education executive, Lancome Cosmetics:
“These comments are based on my experience as a frequent flyer, the daughter of a Pan Am 747 captain, the sister of a flight attendant, the mother of one child and carrying a child in the sixth month of pregnancy. ...
“...It would be considered illegal to place an infant or small child in a vehicle without proper child safety/restraint equipment. There have been unfortunate instances in which an infant has suffered or worse at the hands of an industry that needs to insure the optimum standards in split second accuracy.
“Funding cannot be an issue in this critical decision when there is a monetary gap of 75% in the cost of an airline ticket depending on 21-5 days of issue.”

Susan Hood:
“Airlines have grievously disregarded and jeopardized the health and well-being of infants and young children by not providing for their safety during air travel. ...
“Past experience has shown that a child on a parent’s lap will break free from the adult’s arms as a plane takes emergency action or encounters extreme turbulence. Unrestrained, a child is vulnerable to injury or even death when these circumstances occur. ... If a child restraint system can prevent even one child a year from injury or death, it is worth whatever it costs.”

Joseph and Laura Hebert:
“To expect parents to supply the safety seat is unrealistic. There are so many different kinds of car seats that there is no way that the flight attendants would know how to use all of them properly ... Please make airline supplies child seats mandatory so that all families can travel with their little children safely.”

Matthew Hoh:
“The FAA is mandated with the responsibility for aviation safety, yet in the past they have said ‘only a few lives (children under two years of age) have been lost.’ That is totally unacceptable!”

Informed individuals
Wayne Williams, an aviation survival expert:
“These comments are based on 55 years of aviation experience. ... One of my early impressions, as I became directly involved in airline safety, was that airline passenger operations involved relatively casual approaches to safety measures that military aviators considered absolute necessities. One was the failure to require passengers to use restraint systems at all times while seated. Within that general problem was the current practice of allowing young children to be held on parent’s laps, restrained only by the latter’s arms. ...
“...This inherently hazardous ‘restraint’ method continued to be allowed as take-off and landing speeds constantly and dramatically increased. As this occurred, government and industry had to be aware that each increase multiplied the forces that could be imposed upon parent’s arms, and upon children. ...
“Many of those future accidents are likely to be survivable for some occupants, as are today’s. Rapid mass evacuations may be necessary and possible. One consideration, then, as it is today, is that the frantic search for and the major distraction caused by a suddenly missing child who was – in the parent’s perception – snug in the parental arms a split second earlier, can adversely affect rapid evacuations and cause other casualties. ...
“Information in the ANPRM [advance notice of proposed rulemaking] and from other sources indicates that many automobile-type child restraints are not fully compatible with aircraft seats ...
“Who would be responsible for providing and installing ... aircraft-dedicated child restraints? Not necessarily the airlines. One obvious possibility would be the existing systems that currently assure the timely delivery of special meals, etc. Caterers could deliver CRS’s to aircraft, and properly install them in designated seats...
“The [FAA’s] responsibilities for passenger safety begin when we arrive at Terminals and board aircraft and end when we leave the destination terminal. If parents are informed (as they must be) that the safety and survival of their small children demand special provisions and some increase in travel cost and, having been so informed, the decide to drive a car, take a train, ride a bus, or stay home, the choice is theirs.”

Jan Lohr, chief flight attendant (retired), of United Flight 232 that crashed in Sioux City, Iowa, in 1989:
“In the 1989 Sioux City crash, a mother faced me in the corner field to state that I had told her to place her 22 month old son on the floor (as emergency procedures dictate) in preparation for our crash, and that he ‘was gone.’ Sylvia Tsao surely thought that if the airplanes and the FAA allowed children under two years of age to ride free on an adult’s lap, it must follow that it is safe to do so. Experience is a harsh and painful teacher ...
“And how many injuries have occurred that would otherwise be avoided. Severe turbulence killed a 9-month old girl in Aug. ’99 when she was wrenched from her mother’s arms and propelled to the cabin ceiling, fracturing her skull.
“The unspoken message indicates that children under two years have no importance or worth ... and have no vote. As a civilized nation, ostensibly caring and in particular treating our children, this portrays hypocrisy.”

Interest groups
Gail Dunham, National Air Disaster Alliance/Foundation:
“Placing children under the age of 2 on the floor during an emergency landing is an antiquated and totally unacceptable practice. The FAA should immediately implement rules for requiring that children under 40 pounds must be secured in a child restraint seat.”
Stephanie Tombrello, executive director, SafetyBeltSafe U.S.A.:

"The current tax-supported FAA publicity campaign, 'Turbulence Happens!,' underscores the concerns many groups have harbored about the welfare of young children who cannot lobby for their own protection. Unlike Styrofoam cups, baggage, and passengers older than 2, the child under 2 years old is the only item aboard an aircraft without legally mandated restraint during taxiing, takeoff, landing and episodes of turbulence."

Joseph Zanga, M.D., president, American Academy of Pediatrics:

"On behalf of 53,000 primary care pediatrician, pediatric medical specialists, and pediatric surgical specialists ... all children should be properly restrained."

Academe

Kathleen Weber, director, child passenger protection research program, The Univ. of Michigan:

"I have worked in the field of child occupant protection for nearly 20 years and have always found the FAA policy of exempting children under two years old from impact and turbulence protection to be unsupportable. ...

"Child restraint systems have been designed with the automobile environment in mind. This environment is characterized by a relatively high risk of crash involvement as well as high occupant compartment decelerations. Indeed, the FMVSS 213 crash corridor peaks at 24G, and child dummy decelerations over 40G are common. In addition, the geometry of some automobile seat and belt systems do not fit small children well for severe crash protection. On the other hand, survivable aircraft incidents, including turbulence, are characterized by lower decelerations (as indicated by the 16G crash test), and containment of the occupant in the airplane seat is itself an important goal. ...

"Those restraints developed for automotive use will provide good crash protection for small children and, perhaps more importantly, will maintain a child's position in the aircraft and provide necessary security during turbulence. Problems of geometric compatibility of child restraints with aircraft seats and belts will gradually disappear as the recommendations of SAE-ARP-4466, 'Dimensional Compatibility of Child Restraint Systems and Passenger Seat Systems in Civil Transport Airplanes,' are followed in the future for seats, belts, and child restraints alike. It may also be possible for several aircraft seating positions to be equipped with the new uniform child restraint anchors currently being incorporated in ground passenger vehicles. ...

"The untenable situation of loose children in aircraft has gone on long enough. Although there are details to be worked out, I am confident that this can be done by a small group of experts, once the FAA decides to go ahead."

Darryl Jenkins, Ph.D., The Aviation Institute, The George Washington University:

"People using an incorrect statistic and then applying what if scenarios to see how many people may be diverted is still incorrect. ... A death is an either/or event. There is no such thing as 0.4 deaths. A person is either dead or alive. ..." Given that the final results of our study are not significantly different from zero, we cannot conclude from a public policy standpoint that there are any compelling reasons not to restrain infants."

Safety equipment manufacturers

George Byer, DME Corp.:

"In 1994 DME Corporation embarked on a program to design a child seat system ... suitable for use on board aircraft. ...

"We have successfully accomplished our goal. ... Testing ... was successfully completed in April of 1997 with all measured criteria well within the required limits. The child restraint displayed no apparent damage from the tests, and the same child restraint was used in both forward and aft facing positions."

Dale Youngs, director of engineering, National Machine Co.:

"Our concern for aviation safety issues has developed through years of involvement with commercial aircraft de-ice systems and commercial emergency evacuation systems. ..."

"Current aircraft approved child seats are certified by testing per the FMVSS 213 specification. This FMVSS 213 requirement was initially composed in order to address the use of CRS's [child restraint systems] in automobiles. It was later amended to accommodate aircraft certification as well. In 1994, the FAA performed a series of tests (known as the CAMI tests) designed to evaluate the performance of current child restraint systems in aircraft. The results of this test program were somewhat surprising: ...

"Not all seats that pass the FMVSS 213 requirement fit in aircraft seats. This effectively renders these models useless in some aircraft ...

"Not all devices approved by FMVSS 213 will prevent serious head injuries in children in aircraft. The FMVSS 213 specification does not address the narrow spacing between seat rows commonly found in coach class airline seating arrangements. As a result, the child's head can impact the next seat forward, causing serious injury (and possibly death) to the child. ...

"The average position of an aircraft seat belt's anchor location is substantially forward of an automobile belt's anchor location. This change in position has a negative impact on the dynamic performance of the child seat. ...

"Certain types of restraint systems (booster seats, harness type systems) were found to do more harm than good. ...

"We ... concluded that the best alternative would be the 'aircraft specific' convertible child seat. An aircraft specific child seat can be designed to fit in all commercial aircraft seats while providing acceptable protection for children and infants (and do so at minimal cost). The alternative proposals fail short of a total package (fit, safety and cost)."

Airplane manufacturers

Richard Johnson, airworthiness and certification, Gulfstream Aerospace Corp. (the only manufacturer to submit a comment):

"40 lbs, 40 inches is about the time a child transitions to the existing belting system in an automobile. This seems to be a good cross over point from CRS to existing restraint systems. Verification could be as simple as 'You need to be this tall to ride this ride' like the amusement parks and weight is easy; scales abound."

From an airline

Mary Gooding, cabin safety officer, Virgin Atlantic Airways (from a memorandum for the record on an industry round table discussion hosted by the FAA):

"Virgin Atlantic does not permit automobile child restraints to be used on its aircraft and requires the parent to use their airline-provided seat or a belt extension referred to as a belly belt. Responding to a question about hygiene for Virgin Atlantic-provided child restraints, Ms. Gooding stated that Virgin Atlantic does not have a problem with keeping its child restraints clean because of removable covers. Virgin Atlantic carries two or three child restraints on each of its airplanes, and they haven't had a problem with logistics."
Pilot and flight attendants unions
Christopher Witkowski, director of air safety and health.

Association of Flight Attendants:
"The Association of Flight Attendants has for many years advocated elimination of the rule allowing children under two years of age as the only passengers to be unrestrained on an aircraft...

"CRS should be provided by parents of the child. The importance of familiarity with the use of the CRS has ... been identified ... It is the parent (adult) traveling with the child who will be responsible for the child during taxi, takeoff, landing, potential turbulence, crashing, and emergency evacuation. If the CRS is furnished by the air carrier, the parent may not know how to use it in an emergency."

Tom Phillips, chairman, accident survival committee, Air Line Pilots Association:
"We want the CRS required for all aircraft occupants under 40 pounds or under 40 inches to correct past mistakes. Though we go millions of miles and hours without an accident, we need to be prepared in the unlikely event we need the emergency equipment."

Nancy Garcia, health and safety representative, International Brotherhood of Teamsters, Airline Division:
"Child restraint aboard aircraft has been a 'high priority' issue for as long as 25 years! In 1973, the FAA initiated a study of infant restraints for the purpose of developing requirements for systems suitable for aircraft use. This study failed to develop any requirements and the project was abandoned. ...

"After 25 years, we find ourselves being asked the same questions that we have pondered and debated for over a quarter of a century. These questions have been answered. The time for action is long overdue."

Teamsters Local Union No. 2000 (representing Northwest Airlines flight attendants):
"Our industry is still faced with the fact that equal protection is not provided to all passengers. The discrepancy can be illuminated by comparing the relative protection offered a typical flight attendant (for example, seated in a rear-facing seat, against a bulkhead, next to an exit, and secured by a shoulder harness/lap belt) with a lap-held infant lacking any restraint other than the parent's arms."

Kathy Lord-Jones, safety coordinator, Association of Professional Flight Attendants:
"While the current education initiative is well intended by some and better than nothing, it is a thin cover by others to stall regulations regarding the enhancement of aircraft cabin safety for infants and small children who cannot protect themselves. The APFA could actively support an aggressive applicable education initiative only after the appropriate regulation has been established requiring proper restraints for all aircraft occupants." (Underlining in original)

Interest groups
Edward Driscoll, president, National Air Carrier Association:
"NACA and its member carriers believe that the current FAA regulations are sufficient to assure safety for infants and small children and provide flexibility for parents or guardians traveling with those children...

"It is vitally important to NACA member carriers that the FAA not require air carriers to provide a CRS for children, regardless of additional fares or child height and/or weight standard ... the rule would be totally impractical for non-scheduled operations by charter air carriers, as these air carriers do not operate into established stations from which to draw CRS units."

William Schultz, vice president, engineering and maintenance, General Aircraft Manufacturers Association:
"The development of new regulations regarding CRS should focus on Part 121 operations [scheduled air carriers]. The unique operating environment of Part 91 and Part 135 on-demand operations can not be appropriately or economically addressed by standard requirements relating to CRS installations and therefore should not be subject to such regulations."

John Ryan, Air Transport Association:
"ATA's general recommendation for cabin safety and efficiency is that every airline passenger regardless of size or age should be ticketed and have a separate seat. ...

"Airlines support dual certification of child restraints for automobiles and airplanes, and strongly discourage the certification of devices for airplanes alone. . . ."

"Airlines are of the view that the regulatory provision for lap children is no longer tenable."

David Lotterer, vice president, technical services, Regional Airline Association:
"RAA could not support any proposal that would require air carriers to supply CRS's for their customer use, no matter what type. One member pointed out that not only would airlines incur the initial cost of purchasing and maintaining an inventory of the CRS, but they would have to clean and package the CRS's after each use."

Accident investigation bodies
Jim Hall, chairman, National Transportation Safety Board (the only accident investigating body to submit a comment):
"The Safety Board is aware that the NHTSA has issued a proposed revision to Federal Motor Vehicle Safety Standard 213 to consider a method of securing CRS in automobiles. This change would require motor vehicles to have a dedicated anchorage system for CRS separate from the seatbelt system. These changes would make it impossible to use a CRS with an airline lapbelt and further reinforce the need to develop standards for integrated CRS for aircraft."

Other regulatory bodies
Frances Wokes, acting chief, cabin safety standards, Transport Canada:
"Transport Canada supports a separate standard for CRS approval, as is required for other equipment intended for use on aircraft ... our research indicates that the Motor Vehicle Safety Standard is not appropriate for aviation use and therefore a specific aviation standard should be developed. ...

"That is, should you want to concentrate on the aviation mode, you would likely want to make the device as compact and lightweight as possible with the ability to quickly install and adjust for a different sized user. ...

"Currently, air carriers have the ability to ensure that a wide variety of items are available such as medical oxygen, wheelchairs, dog kennels, special meals, commissary, ice, water, etc. In our view CRS could be handled in exactly the same way. ...

A certain number could be stowed on board, available in [jet] bridges, at the gates, on the catering trucks, etc. other innovative methods of providing a CRS could be a central rental system requiring a deposit, ...

"Passenger inquiries regarding the use of child restraints on board aircraft are directed to my office. It is worthy to note that in the last 5 years there have been numerous passengers who have contacted this office in an attempt to obtain more information about how they can ensure their infant's safety, and not one single one wanting to hold their infants."