

Subject : Improved seats in Air carrier Transport Category Airplanes  
Comments to FAA–2002–13464  
(U.S. DOT/FAA– SNRPM 14 CFR Part 121)

Brussels, February 19<sup>th</sup> 2003

As an independent Consultant to the European Commission, I am currently involved in an assessment of the available alternate safety options, applicable to the Improved seats in Transport Category Airplanes.

In this capacity we fully support the SNPRM for improved seats as we are convinced that, by meeting the needs of a larger market, standard economic solutions will emerge, together with a general improvement of the passenger's safety, as experienced in the automotive area.

While we understand that the intent of the Notice n°88-8 and this SNPRM is on installation of improved seats, as such, and doesn't debate on the alternate means of improvement, we wish to offer our contribution on the subject of Related activity (ref. p. 27 to 30).

*The FAA requested comments on the plan outlined for making the approval of the seats more efficient while maintaining required safety standards.*

**In answer to that request, it is suggested that the scope of the FAR 25-562, be recognized as applicable to the specific case of passenger's seat equipped with three point shoulder harnesses, as it is described for the cabin attendant's seats.**

**In support of this suggestion, reference is made to FAR 25-785 (c) requiring a shoulder harness, in addition to a lap belt, as an acceptable means to protect the occupant from head injury, when injurious objects are not eliminated within striking radius of the head.**

Indeed, it has been demonstrated that a front-seat row equipped with a three point shoulder harness (3PSH), at the conventional distance of 35" from SRP to bulkhead, could avoid the head impact of a 50<sup>th</sup>ile dummy in 16 g tests conditions, **therefore deleting the need of any further HIC analysis for such installation.**

Similarly, it could be a design objective to approach such results, from row to row by a generalized installation of the 3PSH on all seats.

At any pitch installation, the seat manufacturer would have a better control of the head trajectory and the **residual** impacts, if any, could be documented and submitted for HIC analysis.

**In such a self-contained seating system,** the seat Manufacturer would be sole responsible for the head excursion, and would document the Aircraft Manufacturer and Airlines interiors engineers as to the limits of installation to avoid head impact

Gradually, the experience gained on limited and standardized impact targets and conditions could be recorded as reliable data and avoid further HIC analysis.

The Aircraft Manufacturers and Airline Interiors Engineers, duly documented on the seat performance in controlling the passenger's head excursion, would then recover their flexibility in laying out their seating as required by their commercial demand .

Such system could be designed as compatible with standard automotive models of children restraint devices, as it is today in automobiles, on any seat in the cabin (hoped for by many comments you have received).

Sincerely,

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for Transport of the European Commission

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