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## **Potential Injury Criteria for Sideways Facing Aircraft Seats**

Current aviation regulations only specify performance and safety requirements for forward facing seats (FARs 23.562 / 25.562 / 27.562 / 29.562). However, sideways facing seats are being used increasingly in recent years, especially in business aircraft. As a result of the orientation of these seats, occupants are subjected to side impact during a crash. Since current regulations do not account for this loading direction, the risk of injury for occupants in sideways facing seats cannot be assessed properly. Therefore, it is required to develop injury criteria and tolerance levels for certification standards of sideways facing aircraft seats.

In the automotive safety field, a considerable amount of effort has been put into understanding the injurious response of the human body to side impact loading. Experimental campaigns using Post Mortem Human Subjects (PMHS) have been undertaken to assess the injury tolerance levels. These tests indicated that the neck is one of the most vulnerable structures under side impact loading.

In this paper, the potential to adapt the knowledge and technologies developed for automotive side impact to sideways facing aircraft seats will be studied. An overview will be given of the current status of automotive side impact injury criteria, regulations, testing procedures, and protective systems. These issues will be evaluated for their applicability in performance standards for the certification of side facing seats.