Comment-Response Document for Airbus A380
SC D-39

Commenter	Comment	EASA position
Boeing Commercial Airplanes	**1- Comment against 'Statement of issue' contents :** The description of the inertia locking device in the Statement Of Issue is too general in nature to provide detailed comments. However, a complete review of the proposed special conditions applied to the inertia locking devised cannot be adequately accomplished due to lack of a detailed description of the device itself. **2- Comment against SC Paragraph 1 - Third bullet item - 'Level of Protection Provided by Inertia Locking Device(s) (ILD)' :** The proposed section reads as follows: *"1) It must be demonstrated by test that the seat and attachments, when subject to the emergency landing dynamic conditions specified in JAR 25.562 and with the ILD not deploying, do not suffer structural failure that could result in:* • *Failure of the occupant restraint or any other condition that could result in the occupant separating from the seat. However, failure of the occupant restraint may occur where it can be demonstrated that the seat occupant cannot form a hazard to any other aircraft occupant. This would normally only be agreed by the Agency on*	**EASA position**: EASA agrees that the information given in the "Statement of Issue" is of general nature. However EASA believes that the additional information in the Special Condition 1) is sufficiently detailed for the purposes of requesting comments. **EASA position**: EASA suspects that the commenter may have misunderstood the text of this Special Condition. This failure condition, i.e. failure of the seatbelt and resulting unrestrained occupant, is limited to the case of the ILD **not** operating as intended and that furthermore there are two ILD devices on each seat, either one of which is capable of providing the full protection. EASA has therefore only accepted the unrestrained occupant in the case of a double ILD system failure and limited the adverse effect to the occupant of the seat in question.

	the basis of physical separation of the seat from other seats in the aircraft, for example in a mini-suite type arrangement." Our concern relates to the proposed allowance for failure of the occupant restraint and its impact to individual occupant safety. We suggest that this section be revised so that failure of the occupant restraint is NOT allowed. Allowing the occupant to separate from the seat is contrary to the current requirements of CS 25.785(b) (and the parallel FAA regulation), which, in part, states: *"(b) … [*seat occupants*] will not suffer serious injury in an emergency landing as a result of the inertia forces specified in CS 25.561 and CS 25.562."* There is no evidence in the proposed special conditions that, when the restraint fails, the occupant would remain protected. Further, CS 25.785(d) (and the parallel FAA requirement) requires protection from head injury by requiring, in part: *"(d)(2) … The elimination of any injurious object within striking radius of the head."* If the occupant is not restrained because of allowed restraint failure, the standard 35-inch head strike clearance would no longer apply. As a result, the entire mini-suite would potentially need to be padded, since there would be no control of where the occupant is	

	ejected. Additionally: • CS 25.562(c)(4) requires that the safety belt must remain on the occupant's pelvis during the impact. With the allowed failure of the restraint under the special conditions, this requirement is not met. • CS 25.562(c)(5) states, in part, that where head contact with seats or other structure can occur, protection must be provided so that head impact does not exceed a Head Injury Criterion (HIC) of 1000 units. It would be impractical to test the endless scenarios that would exist from the ejection of the occupant from the seat.	