

Comment				Comment summary	Suggested resolution	From the commenter point of view a modification of the published text is*: -Not requested; -Recommended; -Requested	EASA comment disposition	EASA response
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1	Airbus	SC 2.b	3	The appropriate limitations should be covered, as usual, via the operational aspects and not via a design requirement in the CRI.	Delete SC 2.b	Requested	Accepted	The intent of SC 2 is to ensure that the design of the expandable pelvic restraint provides adequate protection to occupants other than the 50th percentile male. The intent of SC 2 should be met by design. To be consistent with equivalent special conditions applicable to airbag installations SC 2.b will be deleted.
2	Airbus	SC 6	4	From PAX point of view and it's operation this is a conventional seat belt. Therefore no dedicated crew procedures which require an AFM update seems to be required.	Delete SC 6	Requested	Partially Accepted	EASA disagrees that an expandable pelvic restraint can be considered as 'conventional seat belt'. For example, it is relatively obvious to determine if proper use is being made of a conventional seat belt during taxi, take-off and landing. On the contrary, certain failures and unsafe configurations of the expandable pelvic restraints may be difficult to detect. Consequently, EASA considers the expandable pelvic restraint system as a novel design feature which is not fully addressed by existing CS-25 specifications. Existing OSD-CCD related to previously certified restraint systems is not considered adequate to address the operation of seating systems equipped with an expandable pelvic restraint.  Nevertheless, the text of SC 6 has been modified to foresee the possibility that no limitations and cabin crew procedures are necessary to ensure proper use of the expandable pelvic restraint system, where the design is self-reliant.
3	Airbus	IM 4	4	As the seat belt is of conventional use, the need for OSD-CCC is not obvious. Therefore it should not be mandatory but optional	Rephrase IM4 such that the need for OSD-CCC should be checked in the design process.	Requested	Partially Accepted	See the reply to comment #2.  The text of IM 4 has been modified to foresee the possibility that the installation of an expandable pelvic restraint system has no impact on OSD-CCD, where the design is self-reliant.
4	Airbus	SC 2.a.i	3	The use of a supplemental loop infant restraint belt is not covered by any regulation. Due to this, no applicable criterias exist. Therefore it should not be mentioned inside this SC.	The second part of the SC “including the case where a supplemental loop infant restraint is used” should be deleted	Requested	Not Accepted	The text of SC 2 is consistent with the text of similar special conditions that EASA has released to address the installation of non-conventional restraint systems such as systems incorporating airbags or pretensioners. The introduction of the expandable pelvic restraint system may have an impact on the capability to use the loop infant restraint. EASA expects such impact to be evaluated and, if needed, addressed by prohibiting the use of a loop infant belt on seats equipped with expandable pelvic restraint systems.  No change will be introduced to SC 2.

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5	The Boeing Company	Identification of Issue	1	There appears to be two revision levels of AS8043 being referenced. The definition of Automatic Locking Retractors is provided in paragraph 2.2.4.4.1 of AS8043 rev B. The definition of adjustment hardware appears in paragraph 2.4.3 of AS8043 rev New, and in paragraph 2.2.4.3 of AS8043 rev B. It is also noted that ETSO-C114 refers to AS8043 rev New. It is recommended that EASA use the latest version of AS8043.	Replace: The definition of ALR is given in paragraph 2.2.4.4.1 of SAE AS8043 And Paragraph 2.4.3 of SAE AS8043 includes the definition of ‘adjustment hardware’ With: The definition of ALR is given in paragraph 2.2.4.4.1 of SAE AS8043 <a href="#">rev B</a> And Paragraph <a href="#">2.2.4.3</a> of SAE AS8043 <a href="#">rev B</a> includes the definition of ‘adjustment hardware’	Requested	Partially Accepted	For consistency with ETSO-C114 A1, EASA has decided to make reference to the definition given in SAE AS8043 “Torso Restraint Systems”, March 1986. EASA has identified a typo in the reference to the paragraph that includes the definition of Automatic Locking Retractor (ALR), which should be changed from 2.2.4.4.1 to 2.4.4.1.  The text of the ‘Identification of issue’ has been updated accordingly.
6	The Boeing Company	Special Condition 1	3	If the harness system is capable of meeting ETSO-C114 Minimum performance Standards, then it makes sense to require this instead of creating additional showing of compliance at the installer level.	Replace: The harness system must meet the Technical Conditions specified in Section 3 of ETSO C114 A1, Torso Restraint System, dated 12th July 2013. With: <a href="#">The harness system must be ETSO-C114 approved.</a>	Requested	Not Accepted	As clarified in the ‘Identification of issue’, from the review of the design of the restraint system it is clear how certain functions of a typical restraint system, e.g. self-alignment capability, can be provided only in combination with the geometry and the design of the seat model under certification.  The minimum performance standards of ETSO C114 A1, ETSO C22g and, in turn, of ETSO C127b have not been developed taking into account a similar design. Yet EASA finds appropriate that the expandable pelvic restraint system is designed to meet the minimum performance standards of ETSO-C114 A1.  No change will be introduced to SC 1.
7	The Boeing Company	Special Condition 2	3	If all other Special Conditions are met, this condition is not necessary as the harness will behave in the same manner as every other harness.	Delete Special Condition 2	Requested	Not Accepted	The intent of SC 2 is not addressed by the combination of all the other special conditions. The commenter has not provided enough explanations in support of the proposal to delete SC 2.  SC 2 will not be deleted.
8	The Boeing Company	Special Condition 3	3	If all other Special Conditions are met, this condition is not necessary. Slack in the system is addressed by compliance to existing regulations CS 25.1301 and 25.1309 covering intended function. Seat belt misalignment and potential for insufficient tightening is addressed by CS 25.601, which includes evaluations of the restraint as described in ARP5526E. Inadvertent activation by the passenger is addressed in Special Condition 4.	Delete Special Condition 3	Requested	Not Accepted	EASA had determined that SC 3 is needed to address certain aspects and features of the design of the expandable pelvic restraint system may not necessarily be addressed in the demonstration of compliance with CS 25.601, CS 25.1301 and CS 25.1309. The text of special condition 3 has been revised to define in a more explicit manner the design objective that EASA considers essential to achieve the level of safety that is expected for a restraint systems of seating systems installed on CS-25 types.  Further clarifications on why EASA does not consider the expandable pelvic restraint as a conventional restraint system can be found in the reply to comment #2.  SC 3 will not be deleted.

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9	The Boeing Company	Special Condition 5	3	<p>The requirements of CS 25.562 require the seat to be in the configuration for taxi, take off and landing. In this position, the pelvic restraint and the Rotary Length Adjuster (RLA) will be locked in place provided proposed Special Condition 4 is shown compliant, and the intended function of the RLA mechanism is addressed by compliance to existing regulations CS 25.1301 and 25.1309. Thus the phrase “all possible configurations” is unnecessary.</p> <p>Consequently, this Special Condition need only address the aspects of the pelvic restraint design that are considered novel and whose performance is subject to variation based on manufacturing tolerance and wear and tear of the mechanism.</p>	<p>Replace:</p> <p>The seating system must meet the requirements of CS 25.562 considering all possible configurations in which the expandable pelvic restraint may be during taxi, take-off and landing. The effects of wear and criticality of manufacturing tolerances must be considered with respect to performance of the system in dynamic testing.</p> <p>With:</p> <p><a href="#">The effects of manufacturing tolerances and of wear and tear on the RLA mechanism must be considered with respect to their performance in dynamic testing conducted to meet CS 25.562.</a></p>	Requested	Accepted	<p>EASA agrees that the change proposed by the Commenter improves clarity but does not change the intent of SC 5.</p> <p>The text of SC 5 has been updated accordingly.</p>
10	The Boeing Company	Special Condition 6	3	<p>Inclusion of information unrelated to flying the aircraft is not appropriate for the Airplane Flight Manual. The current proposal has a conflict between SC 6 and Interpretative Material 4b. SC 6 requires a revision to the AFM, but Interpretative Material 4b requires solutions such as placards or briefing cards.</p>	<p>Replace:</p> <p>The Aircraft Flight Manual must include the limitations and cabin crew procedures necessary to ensure that passengers can make proper use of the torso restraint system provided with the expandable pelvic restraint.</p> <p>With:</p> <p><a href="#">Occupants and flight attendants must be aware of proper operation of the expandable pelvic restraint.</a></p>	Requested	Not Accepted	<p>There is no contradiction between SC 6 and IM 4. The AFM must include limitations and information necessary for safe operation of the aircraft. This does not exclude the need to install safety placards to deliver the same information to cabin occupants. The intent of IM 4 is to highlight the impact that the installation of the expandable pelvic restraint has on OSD-CCD.</p> <p>See also the replies to comments #2 and #3.</p>

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11	The Boeing Company	Interpretative Material 2	4	The text of the interpretive material should be clarified to identify the specific part of the system EASA is concerned with, namely the Rotary Length Adjustor, in order to direct the compliance finder to the appropriate parts of the seat system.	<p>Replace:</p> <p>In order to evaluate the effects of wear on performance of the torso restraint system in dynamic testing, the expandable pelvic restraint should undergo cyclic testing before being exposed to CS 25.562 test conditions. In the cyclic tests, the RLA should be operated in the range between maximum extension and retraction of the pelvic restraint. The minimum number of cycles to be performed should be established considering the likely use of the system in service and the frequency of the applicable maintenance tasks.</p> <p>With:</p> <p>In order to evaluate the effects of wear on performance of the pelvic restraint system in dynamic testing, the <a href="#">Rotary Length Adjustor</a> should undergo cyclic testing before being exposed to CS 25.562 test conditions. In the cyclic tests, the RLA should be operated in the range between maximum extension and retraction of the pelvic restraint. The minimum number of cycles to be performed should be established considering the likely use of the system in service and the frequency of the applicable maintenance tasks.</p> <p><a href="#">Design review of the RLA locking feature to ensure that failures will not occur under dynamic testing is an acceptable method to review the criticality of manufacturing tolerances to the RLA performance.</a></p>	Requested	Partially Accepted	<p>EASA agrees that the text of IM 2 may be improved by directing the scope of the cyclic testing to the evaluation of the performance of the RLA. It is EASA expectation that the cyclic tests will be performed on the seating system equipped with the expandable pelvic restraint system rather than at component level.</p> <p>The text of IM 2 has been updated to reflect the intent of the comment.</p>
12	The Boeing Company	Interpretative Material 4	4	Inclusion of information unrelated to flying the aircraft is not appropriate for the Airplane Flight Manual. Request the additional option of an FAA- or EASA-approved document.	<p>Replace:</p> <p>... briefing card or AFM briefing provision...</p> <p>With:</p> <p>... briefing card, AFM briefing provision, <a href="#">or alternate FAA- or EASA-approved document.</a></p>	Requested	Not Accepted	<p>The change requested by the commenter will not be introduced to IM 4. However, the reference to the AFM is not relevant to OSD-CCD and will therefore be deleted from IM 4.</p> <p>See also the reply to comment #10.</p>
13	FAA	Special Condition 3	3	The FAA recommends that the special conditions also address prevention of direct passenger manipulation of the RLA resulting in diminished capability of the restraint system during taxi, takeoff and landing. Such prevention means, which should be incorporated by design and not solely by cabin crew procedures, should be shown to be effective.	The FAA is concerned that the potential use of cabin crew procedures would be sufficiently effective to prevent passenger manipulation of the restraint system to an undesired position such as placing the seats upright for TT&L in a way that does not engage the RLA to restore the pelvic restraint system .	Requested	Accepted	EASA agrees that the expandable pelvic restraint system should be designed to ensure that any improper use or manipulation of the system is prevented. The text of SC 3 has been revised and text has been added in the Interpretative Material section to better define this objective and to clarify that in no case limitations and procedures should compensate for deficiencies in the design of the expandable pelvic restraint system.

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