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<b>Title</b>	Environmental protection requirements for supersonic transport aeroplanes
<b>NPA Number</b>	A-NPA 2022-05

**UK CAA** (European.Affairs@caa.co.uk) has placed **12** unique comments on this NPA:

<b>Cmt:</b>	<b>Segment description</b>	<b>Page</b>	<b>Comment</b>	<b>Attachments</b>
41	3.2.4. Noise certification reference procedures	10	<p><b>Page No:</b> 11</p> <p><b>Paragraph No:</b> 3.2.4(b)</p> <p><b>Comment:</b> It is stated that “it is currently not expected that the VNRS of SST aeroplanes would be active during the approach segment” and that “The approach reference procedure for SST aeroplanes in this document is therefore proposed to be identical to the one for subsonic jet aeroplanes”. UK CAA supports this for an aircraft without VNRS. However it cannot be excluded that an SST aeroplane will be developed with an active VNRS during the approach segment. With this in mind UK CAA recommends that an approach reference procedure with VNRS be proposed.</p> <p><b>Justification:</b> Having an approach reference procedure for an SST aeroplane with VNRS active during the approach segment would facilitate the noise certification of such an aeroplane.</p>	
42	3.2.6. Evaluation methods	12	<p><b>Page No:</b> 12</p> <p><b>Paragraph No:</b> 3.2.6, first bullet</p> <p><b>Comment:</b> It is stated that “If take-off noise levels are established with an active VNRS system, the integrated method of adjustment must be used to calculate the EPNL”. It is proposed that the simplified method of adjustment may be used for the establishment of the flyover noise levels if VNRS is deactivated well before the aircraft reaches a point on the flight track that is relevant for establishing the flyover noise level.</p> <p><b>Justification:</b> The use of the simplified method of adjustment would reduce the complexity of the process to adjust measured noise levels to reference conditions.</p>	
43	3.2.6. Evaluation methods	12	<p><b>Page No:</b> 12</p> <p><b>Paragraph No:</b> 3.2.6</p> <p><b>Comment:</b> It is stated that “in the absence of any approved (or proposed) equivalent procedures for SST aeroplanes it is assumed that the noise levels of SST aeroplanes will be established based on actual take-offs”. Intercept procedures should be permitted, when justified and appropriate, noting that in 3.2.5 it is stated that “VNRS will be deactivated well before the aircraft reaches a point on the flight track that is relevant for establishing the flyover noise level.”</p> <p><b>Justification:</b> The use of intercept procedures would lead to significant reductions in test time and cost.</p>	

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44	Proposal N-1 Applicability	19	<p><b>Page No:</b> 19</p> <p><b>Paragraph No:</b> Proposal N-1</p> <p><b>Comment:</b> UK CAA supports the application of the EASA requirements to all SST aeroplanes regardless of MTOM and number of engines.</p>	
45	Proposal N-3 Noise measurement points	19	<p><b>Page No:</b> 20</p> <p><b>Paragraph No:</b> Proposal N-3.1 (a)</p> <p><b>Comment:</b> UK CAA supports the definition of the lateral full-power reference noise measurement point being “the point on a line parallel to and 450 m from the runway centre line, <u>where the noise level is a maximum during take-off</u>”.</p>	
46	Proposal N-4 Maximum noise levels	20	<p><b>Page No:</b> 20</p> <p><b>Paragraph No:</b> Proposal N-4</p> <p><b>Comment:</b> UK CAA supports the proposed maximum noise levels, including the need to have a cumulative margin of not less than 17 EPNdB, and the need to have not less than 1 EPNdB at each of the three measurement points.</p>	
47	Proposal N-5.2 Noise certification reference procedures - Take-off reference procedure without VNRS	23	<p><b>Page No:</b> 23</p> <p><b>Paragraph No:</b> Proposal N-5.2.1 (d)(1)</p> <p><b>Comment:</b> UK CAA supports the proposal that the take-off speed shall be “at least <math>V_2 + 65</math> km/h (<math>V_2 + 35</math> kt) but not greater than <math>V_2 + 102</math> km/h (<math>V_2 + 55</math> kt)” and “not greater than 463 km/h (250 kt)”.</p>	
48	Proposal N-5.3 Noise certification reference procedures - Take-off reference procedure with VNRS	24	<p><b>Page No:</b> 24</p> <p><b>Paragraph No:</b> Proposal N-5.3.1 (a)</p> <p><b>Comment:</b> UK CAA supports the proposal that the “the most critical (that which produces the highest noise level) configuration shall be used”.</p>	
49	Proposal N-5.3 Noise certification reference procedures - Take-off reference procedure with VNRS	24	<p><b>Page No:</b> 24</p> <p><b>Paragraph No:</b> Proposal N-5.3.1 (b)</p> <p><b>Comment:</b> UK CAA supports the proposal that the “Any reduction of the thrust through the VNRS design shall not result in a thrust lower than 75 per cent of the maximum available take-of thrust”.</p>	

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50	Proposal N-5.3 Noise certification reference procedures - Take-off reference procedure with VNRS	24	<p><b>Page No:</b> 24</p> <p><b>Paragraph No:</b> Proposal N-5.3.1 (b) and N-5.3.1 (d)</p> <p><b>Comment:</b> Noting that N-5.3.1 (b) would permit a reduction in thrust to “not lower than 75 per cent of the maximum available take-of thrust” and that N-5.3.1 (d) would permit a further reduction in thrust to maintain “a climb gradient of 4 per cent” or “in the case of multi-engined aeroplanes, level flight with one engine inoperative, whichever thrust is greater” UK CAA proposes that no increase in thrust should be permitted between the first and second thrust reduction.</p> <p><b>Justification:</b> Communities under the flight path are known to react badly to noise caused by sudden fluctuations in engine thrust. By restricting any VNRS changes in thrust to reductions only the impact on local communities would be minimised.</p> <p><b>Proposed Text:</b> “there shall be no increase in thrust at any time during the reference procedure.”</p>	
51	Proposal N-5.3 Noise certification reference procedures - Take-off reference procedure with VNRS	24	<p><b>Page No:</b> 25</p> <p><b>Paragraph No:</b> Proposal N-5.3.1 (g)</p> <p><b>Comment:</b> UK CAA supports the proposal that the take-off speed shall be “at least <math>V_2 + 65</math> km/h (<math>V_2 + 35</math> kt) but not greater than <math>V_2 + 102</math> km/h (<math>V_2 + 55</math> kt)” and “not greater than 463 km/h (250 kt)”.</p>	
52	Proposal N-5.4 Noise certification reference procedures - Approach reference procedure	25	<p><b>Page No:</b> 25</p> <p><b>Paragraph No:</b> Proposal N-5.4</p> <p><b>Comment:</b> UK CAA supports the proposed approach reference procedures for an SST aeroplane without VNRS. However UK CAA recommends that an approach reference procedure with VNRS be proposed.</p> <p><b>Justification:</b> We believe it cannot be excluded that an SST aeroplane will be developed with an active VNRS during the approach segment. Having an approach reference procedure for an SST aeroplane with VNRS active during the approach segment would facilitate the noise certification of such an aeroplane.</p>	