



# EASA

European Aviation Safety Agency

## Q & A

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## Q & A

	QUESTION	EASA Feedback
1	As we do not intend to conduct full stall training tasks, FSTD Standard s.3 does not apply hence there is no need for the additional SOC describing the simulation of the stall model.	<p>Correct – but note s.1 has been re-written and s.2 applies requiring a SOC, reference AMC9 FSTD(A).300(a)(3)</p> <p>1. General, s.2:</p> <p>(i) for continuity purposes, the model should remain useable beyond the FSTD training envelope to the extent to allow completion of the recovery training; and</p> <p>(ii) where known limitations exist in the aerodynamic model for particular stall event manoeuvres (such as aeroplane configuration, approach-to-stall entry methods, and limited range for continuity of the modelling), these limitations should be declared in the required SOC.</p>



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2	<p>As for the enhanced icing model requirement in FSTD Standards d.3, t.1 and t.2. A SOC is required to meet AMC 13 FSTD(A).300 and also 2 objective cases to demonstrate the proper implementation and performance of the model. If the PRD of the FSTD is JAR FSTD A or CS-FSTD A initial release do we have to meet the new icing model requirement in issue 2 or will grandfather right prevails? If not implemented would we be looking at a limitation of some sort? Also can we go for the enhanced model implementation without necessarily adding the 2 QTG cases?</p>	<p>In order to get the full icing credit under Issue 2 an SOC is required. The tests have to be provided as well for verification.</p>



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3	<p>Specific clarification: For existing FSTDs, the high-altitude cruise objective test is not required.</p> <ol style="list-style-type: none"><li>1. The requirement for 2.c.(8b) requires a test for high-altitude cruise (near performance limited condition); in addition to the second segment climb, and approach or landing.</li><li>2. The comments section asks to refer to AMC9 FSTD(A) 300(b)(2), however subsequently states that it is not applicable.</li><li>3. AMC11 FSTD(A).300 paragraph (a) infers that for previously qualified FSTDs objective tests are only required for the second segment climb and approach or landing configuration, i.e. the high-altitude cruise case is not required.</li></ol>	<p>It is required. The intent was always to include the cruise configuration as described in the Explanatory Note to Decision 2018/006/R (reference section 2.5. What are the benefits and drawbacks “Safety improvement by further mitigating/preventing loss of control in-flight (LOC-I). Safety would improve due to the objective testing provisions which would validate not only the cruising configuration, but also the approach and landing configurations. Current FSTDs would be qualified to accurately reproduce the approach to stall in certain conditions and the behaviour of the aeroplane when affected by ice.”)</p> <p>AMC 11 is meant for previously qualified devices and in some cases where the aeroplane being represented may not have the required validation data – this AMC allows an acceptable means of providing such test data by using a footprint method (when no validation data is available).</p> <p>The approach we adopt is that if any of the elements of Issue 2 are missing, then this will be shown in the Qualification Certificate as “Restrictions or limitations” to show the users the capabilities of the FSTD.</p>



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4	The text in the Comments “ AMC9 FSTD(A).300(b)(2) is not applicable.” is intended to be for FTDs only.	<p>It was not the intention of WP1 to add additional requirements for FTD.</p> <p>Under Validation Test 2.c.(8b) Approach-to-stall characteristics in the final column COMMENTS were to be added by our document control department - "For FTD Flight Conditions required for 2nd segment climb and approach or landing only. AMC9 FSTD(A).300(b)(2) not applicable "</p> <p>Unfortunately an extra line was added which confuses the way it is written.</p>



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5	<p>1°) In the table in appendix 1 to CS-FSTD(A).300 Flight Simulation Training Devices Standards, it is indicated at line 1.h.3 that « each upset prevention and recovery feature programmed at the IOS and the associated training manoeuvre have been evaluated by a suitably qualified pilot ». AMC9 FSTD(A).300 states that « a suitably qualified pilot should (...) be familiar with the upset scenarios and associated recovery methods as well as the cues necessary to accomplish the required training objectives ». What is meant by familiar ?</p> <p>2°) In the table in appendix 1 to CS-FSTD(A).300 Flight Simulation Training Devices Standards, it is indicated at line 1.s.3 for FSTDs qualified for full stall training tasks that « an additional SOC has also to include a verification that the FSTD has been evaluated by a subject-matter expert pilot acceptable to the competent authority. AMC10 indicates in (e)(2) that the SME has « direct experience in conducting stall manoeuvres in an aeroplane that shares the same type rating as the make, model, and series of the simulated aeroplane; this stall experience must include hands-on manipulation of the controls at angles of attack sufficient to identify the stall ». By requesting « direct experience », does this mean a test pilot or equivalent ?</p>	<p>1. See question before. May be the same person being part of the FSTD operator's team confirming that the devices meets the requirements before presenting it for evaluation by the competent authority.</p> <p>2. See question before. Full stall training: SOC to be provided by the OEM's SME. The operator has to provide a SOC as well that the model as provided by the OEM has not been modified (see AMC10(3)(e)).</p>



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5	<p>3°) When only the approach to stall option is chosen, what is the difference with today's evaluation of the approach to stall, in terms of objective and subjective tests, data needed and IOS presentation ?</p> <p>4°) In AMC11 FSTD(A).300 regarding previously qualified FSTDs it is indicated that « it may not always be possible to provide the required validation data for the new or revised objective test cases to support FSTD qualification for stall and approach to stall. ». What is meant by « not possible » ? For example, if the FSTD operator does not wish to pay for additional data, would that be considered as « not possible » for this operator ? Will there be a list of aircraft types affected ?</p> <p>5°) For FSTDs already qualified under CS-FSTD(A) Initial Issue or earlier rules, but where the operator wishes to include Issue 2 requirements on UPRT, how would this be mentioned on the FSTD certificate ?</p>	<p>3. Approach to stall is not an option, it is a default. Only one additional flight condition case have been added for high altitude (clean config) and for one of the three stall tests the 'turning flight'. In addition there is an evaluation of the effect of airframe icing on stall.</p> <p>4. "Not possible" in terms of old A/C types where no validation data exist. So a footprint test done by a suitable SME shall be taken as baseline data.</p> <p>5. Examples will be given</p>



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5	6°) Is EASA aware of potential difficulties raised by some TC holders (e.g. : business aviation) to provide additional data to support FSTD evaluations to be conducted against provisions of CS-FSTD (A) issue 2 ?	6. Open discussion



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6	<p>1. AMC9 FSTD(A).300(b)(1)(v) Numerical tolerances are not applicable past the stall angle of attack, but must demonstrate correct trend through recovery. [...] What does correct trend through recovery exactly mean? Is there a difference in the definition between “correct trend” and “correct trend and magnitude”? Example for clarification: According to flight test data, the aeroplane shows “wing-diving” over the right wing in post stall regime (according to the particular aeroplane configuration and flight condition). Does correct trend mean that it is mandatory that the simulator shows the same behaviour (tipping over the right wing at the same angle of attack) but the roll rate, more specifically time derivation of the bank angle, doesn’t matter?</p>	<p>Text taken from FAA Part 60 Change 2 to support those FSTD operators who have dual (EASA/FAA) qualification. EASA does not require training in this area.</p> <p>FAA to share their experience in this area.</p>



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6	<p>2. AMC11 FSTD(A).300(f) Objective demonstration tests of engine and airframe icing effects (AMC1, FSTD Validation Tests, test 2.i) are not required for previously qualified FSTD.</p> <p>Apart from the Validation Test icing (test 2.i) are there any further requirements applicable regarding engine and airframe icing (e.g. SoC required in CS FSTD(A).300 (1.t.1)) to previously qualified FSTD?</p> <p>3. ED Decision 2018/006/R of 3 May 2018 issuing the Certification Specifications for Aeroplane Flight Simulation Training Devices It shall apply from the applicability date of the related Commission Regulation 7 (which has been prepared based on EASA Opinion No 06/2017) that introduces new requirements on loss of control prevention and recovery training (UPRT) into Commission Regulation (EU) No 1178/2011. Upon applicability, it shall also apply to FSTDs used for UPRT as per Commission Regulation (EU) No 965/2012.</p>	<p>2. SoC requires more information with Issue 2.</p> <p>3. Already answered (slide, day 1)</p>



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7	How should the competent authorities define the minimum competencies of FI and TI who perform UPRT update evaluations? For example, should the FI have similar competency as the SME?	This is part of the day 2 discussion to clarify what authorities consider as 'suitable training' (see as well presentation given by LBA/EASA)



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