

Public - Document Review Comment Log

Title of Document: PS-ANE-33.83-01, Clarification for 14 CFR Part 33.83 Vibration Test						
Author:		Dorina Mihail, 781-238-7114				
Technical Writer/Editor:		Charles Smith, 781-238-7123				
Comments Disposition Date:		03/16/15				
Reviewing Office or Company						
Organization / Company address:		Textron Aviation				
Comments Sent By:		Poonam Richardet				
Phone w/area code:		(316) 517-5395				
#	Name of commenter	Page and Paragraph Number	Comment	Reason for Comment	Recommendation	Disposition/Response to Comment
1.		All	It was unclear, at least in the policy statement, whether the FAA has plans to amend the rule to correct this issue. It would seem at some point that the rule should be amended to clear this up.		Amend 33.83	<p>Answer to Question.</p> <p>On July 5, 2012, the FAA published a Technical Amendment entitled, "Airworthiness Standards: Aircraft Engine" (77 FR 39623). In that technical amendment, the FAA clarified the vibration test requirements as per this policy. However, that amendment was changed back to the language in Sec. 33.83(a) of the previous</p>

Public - Document Review Comment Log

Title of Document: PS-ANE-33.83-01, Clarification for 14 CFR Part 33.83 Vibration Test						
Author:		Dorina Mihail, 781-238-7114				
Technical Writer/Editor:		Charles Smith, 781-238-7123				
Comments Disposition Date:		03/16/15				
Reviewing Office or Company						
Organization / Company address:		Textron Aviation				
Comments Sent By:		Poonam Richardet				
Phone w/area code:		(316) 517-5395				
#	Name of commenter	Page and Paragraph Number	Comment	Reason for Comment	Recommendation	Disposition/Response to Comment
						amendment 33-17 in response to the Modification and Replacement Parts Association (MARPA) comment that the rule appeared to be a substantive change that should have been open to public comment. Refer to Technical Amendment "Airworthiness Standards: Aircraft Engines; Correction" (77 FR 58301) published on

Public - Document Review Comment Log

Title of Document: PS-ANE-33.83-01, Clarification for 14 CFR Part 33.83 Vibration Test						
Author:		Dorina Mihail, 781-238-7114				
Technical Writer/Editor:		Charles Smith, 781-238-7123				
Comments Disposition Date:		03/16/15				
Reviewing Office or Company						
Organization / Company address:		Textron Aviation				
Comments Sent By:		Poonam Richardet				
Phone w/area code:		(316) 517-5395				
#	Name of commenter	Page and Paragraph Number	Comment	Reason for Comment	Recommendation	Disposition/Response to Comment
						September 20, 2012. The FAA decided not to pursue a renewed rulemaking effort and instead provide the clarification by the means of this policy.

Public - Document Review Comment Log

Title of Document: PS-ANE-33.83-01, Clarification for 14 CFR Part 33.83 Vibration Test						
Author:		Dorina Mihail, 781-238-7114				
Technical Writer/Editor:		Charles Smith, 781-238-7123				
Comments Disposition Date:		03/16/15				
Reviewing Office or Company						
Organization / Company address:		European Aviation Safety Agency				
Comments Sent By:		Frederic Chambon				
Phone w/area code:		+49 221 89990-4139				
#	Name of commenter	Page and Paragraph Number	Comment	Reason for Comment	Recommendation	Disposition/Response to Comment
2.		All	On 5 February 2014 EASA has published a Notice for Proposed Amendment (NPA) 2014-03 Engine vibration surveys proposing to amend CS-E 650 and AMC E 650. One of the main changes would be to clarify in CS-E 650 that compliance must be established by test or a combination of test and validated analysis. The proposed AMC E 650 explains that the analytical model constituting this		EASA therefore does not see any contradiction between the Policy Statement PS-ANE-33.83-01 as proposed by the FAA, and NPA 2014-03 as proposed by EASA.	Noted

Public - Document Review Comment Log

Title of Document: PS-ANE-33.83-01, Clarification for 14 CFR Part 33.83 Vibration Test						
Author:		Dorina Mihail, 781-238-7114				
Technical Writer/Editor:		Charles Smith, 781-238-7123				
Comments Disposition Date:		03/16/15				
Reviewing Office or Company						
Organization / Company address:		European Aviation Safety Agency				
Comments Sent By:		Frederic Chambon				
Phone w/area code:		+49 221 89990-4139				
#	Name of commenter	Page and Paragraph Number	Comment	Reason for Comment	Recommendation	Disposition/Response to Comment
			Validated Analysis should be validated against one or more Baseline Tests. The definitions of the Baseline Tests, Validated Analysis, and the domain of applicability associated to the Validated Analysis, ensure that the resulting demonstration would be deemed equivalent to a compliance by test.			
3.		Page 2 Paragraph 4.b.	EASA would like to suggest the following improvement in the	Adding the recommended sentence would avoid	Add at the end of the paragraph 4.b, the	Adopted. We adopted the intent

Public - Document Review Comment Log

Title of Document: PS-ANE-33.83-01, Clarification for 14 CFR Part 33.83 Vibration Test	
Author:	Dorina Mihail, 781-238-7114
Technical Writer/Editor:	Charles Smith, 781-238-7123
Comments Disposition Date:	03/16/15

Reviewing Office or Company

Organization / Company address:	European Aviation Safety Agency
Comments Sent By:	Frederic Chambon
Phone w/area code:	+49 221 89990-4139

#	Name of commenter	Page and Paragraph Number	Comment	Reason for Comment	Recommendation	Disposition/Response to Comment
			text of the proposed paragraph 4.b. Conduct of an engine test.	the reader of the proposed Policy to interpret that only full engine tests are acceptable for compliance demonstration. Note (*): These "certain conditions" are further explained in FAA AC33.83A and AMC E 650, which are considered harmonized in this respect.	following: "Note that AC33.83A paragraph 5.c. also provides allowance for conducting rig testing in lieu of full engine test, providing certain conditions are met."(*)	of this comment by adding paragraph 4.c. stating that the methods of compliance provided in AC33.83A are not invalidated by this policy. Therefore, the compliance by rig test provided in AC33.83A remains applicable.

Reviewing Office or Company

Organization / Company address:	Rolls-Royce plc
--	-----------------

Public - Document Review Comment Log

Title of Document: PS-ANE-33.83-01, Clarification for 14 CFR Part 33.83 Vibration Test	
Author:	Dorina Mihail, 781-238-7114
Technical Writer/Editor:	Charles Smith, 781-238-7123
Comments Disposition Date:	03/16/15

Comments Sent By:	Zaki Mahroof
Phone w/area code:	+44 1332 2 45518

#	Name of commenter	Page and Paragraph Number	Comment	Reason for Comment	Recommendation	Disposition/Response to Comment
4.		All	RR has participated in an EASA Rulemaking Group which resulted in publication of Notice for Proposed Amendment (NPA) 2014-03 Engine vibration surveys. We understand that the final rule and CRD will be published shortly. This NPA proposes amending CS-E 650 and AMC E 650 in order to provide clarification of several aspects and to reflect current practice, addressing some of the same areas of confusion as identified in section 3 of the FAA policy statement.	An amendment to the first part of the EASA rule is to replace the term 'vibration surveys' with '...test or a combination of test and validated analysis...'. The proposed revision to the rule and AMC introduce the concept of validated analysis as a means to extend the applicability of existing results from a baseline test. The intent is that for a new type, a test will always be required as part of the evidence of compliance but the definition of baseline	As a general comment, whilst the FAA policy seems to be in line with the EASA NPA in terms of clarifying the need for testing, it could be interpreted as meaning that a full engine test is always required. In fact AC33.83A which is referenced in 4(b) does allow rig testing under certain conditions.	<p>1. We concur with the general comment that "the FAA policy seems to be in line with the EASA NPA in terms of clarifying the need for testing".</p> <p>2. We added paragraph 4.c. stating that the methods of compliance provided in AC33.83A are not invalidated by this policy. Therefore, the compliance by rig test provided in AC33.83A remains applicable. We further clarified that existing FAA practices for compliance by similarity are not</p>

Public - Document Review Comment Log

Title of Document: PS-ANE-33.83-01, Clarification for 14 CFR Part 33.83 Vibration Test						
Author:		Dorina Mihail, 781-238-7114				
Technical Writer/Editor:		Charles Smith, 781-238-7123				
Comments Disposition Date:		03/16/15				
Reviewing Office or Company						
Organization / Company address:		Rolls-Royce plc				
Comments Sent By:		Zaki Mahroof				
Phone w/area code:		+44 1332 2 45518				
#	Name of commenter	Page and Paragraph Number	Comment	Reason for Comment	Recommendation	Disposition/Response to Comment
				test permits this to be a test on the first model of an engine type or a previously certified type provided the design characteristics and operating conditions are sufficiently similar.		invalidated by the proposed policy.

Public - Document Review Comment Log

Title of Document: PS-ANE-33.83-01, Clarification for 14 CFR Part 33.83 Vibration Test						
Author:		Dorina Mihail, 781-238-7114				
Technical Writer/Editor:		Charles Smith, 781-238-7123				
Comments Disposition Date:		03/16/15				
Reviewing Office or Company						
Organization / Company address:		Williams International				
Comments Sent By:		Patti Bonnen				
Phone w/area code:		(268) 960-2460				
#	Name of commenter	Page and Paragraph Number	Comment	Reason for Comment	Recommendation	Disposition/Response to Comment
5.		Page 2 Paragraph 3.e.	<p>Comment regarding the second and third sentences:</p> <p>“The confusion persists despite efforts to clarify the requirements in advisory circulars, trainings, and seminars. Although most applicants understand that an engine test should be used for compliance to the rule, we continue to receive questions from new applicants and new DERs regarding the intent of</p>	Not necessary to support the issuance of the policy nor does it contribute to the intended clarification.	Suggest deleting this section.	Adopted

Public - Document Review Comment Log

Title of Document: PS-ANE-33.83-01, Clarification for 14 CFR Part 33.83 Vibration Test						
Author:		Dorina Mihail, 781-238-7114				
Technical Writer/Editor:		Charles Smith, 781-238-7123				
Comments Disposition Date:		03/16/15				
Reviewing Office or Company						
Organization / Company address:		Williams International				
Comments Sent By:		Patti Bonnen				
Phone w/area code:		(268) 960-2460				
#	Name of commenter	Page and Paragraph Number	Comment	Reason for Comment	Recommendation	Disposition/Response to Comment
			the rule.”			
6.		Page 2 Paragraph 4.	It is proposed that the use of similarity as a means of compliance be explicitly addressed.	A literal interpretation of this policy could lead to the conclusion that similarity is not allowed. With the addition of the proposed words in this policy, the use of similarity must trace back to a valid and applicable engine or rig test. With these restrictions, it is proposed that similarity is a direct means of compliance for 14 CFR 33.83.	Add the following paragraph: “4.c. Similarity. As described in this policy, the vibration survey is intended to be performed by test. However, in some cases similarity may be used to show compliance with § 33.83 using test data from a previous engine type certification program. Similarity may be used to the extent that it exists between the baseline engine	Partially Adopted. We added in paragraph 4.c. language stating that this policy does not invalidate FAA accepted practices for compliance based on similarity to a FAA approved baseline engine test. However, we did not add the recommended guidance for when the similarity may be used because it would be outside the scope of the policy.

Public - Document Review Comment Log

Title of Document: PS-ANE-33.83-01, Clarification for 14 CFR Part 33.83 Vibration Test						
Author:		Dorina Mihail, 781-238-7114				
Technical Writer/Editor:		Charles Smith, 781-238-7123				
Comments Disposition Date:		03/16/15				
Reviewing Office or Company						
Organization / Company address:		Williams International				
Comments Sent By:		Patti Bonnen				
Phone w/area code:		(268) 960-2460				
#	Name of commenter	Page and Paragraph Number	Comment	Reason for Comment	Recommendation	Disposition/Response to Comment
					test and the new design.”	
7.		All	EASA NPA 2014-03 dated 25MAY2014 was issued to propose amendment of CS-E 650 and AMC 650 to allow validated analysis as an acceptable means of compliance. Though the rule update is not finalized, the proposal to add validated analysis, with appropriate restrictions, can demonstrate compliance similar to		Provided the NPA is implemented as proposed, validated analysis should be considered as an acceptable means of compliance to maintain harmonization.	Noted. 1. EASA published the final rule in CS-E 650 Amendment 4. The revised rule allows for the use of validated analysis. Section 33.83 does not provide for the use of validated analysis. Therefore, the methods of compliance with 33.83 can't provide guidance for the use of validated analysis.

Public - Document Review Comment Log

Title of Document: PS-ANE-33.83-01, Clarification for 14 CFR Part 33.83 Vibration Test						
Author:		Dorina Mihail, 781-238-7114				
Technical Writer/Editor:		Charles Smith, 781-238-7123				
Comments Disposition Date:		03/16/15				
Reviewing Office or Company						
Organization / Company address:		Williams International				
Comments Sent By:		Patti Bonnen				
Phone w/area code:		(268) 960-2460				
#	Name of commenter	Page and Paragraph Number	Comment	Reason for Comment	Recommendation	Disposition/Response to Comment
			use of validated analysis for 14 CFR 33.94.			2. In regard to harmonization, at this time FAA has no plans for revising 33.83 to provide for the use of validated analysis. It is noted that EASA's rulemaking effort was opened to the Aerospace Industries Association (AIA) by invitation from the Aerospace and Defense Industries Association of Europe (ASD). However, there was no AIA representation to the working group.

Public - Document Review Comment Log

Title of Document: PS-ANE-33.83-01, Clarification for 14 CFR Part 33.83 Vibration Test						
Author:		Dorina Mihail, 781-238-7114				
Technical Writer/Editor:		Charles Smith, 781-238-7123				
Comments Disposition Date:		03/16/15				
Reviewing Office or Company						
Organization / Company address:		Modification and Repair Parts Association, 2233 Wisconsin Ave, NW Suite 803 Washington, DC 20007				
Comments Sent By:		Ryan Aggeraarn				
Phone w/area code:		(202) 628-8947				
#	Name of commenter	Page and Paragraph Number	Comment	Reason for Comment	Recommendation	Disposition/Response to Comment
8.		Page 1 Paragraph 2.	Because the requirement that the “engine surveys shall be based upon an appropriate combination of experience, analysis, and component test,” it is possible that the Policy Statement (and the regulation itself) may be mistakenly read to require independent component testing to satisfy the elements of	Both the plain language of the regulation and past practice demonstrate that the vibration test described by § 33.83 is intended to apply at the product level, that is, to full engines, and not to individual components standing alone. As § 33.83(a) states, the engine survey itself is based upon a combination of “experience,	MARPA recognizes that the Draft Policy Statement is not intended to apply to PMA parts. However, because of the potential for confusion, MARPA recommends including a clarifying statement to emphasize that PS-ANE-33.83-01 applies only to full engine	Partially Adopted. We added the references to AC33.83-1 and AC33-8. We did not add AC21.303-4 because it pertains to the PMA process under part 21, while this policy provides guidance for a specific rule (33.83) in part 33. We did not add the reference to FAA Order 8110.42D

Public - Document Review Comment Log

Title of Document: PS-ANE-33.83-01, Clarification for 14 CFR Part 33.83 Vibration Test						
Author:		Dorina Mihail, 781-238-7114				
Technical Writer/Editor:		Charles Smith, 781-238-7123				
Comments Disposition Date:		03/16/15				
Reviewing Office or Company						
Organization / Company address:		Modification and Repair Parts Association, 2233 Wisconsin Ave, NW Suite 803 Washington, DC 20007				
Comments Sent By:		Ryan Aggeraarn				
Phone w/area code:		(202) 628-8947				
#	Name of commenter	Page and Paragraph Number	Comment	Reason for Comment	Recommendation	Disposition/Response to Comment
			the vibration survey requirement of § 33.83(a). This may be particularly likely to happen in the case of a PMA engine part, which is designed and produced independent of the type design and therefore in most cases would not have been subject to the full engine vibration survey. Requiring a vibration survey for individual PMA parts, however, would be	analysis, and component test.” ⁵ This collective action constitutes the engine survey, as required by § 33.83(a). This understanding is further supported by the statement that “[e]ach engine must undergo vibration surveys.” If each component were intended to be put through a vibration test independent of the completed	testing of original type design, and not to PMA parts produced for those types. We suggest the following language be included under section 2 Current Regulatory and Advisory Material: <i>“This Policy Statement applies to full engine vibration surveys as described in § 33.83. Guidance</i>	because the order prescribes responsibilities and procedures for the FAA personnel only. We also found that the recommended phrase “This Policy Statement applies to full engine vibration surveys as described in § 33.83” is already addressed in paragraph 1 of the policy stating “This policy clarifies that the required vibration

Public - Document Review Comment Log

Title of Document: PS-ANE-33.83-01, Clarification for 14 CFR Part 33.83 Vibration Test						
Author:		Dorina Mihail, 781-238-7114				
Technical Writer/Editor:		Charles Smith, 781-238-7123				
Comments Disposition Date:		03/16/15				
Reviewing Office or Company						
Organization / Company address:		Modification and Repair Parts Association, 2233 Wisconsin Ave, NW Suite 803 Washington, DC 20007				
Comments Sent By:		Ryan Aggeraandr				
Phone w/area code:		(202) 628-8947				
#	Name of commenter	Page and Paragraph Number	Comment	Reason for Comment	Recommendation	Disposition/Response to Comment
			incorrect for two reasons.	product, the regulation would clearly call out individual component vibration testing. Therefore it is apparent that the vibration survey is intended to apply only to the full engine.	<i>for PMA part applications for engine and APU parts can be found in FAA Advisory Circulars 21.303-4, 33-8, 33.83-1, and FAA Order 8110.42D."</i>	surveys and engine surveys of § 33.83(a) are intended to be implemented by engine test". AC33.83A provides guidance for compliance with the engine test requirement and allows for a rig test, which is less than a full engine test; this allowance is also addressed in the response to comments 3, 4, and 8 of this document.

Public - Document Review Comment Log

Title of Document: PS-ANE-33.83-01, Clarification for 14 CFR Part 33.83 Vibration Test						
Author:		Dorina Mihail, 781-238-7114				
Technical Writer/Editor:		Charles Smith, 781-238-7123				
Comments Disposition Date:		03/16/15				
Reviewing Office or Company						
Organization / Company address:		Modification and Repair Parts Association, 2233 Wisconsin Ave, NW Suite 803 Washington, DC 20007				
Comments Sent By:		Ryan Aggeraarn				
Phone w/area code:		(202) 628-8947				
#	Name of commenter	Page and Paragraph Number	Comment	Reason for Comment	Recommendation	Disposition/Response to Comment
9		Page 1, Paragraph 2.	Because the requirement that the “engine surveys shall be based upon an appropriate combination of experience, analysis, and component test,” it is possible that the Policy Statement (and the regulation itself) may be mistakenly read to require independent component testing to satisfy the elements of	Two FAA Advisory Circulars in particular address PMA engine part concerns and PMA engine part vibratory stress concerns: FAA AC 33-8 Guidance for Parts Manufacturer Approval of Turbine Engine and Auxiliary Power Unit Parts under Test and Computation and	Section 2 also contains the following statement: “Advisory Circular AC33.83A provides acceptable means of compliance with the engine vibration survey requirements of § 33.83.” We recommend the sentence be replaced with the following	Partially Adopted. 1. We did not add the statement that AC33.83A is “in support of a Type Certificate application, or changes to Type Certificates.” because (a) explaining for which projects the AC applies falls outside the scope of the policy clarification of the rule, and (b) the guidance in

Public - Document Review Comment Log

Title of Document: PS-ANE-33.83-01, Clarification for 14 CFR Part 33.83 Vibration Test						
Author:		Dorina Mihail, 781-238-7114				
Technical Writer/Editor:		Charles Smith, 781-238-7123				
Comments Disposition Date:		03/16/15				
Reviewing Office or Company						
Organization / Company address:		Modification and Repair Parts Association, 2233 Wisconsin Ave, NW Suite 803 Washington, DC 20007				
Comments Sent By:		Ryan Aggeraer				
Phone w/area code:		(202) 628-8947				
#	Name of commenter	Page and Paragraph Number	Comment	Reason for Comment	Recommendation	Disposition/Response to Comment
			the vibration survey requirement of § 33.83(a). This may be particularly likely to happen in the case of a PMA engine part, which is designed and produced independent of the type design and therefore in most cases would not have been subject to the full engine vibration survey. Requiring a vibration survey for individual PMA parts, however, would be	FAA AC 33.83-1 Comparative Method to Show Equivalent Vibratory Stresses and High Cycle Fatigue Capability for Parts Manufacturer Approval of Turbine Engine and Auxiliary Power Unit Parts. The issuance of these ACs makes clear that the FAA has considered those PMA applications for	proposed language: <i>(1)“Advisory Circular AC33.83A provides guidance and an acceptable method to demonstrate compliance with the engine vibration survey requirements of § 33.83 in support of a Type Certificate application, or changes to Type Certificates.</i>	AC21.303-4 prescribes the methods for PMAs direct compliance with the regulation via test and computation. 2. We added to paragraph 2 the reference to AC33.83-1. We also added to paragraph 4.c. a statement that the guidance in AC33.83-1 does not change as a result of this policy. AC33.83-1 provides the purpose of the

Public - Document Review Comment Log

Title of Document: PS-ANE-33.83-01, Clarification for 14 CFR Part 33.83 Vibration Test						
Author:		Dorina Mihail, 781-238-7114				
Technical Writer/Editor:		Charles Smith, 781-238-7123				
Comments Disposition Date:		03/16/15				
Reviewing Office or Company						
Organization / Company address:		Modification and Repair Parts Association, 2233 Wisconsin Ave, NW Suite 803 Washington, DC 20007				
Comments Sent By:		Ryan Aggeraarn				
Phone w/area code:		(202) 628-8947				
#	Name of commenter	Page and Paragraph Number	Comment	Reason for Comment	Recommendation	Disposition/Response to Comment
			incorrect for two reasons.	which additional guidance is necessary to assist the applicant in compliance with the relevant regulations. Furthermore, the two ACs specifically addressing engine part and vibration issues are in addition to the primary PMA guidance found in AC 21.303-4 Application For Parts Manufacturer Approval Via Tests	<i>(2) Advisory Circular AC33.83-1 provides guidance and an acceptable method to show the vibratory stresses and HCF capability of PMA blades or vanes are equivalent to those of the type design parts. This guidance and method shows that the engine or APU still complies with the requirements of § 33.83 in support of a PMA application."</i>	guidance as recommended in this comment.

Public - Document Review Comment Log

Title of Document: PS-ANE-33.83-01, Clarification for 14 CFR Part 33.83 Vibration Test						
Author:		Dorina Mihail, 781-238-7114				
Technical Writer/Editor:		Charles Smith, 781-238-7123				
Comments Disposition Date:		03/16/15				
Reviewing Office or Company						
Organization / Company address:		Modification and Repair Parts Association, 2233 Wisconsin Ave, NW Suite 803 Washington, DC 20007				
Comments Sent By:		Ryan Aggeraandr				
Phone w/area code:		(202) 628-8947				
#	Name of commenter	Page and Paragraph Number	Comment	Reason for Comment	Recommendation	Disposition/Response to Comment
				and Computations or Identicality. An applicant complying with the regulations and the FAA Advisory Circulars supporting those regulations can be expected to satisfy the airworthiness requirements described therein.		