

Comment Disposition Report

Comments from:
Public

Document number: FAA Order 8110.121

Document title: Type Certificate Data Sheet (TCDS) Notes

Commenter	Page, Paragraph	Comment	Rationale	Recommendation	Disposition
Comments from: Boeing					
Comment Disposition Category: 3 - Non-Concur					
Boeing Terry L McVenes Comment Number: 1	Page Chapter Section 07 Par. 7.b Sub-Par. Table Fig. Appendix Paragraph 7(b)	In paragraph 7b, the proposed text states: “If the certificate management office confirms that the TCDS note(s) are in conflict with any regulation or guidance contained in this order, they will revise the TCDS. A plan to correct the conflict must be completed within 90 days from the date that the request for change was received.”	Our reasoning for this change is that the current proposed text does not account for the potential time needed to notify foreign regulatory authorities of changes to correct existing notes when issues are identified. Our suggested text change would appropriately address this issue.	We request that the following change be made to that text: “If the certificate management office confirms that the TCDS note(s) are in conflict with any regulation or guidance contained in this order, they will revise the TCDS. A plan to correct the conflict must be completed within 90 days from the date that the request for change was received and must include consideration for validation activity with foreign regulatory authorities.”	3 - Non-Concur The purpose of this order is to provide ACO engineers additional instructions on how to write proper TCDS notes. We try not to be too prescriptive in the process of preparing or revising a TCDS. “Consideration for validation activity with foreign regulatory authorities” and any other requirements applicable to different TCDS are the responsibility of the author of the TCDS when they are planning the creation or revision of the TCDS. Note that 90 days is the required time for having a plan, not the actual required time for revising the TCDS.

Commenter	Page, Paragraph	Comment	Rationale	Recommendation	Disposition
Comments from: GAMA					
Comment Disposition Category: 1 - Adopted					
GAMA Jonathan Archer Comment Number: 4	Page 8, 9 Chapter Section Par. Sub-Par. Table Fig. Appendix Section 5	Section 5, Supplemental Instructions to Order 8110.4C, (c) Standardization of Notes in TCDS for Engines, (1) states: "Due to the differences in certification data between aircraft and engines, Order 8110.4C allows the data and notes to be arranged differently for engines." Though not clearly stated, we interpret that to mean that if a TCDS is being revised to add an additional engine model, it will not be necessary to reorder/ restructure the TCDS similar to the example provided on pages 7 and 8. If there is an improperly written note or a regulatory conflict, the specific note will be revised but a reorder/ restructure of the TCDS will not be required. Is this an accurate interpretation?			1 - Adopted You are correct. ACOs only have to come up with a "plan" within 90 days to correct TCDS notes that conflict with regulations. ACOs should only apply format standardization to new TCDS or TCDS being revised after the effective date of the order (see paragraph 4, Compliance Date).
Comment Disposition Category: 2 - Partially adopted					
GAMA Jonathan Archer Comment Number: 1	Page 2 Chapter Section 05 Par. 5.b Sub-Par. Table Fig. Appendix	The language in many places doesn't flow very well. Examples are (there are many others): a. The first paragraph of the "Problem" statement. It isn't clear if the third and fourth sentences describe how things ought to be or how they might be			2 - Partially adopted a. Problem statement: This paragraph only states the problem with a few examples. How things ought to be or how they might be interpreted are described in detail, with examples, throughout the

Commenter	Page, Paragraph	Comment	Rationale	Recommendation	Disposition
	Paragraph 5.b	<p>misinterpreted.</p> <p>b. The last sentence in the last paragraph of the “Problem” statement is dangling.</p> <p>c. Supplemental Instructions, a(5): “Examine material carefully to avoid unclear meaning is clearly defined.” This sentence itself has unclear meaning.</p>			<p>rest of the document.</p> <p>b. The last sentence of the problem statement supports the sentence before it. You need to read the two sentences together.</p> <p>c. Agree with the comment. Revised the sentence to read: “Examine material carefully to ensure that the meaning is clearly defined.”</p>
<p>GAMA Jonathan Archer Comment Number: 5</p>	<p>Page 9 Chapter Section Par. Sub-Par. Table Fig. Appendix Section 5</p>	<p>Figure 1, Typical Notes Applicable to Engines - In reviewing the notes provided, we have questions regarding requirements specified:</p> <p>a. “Note 9. Engine mount system provisions” – If this information does not currently exist on the TCDS for multiple models and a new model is to be added, is the expectation that the data will be added for all models on the TCDS or only new models added?</p> <p>b. “Note 12. Manufacturer’s service bulletins or other instructions covering matters of special interest. Carefully use language to avoid promoting TC holder monopoly. Cite relevant regulation to support FAA approval of the service bulletin or instruction.” - If there are already manufacturers service</p>			<p>2 - Partially adopted</p> <p>a. Note 9: The answer is yes. Approved data in the TCDS are normally separated by specific models. If the older model did not have data, the engineer does not have anything to put in there.</p> <p>b. Note 12: The short answer is no. Explanation: The service document in the TCDS note is approved data. The applicable engine models listed in the document are approved. If the manufacturer introduces a new model and this new model is not in the approved data, it is not applicable (and therefore not approved). If the manufacturer wants its service document to be applicable to the new model, it needs to revise the service document and submit it to the ACO,</p>

Commenter	Page, Paragraph	Comment	Rationale	Recommendation	Disposition
		<p>documents on the TCDS and a new engine model is to be added, is the expectation that the regulatory cites will be added for all manufacturers service documents or only if a new service document is added? There are no examples of how these documents should be cited.</p> <p>C. “Note 15, Identify applicable installation, maintenance and overhaul manuals” – This does not address how revisions and/or updates will be addressed. Can this be a note to refer to latest revision of specific document numbers or a reference to a manufacturer’s service document containing the latest revisions of the specified manuals? Alternatively, will the TCDS have to be updated with each revision?</p>			<p>which will consider revising the related note in the TCDS.</p> <p>C. Note 15: A TCDS is an FAA-certified document. An ACO approves the document number as it appears in the TCDS, and the revision number is a part of the document identification. For example, when the FAA approves document number XXX revision 01, it does not mean document number XXX revision 02 will be automatically approved. To approve document number XXX revision 2, the FAA needs to review the document before approving and revising the TCDS accordingly. (Without revising the TCDS with the current revision identified, there is no proof that the FAA has reviewed the revised document.) That is the reason the statement “... or other methods approved or accepted by the FAA” should follow an approved document number. With this statement, the FAA can approve or accept the manual revisions without having to update the TCDS.</p>

Commenter	Page, Paragraph	Comment	Rationale	Recommendation	Disposition
Comment Disposition Category: 3 - Non-Concur					
GAMA Jonathan Archer Comment Number: 3	Page 2 Chapter Section Par. Sub-Par. Table Fig. Appendix Paragraph 5(d)	Section 5, Background, (d) Conformity to Type Design, third paragraph, contains the statement, “Therefore, new or newly revised TCDS notes must be identified as critical, recommended, acceptable, or reference data.” If this document clarifies that the entire TCDS is regulatory, why is it necessary to categorize these notes? If categories are determined to be required, this document does not contain the necessary definitions to make the determinations.			3 - Non-Concur 14 CFR 21.41 is the regulatory authority that governs TCDS notes. By this regulation, the TCDS is an FAA document listing certified (approved) data. Approved data could be of different types. “Critical, recommended, acceptable, or reference” are not “defined categories” in this order, as you commented. This order only instructs the engineer to clarify what the data is to avoid misunderstanding among readers. For example, the most common debate regarding TCDS notes is whether the data is mandatory or not. The answer is very subjective and difficult to resolve in a way that satisfies everybody. However, if the ACO engineer stated in the note that “this data is for reference only,” this would solve the problem.
GAMA Jonathan Archer Comment Number: 6	Page 10 Chapter Section Par. Sub-Par. Table Fig.	Section 7, Implementation, and other places where the effectivity of this order is defined may interfere with other activities of the OEM and/or ACO. For example, each time a TCDS is revised, foreign validations need to be updated. The			3 - Non-Concur The implementation for this order is already very ACO friendly: 1. ACOs only have to implement these instructions to new TCDS or TCDS undergoing revision. They don’t have

Commenter	Page, Paragraph	Comment	Rationale	Recommendation	Disposition
	Appendix Section 7	level of review and time to process these changes through foreign certification can depend significantly on the level of revision in the TCDS. Therefore, if there is no flexibility of implementation, the delays caused by a large TCDS revision could be costly to an organization. One solution is to include a clause that lets OEMs and their ACO managers work together to determine when to implement changes to comply with this order, based on the business needs, e.g., "Instructions in this order are applicable to new or revised TCDS, published on or after the effective date... unless a significant OEM business reason exists to postpone revision to these standards. In such cases, compliance with this order will be done at the next revision." Appendix B, paragraph 4 should be softened to reflect this.			to review all existing TCDS. 2. If there is a complaint about an error in a TCDS, the ACO has 30 days to respond to the complainer with its "plan" of actions (only a plan, no specific max time limit). 3. If the error in the TCDS does not conflict with regulations, the ACO can answer that the error will be corrected in the next revision (again, no specific time limit). 4. If the error conflicts with a regulation, meaning correction is necessary, the ACO engineer has 90 days to come up with a plan to correct the error. The order offers flexibility to the ACO engineer by allowing him full control of making his own plan and timing of when he will complete correcting the error in the TCDS.

Comment Disposition Category: 4 - Concur out of scope

GAMA Jonathan Archer Comment Number: 7	Page Chapter Section Par. Sub-Par. Table Fig. Appendix	Related to the above (OEM burden for timing of TCDS revision): Industry is concerned that the magnitude of documents being revised for compliance to the order may be significant and requests the FAA to consider when implementing this order across all FAA Regional			4 - Concur out of scope As the order states in the purpose paragraph, this order only provides additional guidance in writing the notes in the TCDS to avoid confusion, ambiguity, or conflict with regulations. There is no change in policy nor procedures that the ACOs
--	---	---	--	--	---

Commenter	Page, Paragraph	Comment	Rationale	Recommendation	Disposition
	General	<p>offices the potential impact on certification and validation activities, and the potential impact to industry and the potential delays incurred. Based on industry experience, it is our understanding that the administrative review conducted by the ACO prior to submission of the TCDS for publication is introducing potentially significant delays. We would recommend that once the order is implemented, it include a process to ensure that a timely review of the TCDS is performed and includes a consistency check with all other TCDS to ensure harmonization of content and accuracy.</p>			<p>have been employing to generate TCDS. The ACO engineer is writing the note anyway, with or without this order, while he is preparing the TCDS. With more detailed instructions and various examples of “Do” and “Don’t” provided, the engineer should be able to work more efficiently. Your comment relates to the process of preparing a TCDS, which is outside the scope of this order. We will consider your recommendation at the next revision of FAA Order 8110.4.</p>
<p>GAMA Jonathan Archer Comment Number: 2</p>	<p>Page Chapter Section Par. Sub-Par. Table Fig. Appendix General</p>	<p>Based on industry experience, it is our understanding that the administrative review conducted by the ACO prior to submission of the TCDS for publication is introducing potentially significant delays. We would recommend that once the order is implemented, it include a process to ensure that a timely review of the TCDS is performed and include a consistency check with all other TCDS to ensure harmonization of content and accuracy.</p>			<p>4 - Concur out of scope The Purpose paragraph of this order states: “This order only addresses the writing of the notes in a TCDS to avoid confusion, ambiguity, unclear or conflicting with regulations. It does not change any policy that order 8110.4C and other existing orders already established.” Your comment relates to the process of preparing a TCDS which is outside the scope of this order.</p>

Commenter	Page, Paragraph	Comment	Rationale	Recommendation	Disposition
Comments from: GE Aviation					
Comment Disposition Category: 1 - Adopted					
GE Aviation Jeffrey Conner Comment Number: 2	Page Chapter Section Par. Sub-Par. Table Fig. Appendix	The second sentence in this paragraph currently reads: "Compliance with this order is required for any new or TCDS being revised." The wording should be changed to: "Compliance with this order is required for any new TCDS or any TCDS being revised."	Improve readability of the sentence	Change the wording of this sentence to read as follows: "Compliance with this order is required for any new TCDS or any TCDS being revised."	1 - Adopted Revised the sentence to read as recommended.
4. Compliance					
GE Aviation Jeffrey Conner Comment Number: 1	Page 1 Chapter Section 01 Par. Sub-Par. Table Fig. Appendix	The second paragraph currently reads: "This order only addresses the writing of the notes in a TCDS to avoid confusion, ambiguity, unclear or conflicting with regulations. It does not change any policy that order 8110.4C and other existing orders already established." This wording of the first sentence of this paragraph is unclear.	The current wording "to avoid confusion, ambiguity, unclear or conflicting with regulations" is itself confusing. Additionally, swapping the order of the two sentences would improve overall clarity for the reader.	Change the order of sentences and the wording in this paragraph to read as follows: "This Order does not change any policy established by Order 8110.4C and other existing Orders. This Order addresses the writing of notes in a TCDS and provides guidance to ensure that such notes avoid confusion and ambiguity and do not conflict with regulations."	1 - Adopted Revised the paragraph to read as recommended.
1. Purpose paragraph					
Comment Disposition Category: 2 - Partially adopted					
GE Aviation Jeffrey Conner Comment Number: 6	Page A1 Chapter Section 01 Par. Sub-Par.	Multiple acronyms defined in appendix A are not used anywhere in the text of this document and therefore should be deleted from appendix A.	Definition of acronyms not used in the document add unneeded complexity to appendix A.	Remove appendix A references to the following acronyms: 14 CFR AIR-40 BASA	2 - Partially adopted Removed acronyms: AIR-40, BASA, DAH, DER, FCAA, IPA, MIO, ODA, PAH, and SOR.

Commenter	Page, Paragraph	Comment	Rationale	Recommendation	Disposition
	Table Fig. Appendix Appendix A - Acronyms			DAH DER FCAA IPA MIO ODA PAH SOR UBDP	

GE Aviation Jeffrey Conner Comment Number: 4	Page 2 Chapter Section 05 Par. 5.b Sub-Par. Table Fig. Appendix Paragraph 5.b	The last sentence in this section (“Such as a general reminder that is not specific to a specific type design.”) is a sentence fragment that should be connected with the prior sentence.	The last two sentences of this paragraph form a single thought.	Change the last two sentences of this paragraph to read as follows: “This document also clarifies that certain notes should not be included in a TCDS such as a general reminder that are not germane to the specific type design.”	2 - Partially adopted Combine the last two sentences to read: “It also clarifies that certain notes should not be included in a TCDS, such as a general reminder that is not specific to any particular product models included in the TCDS.”
--	---	---	---	---	--

Comment Disposition Category: 3 - Non-Concur					
GE Aviation Jeffrey Conner Comment Number: 3	Page Chapter Section 05 Par. 5.b Sub-Par. Table Fig. Appendix Paragraph 5.b	The last sentence in the first paragraph currently reads: “The notes are for holding reminders and information for convenience is a misrepresentation of their purpose.” It appears that a portion of the intended change to this sentence has been inadvertently left out.	The sentence as written conveys an incomplete thought.	Change the last sentence to read as follows: “TCDS notes are for holding reminders. Inclusion of information for convenience is a misinterpretation of their purpose.”	3 - Non-Concur The recommended writing implies that “the TCDS Notes are for holding reminders.” This is not the intent of the notes in a TCDS. The TCDS is an FAA document holding certified data pertaining to a particular product model. A TCDS is not a place for holding reminders.

Commenter	Page, Paragraph	Comment	Rationale	Recommendation	Disposition
Comment Disposition Category: 4 - Concur out of scope					
GE Aviation Jeffrey Conner Comment Number: 5	Page Chapter Section Par. Sub-Par. Table Fig. Appendix Figure 1. Typical Notes Applicable to Engines	This figure highlights notes applicable to all engines and states that Note 17 is to “Identify document(s) listing life limited part information.” Given the criticality of airworthiness limitations to the approved engine type design, Note 17 should also require the TC holder address - when appropriate - the link between airworthiness limitations associated with the approved type design and other parts that influence the parameters used to establish the airworthiness limitations. This type of reminder is fully consistent with the stated purpose of notes included in the TCDS.	In recent years the FAA has clearly highlighted that Airworthiness limitations developed by the engine type certificate holder can be impacted by other parts in the engine. Examples of recent FAA documents include: <ul style="list-style-type: none"> • In 2007 a new regulation (33.70) was added to part 33 dealing with engine life-limited parts. This regulation requires that the environmental influences and operating conditions for a life-limited part “including the effects of other engine parts influencing these parameters, are sufficiently well known and predictable so that the operating limitations can be established and maintained for each engine life-limited part.” • AC 33.70-1 issued on July 31, 2009, further amplifies the importance of influencing parts, stating: “Engine life-limited parts are part of a complex system in which other engine parts can affect the life-limited parts, including their life capability. Therefore, the engineering plan must consider these other parts and particularly any 	Modify the description for Note 17 to read as follows: “List the document(s) containing life-limited parts information. If applicable, include a statement that published airworthiness limitations have been developed based on engineering analysis that assumes this product will be operated and maintained using the procedures and inspections provided in the Instructions for Continued Airworthiness supplied with this product by the Type Certificate Holder. (Note: The added language is consistent with language in AC 33.70-1, section 11.)	4 - Concur out of scope The recommended language is a reminder of a general procedure related to ICA. This instruction should be in FAA Order 8110.54 (Instructions for Continued Airworthiness Responsibilities, Requirements, and Contents). The TCDS is an FAA document certifying data applicable to particular product models, not a place for holding reminders or establishing general procedure. We will pass your recommendation on to the office responsible for FAA Order 8110.54 for further consideration.

Commenter	Page, Paragraph	Comment	Rationale	Recommendation	Disposition
			<p>changes to them.”</p> <ul style="list-style-type: none"> • In a June 6, 2011, letter to AIA, the FAA ECO recognized the need for better guidance for industries that produce replacement and modification turbine engine parts and asked AIA to form an Advisory Group regarding engine system effects, stating that: “This request arises from our recent experience applying the procedures in our current policy and advisory circular guidance to validate reverse engineered designs, and finding they do not adequately account for engine system effects when the reverse engineered part does not fully duplicate the type certificate holder’s part.” The letter goes on to say that reverse engineering assessments using part-level comparative techniques “may fail to identify the influence the part has on critical engine parts and systems, and the influence the engine system may have on the part.” Consideration of the configuration of parts that influence life-limited parts is clearly required when determining if an engine continues to conform to its TC. 		

Commenter	Page, Paragraph	Comment	Rationale	Recommendation	Disposition
Comments from: Lycoming Engines					
Comment Disposition Category: 1 - Adopted					
Lycoming Engines Marian Folk Comment Number: 4	Page 8 Chapter Section Par. Sub-Par. Table Fig. 1 Appendix Paragraph 5.c, Engine standardization	Note 12. "Manufacturer's service bulletins or other instructions covering matters of special interest. Carefully use language to avoid promoting TC holder monopoly. Cite relevant regulation to support FAA approval of the service bulletin or instruction." - If there are already manufacturers service documents on the TCDS and a new engine model is to be added, is the expectation that the regulatory cites will be added for all manufacturers service documents or only if a new service document is added? There are no examples of how these documents should be cited.			1 - Adopted The FAA approves a service document when an ACO includes it in the TCDS. The document is applicable only to the models listed in the document. When the OEM introduces a new model, this model is not listed in the original document. Therefore, the document is not applicable to this new model. There are two solutions to this scenario: 1. While the ACO engineer revises the TCDS to include the new model, they can at the same time revise the service document to the later revision that has the new model included in the applicability of the document (if the OEM has the document revision available). 2. The ACO can approve the service document revision separated from the TCDS at a later time. In this case, the statement "... or any methods approved or accepted by the FAA" in the note, following the initial service document title (or number), would take care of the revision.

Commenter	Page, Paragraph	Comment	Rationale	Recommendation	Disposition
Lycoming Engines Marian Folk Comment Number: 3	Page 8 Chapter Section Par. Sub-Par. Table Fig. 1 Appendix Paragraph 5.c, Engine standardization	Note 9. "Engine mount system provisions" – If this information does not currently exist on the TCDS for multiple models and a new model is to be added, is the expectation that the data will be added for all models on the TCDS or only new models added?			1 - Adopted While the engineer is revising a TCDS, they should include data that was missing in the previous version of the TCDS. The answer is yes, the engineer should include the information related to the previous model in the revised TCDS if it is available.

Comment Disposition Category: 2 - Partially adopted

Lycoming Engines Marian Folk Comment Number: 2	Page 7 Chapter Section 05 Par. Sub-Par. Table Fig. Appendix Section 5	On page 7, section 5, Supplemental Instructions to Order 8110.4C, (c) Standardization of Notes in TCDS for Engines, (1) states: "Due to the differences in certification data between aircraft and engines, Order 8110.4C allows the data and notes to be arranged differently for engines." Though not clearly stated, we interpret that to mean that if a TCDS is being revised to add an additional engine model, it will not be necessary to reorder/ restructure the TCDS similar to the example provided on pages 7 and 8. If there is an improperly written note or a regulatory conflict the specific note will be revised but a reorder/ restructure of the TCDS will not be required. Is this an accurate interpretation?			2 - Partially adopted You are partially correct. The purpose of this order is to provide ACO engineers additional instructions regarding how to write a proper note in the TCDS. However, while we are working on the draft, Engine & Propeller Directorate requested us to add the standardized engine note section in the order to guide their engineers. It is convenient for engineers to present the TCDS notes in a standardized format when they write a new TCDS or revise an existing TCDS (for any other reasons). The order does not require ACOs to revise any existing TCDS just for standardization.
--	---	---	--	--	---

Commenter	Page, Paragraph	Comment	Rationale	Recommendation	Disposition
Comment Disposition Category: 3 - Non-Concur					
Lycoming Engines Marian Folk Comment Number: 1	Page 3 Chapter Section Par. Sub-Par. Table Fig. Appendix Sub paragraph 6.a(2)	On page 3, section 5, Background, (d) Conformity to Type Design, third paragraph, contains the statement “Therefore, new or newly revised TCDS notes must be identified as critical, recommended, acceptable, or reference data.” If this document clarifies that the entire TCDS is regulatory, why is it necessary to categorize these notes? If categories are determined to be required, this document does not contains the necessary definitions to make the determinations.			3 - Non-Concur 14 CFR 21.41 is the regulatory authority that governs TCDS notes. Under this regulation, the TCDS is an FAA document listing certified (approved) data. Approved data could be of different types. “Critical, recommended, acceptable, or reference” are not “defined categories” in this order. This order only instructs the engineer to clarify what the data is to avoid misunderstanding among readers. For example, the most common debate regarding TCDS notes is whether the data is mandatory or not. The answer is very subjective and difficult to resolve in a way that satisfies everybody. However, if the ACO engineer stated in the note that “this data is for reference only,” this would solve the problem.