

Field Comment Log

TSO-C10c "Pressure Altimeter System"

#	Commenter	Page Number	Paragraph Number	Referenced Text	Comment/Rationale or Question	Proposed Resolution	Comment Type (Conceptual, Editorial, or Format)	Disposition
1	Jeff Meyers, ANM-111	General	General	SAE 8009C, para 3.10	<p>This is typically accomplished by pilots adding the cold temperature correction (Table 9) to the minimum altitude published in operational procedures. Table 9 is accurate when the airport elevation is at sea level and compensating procedures at higher elevation airports (with Table 9) will result in over compensation. While the Table 9 method is acceptable for manually compensating procedural altitudes, it should not be used for automatic temperature corrections. RTCA DO-236C, Appendix H provides guidance for automatic temperature compensation that would typically be implemented in a Flight Management System (and not the altimetry system).</p> <p>Applicants intending to provide cold temperature corrections should use the accurate method (RTCA/DO-236C, H.2.4)</p>	<p>TSO-C10c should highlight that the correction values shown in Table 9 are only applicable for pilot use to compensate for the reduction in terrain clearance as a result of cold temperature.</p> <p>The TSO should also state that these cold temperature corrections must not be automatically applied to the altimeter.</p>	Conceptual	<p>Accepted. Added new appendix 1 to overwrite requirement. Changed to the following:</p> <p>Delete current section 3.10 and Table 9. Replace with the following: 3.10 Temperature Corrections Altimeters covered by this standard shall not incorporate automatic temperature corrections.</p>
2	John F. Hill, ANM-111	Page 1	3.b		<p>The failure classification should be deleted and if used should be determined by the aircraft level safety assessment.</p>	<p>3b. Leave out the specific failure classification in Section 3, and change to read:</p> <p>The actual failure condition classification will depend on the intended use in a specific aircraft and the associated safety assessment.</p>	Conceptual	Accepted.
3	Randy Avera, ACE-119A		Sections 1 and 3		<p>1. Sections 1 and 3 state the word "equipment" when referring to the pressure actuated sensitive type altimeter. The FAA has transitioned to use the word "article" for FAA certification of parts or components. The aircraft industry, airlines in particular, use the word "equipment" to describe an aircraft.</p>	<p>In TSO texts, use the term "article" in lieu of "equipment."</p>	Conceptual	Rejected. Current TSO boilerplate still uses "equipment" vice "article." Have forwarded comment to the owner of Order 8150.1() for their consideration.
4	Randy Avera, ACE-119A		Section 1. Purpose.		<p>The text in section 1 is not adequately specific to inform the reader that this TSO only applies to "mechanical type" pressure actuated sensitive type altimeter. The SAE AS 8009C-2016 document does state "mechanical type only" but the reader of the FAA TSO should be made aware of the design limitations of the TSO for the pressure actuated sensitive type altimeter.</p>	<p>Clarify the TSO text to reveal limitations of the article design for which the TSO applies.</p>	Conceptual	Accepted. Previously added new appendix 1 to document to overwrite requirements. Added clarifications to address mechanical-type altimeters and require deviation for substitution of solid-state components. Also added functional and environmental testing for electrical displays previously left out.
5	Randy Avera, ACE-119A		Section 1. Purpose.		<p>It could also be stated in section 1 that TSO C10c does not include RVSM requirements and does not include pressure lines (tubing).</p>	<p>Provides the reader with up-front guidance information that will streamline their TSO application process with the FAA.</p>	Conceptual	Rejected. This is very clearly addressed in both the scope and the rationale in the SAE document.

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6	Randy Avera, ACE-119A		Section 3B	<p>Failure Condition Classification, it states"</p> <p>(1) Failure of the function defined in paragraph 3 is a major failure condition.</p> <p>(2) Loss of the function defined in paragraph 3 is a major failure condition.</p> <p>(3) Design the system to at least these failure condition classifications</p>	<p>Provide text that clarifies to the reader what the FAA means when using the words "Failure" and "Loss." It is understood that both words are in relation to the failure and/or loss of the Function, but the Failure Condition words will leave the reader wondering what the FAA wants.</p> <p>The FAA does define "loss of function" and "malfunction" as to mean FAILURE. This definition should be clearly stated in Section 1 of the TSO.</p>		Conceptual	Accepted. Previously addressed.
7	Randy Avera, ACE-119A		Section 3	<p>More work needs to be done in the TSO to clarify "hazardously misleading" in relation to Failure Conditions. Question: Is Hazardously Misleading information acceptable to the FAA in regard to requirements for this TSO? Note: Hazardously Misleading Information or Data displayed to pilots, or as solutions to other articles which perform calculations for critical and non-critical elements and phases of flight, do not seem to be clearly defined and addressed by the TSO. The TSO should provide the reader alerts in this area of design and certification.</p>	<p>Provides the reader with up-front guidance information that will streamline their TSO application process with the FAA.</p>		Conceptual	Accepted. Previously addressed.
8	Randy Avera, ACE-119A		Section 3B	<p>The TSO states that the Failure Condition Severity is MAJOR. If that is the case, it should address the application for the article or equipment for VMC or IMC certified aircraft applications and/or installations. Question: Is the loss of failure of the pressure actuated sensitive type altimeter output "MAJOR" in an VMC-only aircraft?</p>			Conceptual	Accepted. Previously addressed.
9	Randy Avera, ACE-119A		Section 3B	<p>6. The TSO is not specific whether the "article" or "equipment" is strictly a mechanical pressure actuated sensitive type altimeter, and then clutters the mind with TSO sections discussing "software" and "complex electronic hardware" which is more complex than just a "mechanical" design. The references to RTCA DO-178, DO-160 and DO-254 standard requirements clearly take the reader away from a basic mechanical only type of design.</p>			Conceptual	Rejected. Current TSO boilerplate still uses "equipment" vice "article." Also, these sections are all boilerplate and necessary to address the possibility of software and complex AEH inclusion in the design, even if fundamentally mechanical.