

Additive Manufacturing Update

Presented to: International Aircraft Materials Fire
Test Forum

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Date: April, 2024



**Federal Aviation
Administration**

Additive Manufacturing (AM) Report

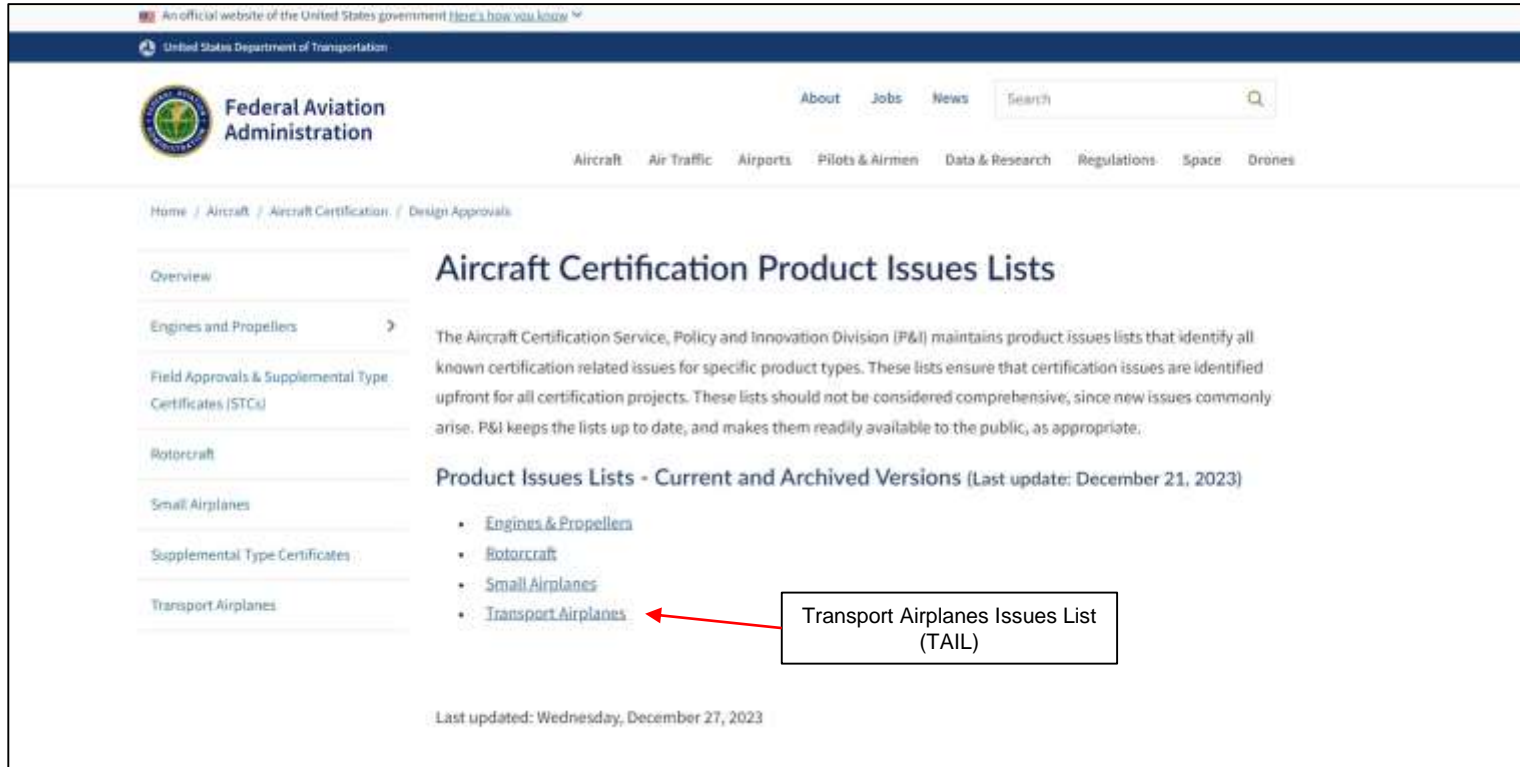
- FAA report “DOT/FAA/TCTN-23/65” published in December, 2023
- Provides all vertical Bunsen burner testing conducted by FAA on flammability of AM produced parts



Issue Paper Update


- Aircraft Certification Product Issue List
 - Available to public
 - AM added for flammability of interior materials
 - Link:
https://www.faa.gov/aircraft/air_cert/design_approvals/product_issues_lists
- Template issue paper draft added to the FAA-internal version

Aircraft Certification Product Issue List



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Aircraft Certification Product Issues Lists

The Aircraft Certification Service, Policy and Innovation Division (P&I) maintains product issues lists that identify all known certification related issues for specific product types. These lists ensure that certification issues are identified upfront for all certification projects. These lists should not be considered comprehensive, since new issues commonly arise. P&I keeps the lists up to date, and makes them readily available to the public, as appropriate.

Product Issues Lists - Current and Archived Versions (Last update: December 21, 2023)

- [Engines & Propellers](#)
- [Rotorcraft](#)
- [Small Airplanes](#)
- [Transport Airplanes](#)

Last updated: Wednesday, December 27, 2023

Transport Airplanes Issues List (TAIL)

Aircraft Certification Product Issue List

Product Type	Issue ID#	Category	Subject	Description	
177	Transport	T-2003	Extended Operations (ETOPS)	Early Extended Operations (ETOPS) Method	Engine-Aircraft Interface Item. One or more issue papers may be needed to document means of compliance for airplanes with more than two engines), including, but not limited to: <ul style="list-style-type: none"> - Relevant Experience Assessment for Early ETOPS - Validation of Maintenance Procedures for ETOPS Significant Systems - Propulsion System Validation Test for Early ETOPS - New Technology Testing for Early ETOPS - Auxiliary Power Unit Validation Test for Early ETOPS - Early ETOPS Problem Tracking and Resolution System - Early ETOPS Acceptance Criteria, Design Maturity and Reliability Methods - Airplane Demonstration Flight Test for Early ETOPS
178	Transport	T-2004	Extended Operations (ETOPS)	Combined Service Experience and Early Extended Operations (ETOPS) Method (i.e., Combined Method)	Engine-Aircraft Interface Item. One or more issue papers may be needed to document means of compliance (section K25.2.3 for two-engine airplanes or section K25.3.3 for airplanes with more than two engines), including, but not limited to: <ul style="list-style-type: none"> - Relevant Experience Assessment for Early ETOPS - Validation of Maintenance Procedures for ETOPS Significant Systems - Propulsion System Validation Test for Early ETOPS - New Technology Testing for Early ETOPS - Auxiliary Power Unit Validation Test for Early ETOPS - Early ETOPS Problem Tracking and Resolution System - Early ETOPS Acceptance Criteria, Design Maturity and Reliability Methods - Airplane Flight Test for ETOPS - Service Experience for Combined Service Experience and Early ETOPS Method (see Note) - Extending ETOPS Capability Using the Combined Service Experience and Early ETOPS Method (see Note) Note - These two issues may be combined into a single issue paper, if applicable.
179	Transport	T-2005	Human Factors Systems and Equipment	Flightcrew Human Factors Assumptions in Aircraft and System Safety Assessments	You may need an issue paper to establish a method of compliance with §25.1309. This issue paper defines human factors assumptions. The focus is human factors assumptions associated with flightcrew recognition Code of Federal Regulations (14 CFR) 25.1309, Equipment, systems, and installations. This issue paper is where these assessments include flightcrew human factors assumptions
180	Transport	T-2006	Cabin Safety	Use of the Microscale Combustion Calorimeter to Substantiate Small Changes to Material Composition	You may need an issue paper to establish a method of compliance for using a microscale combustion calorimeter. This method will continue to meet the flammability requirements of § 25.853. This method is an alternative to repeating tests.
181	Transport	T-2007	Cabin Safety	Additive Manufacturing - Flammability of Parts	Additive Manufacturing (also known as 3D printing) may allow for variability in the production process that may affect the flammability of parts. Coordinate with the Policy & Standards Division, Cabin Safety Section (AIR-624) to determine if a method of compliance is needed. Although compliance with the flammability requirements is required, coordination with AIR-624 is required. Note that this Product Issues List also contains a separate item for Additive Manufacturing Design & Construction.

Current Issue ID for AM relating to flammability - added for rotorcraft and small airplanes as well

AM Issue Paper Draft

- Currently, the full issue paper draft is not publically available
- However, an applicant may be able to gain access to it during certification discussions with the FAA if AM is relevant

Questions?

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