



EUROPEAN AVIATION SAFETY AGENCY
AGENCE EUROPÉENNE DE LA SÉCURITÉ AÉRIENNE
EUROPÄISCHE AGENTUR FÜR FLUGSICHERHEIT

Certification Memo - Fire

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Powerplant Installation & Fuel Systems
Certification Directorate
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Certification Memo - Fire

- Project of Fire Certification Memo
 - Objective capture generic and recurring Fire issues

- ▶ Representativity of Fire in Engine/APU/Combustor designated Fire Zone
 - » Issue of consideration of a « single burner » as representative of an Engine/APU Designated Fire Zone fire
- ▶ Fire Resistance / Fire proofness
 - » All CS
 - » Inappropriate use of material definition to justify a load withstanding capability function under fire (Titanium, Aluminium)

► Fire Demonstration By Test

› All CS

- › Issue of gas burner severity versus fuel burner use
- › Vibration inconsistently applied

› CS23, CS27, CS29

- › ISO2685 not quoted

► 2D Nacelle Interpretation

› CS 25-867

- › Inconsistent and recurrent misinterpretation of rule intend;
- › Inconsistent geometry definition understanding: where start the front of the nacelle, what diameter to consider, where ends the rear of the nacelle;
- › Fire resistance equivalency to aluminium: how to show compliance
- › Inconsistent surfaces to be considered.

- Protection of adjacent zone to engine/APU/Combustor Designated Fire Zone
 - CS 23.1182
 - Issue of maximum latent presence of fire hypothesis
 - Need to precise intend of requirement vs 23.1351(e)
 - CS 25.1182
 - definition of « pod » to be introduced to clarify applicability
 - Zones immediately behind firewall vs zone behind firewall applicability
 - Notion of heat resistant proposed by some applicant that does not exist.

- ▶ Protection of adjacent zone to engine/APU/Combusted Designated Fire Zone
 - CS 27.861/CS 29.861
 - inconsistent risk exposure time consideration. Trade off between material capability over 15min and function over 5min,
- ▶ Flammable Fluid Fire Protection
 - CS23.863/25.863/27.863/29.863
 - Clarification of minimization intent
 - Clarification of applicability: fluid categories, zones
 - Clarification of objective in Engine/APU/Combustor designated fire zones.
 - Clarification of intend vs 23.1309/25.1309/27.1309/29.1309
 - Mitigation means efficiency demonstration

- ▶ Engine/APU/Combustor Burnthrough
 - » CS 25.903
 - » Detailed compliance demonstration for risk identification and mitigation
 - » CS 23.903
- ▶ Fire Detection
 - » CS 27.1195
 - » Need to clarify « readily observed in flight by the pilot in the cockpit ».
 - » CS 23.1195
 - » Need to clarify « readily visible from the cockpit ».

- ▶ Ventilation and Drainage of flammable fluid zones, including DFZ
 - ▶ CS 23.1187 / CS 25.1187 / CS 27.1187 / CS 29.1187
 - ▶ CS 23.863 / CS 25.863 / CS 27.863 / CS 29.863
 - ▶ CS 23.967 / CS 25.967 / CS 27.967 / CS 29.967
 - ▶ Detailed compliance demonstration for ventilation
 - ▶ Detailed compliance demonstration for drainage



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