

M25.1 of this appendix with any airplane or engine configuration affecting the performance of the FRM for which approval is sought.

M25.3 Reliability indications and maintenance access.

(a) Reliability indications must be provided to identify failures of the FRM that would otherwise be latent and whose identification is necessary to ensure the fuel tank with an FRM meets the fleet average flammability exposure requirements listed in paragraph M25.1 of this appendix, including when the FRM is inoperative.

(b) Sufficient accessibility to FRM reliability indications must be provided for maintenance personnel or the flightcrew.

(c) The access doors and panels to the fuel tanks with FRMs (including any tanks that communicate with a tank via a vent system), and to any other confined spaces or enclosed areas that could contain hazardous atmosphere under normal conditions or failure conditions, must be permanently stenciled, marked, or placarded to warn maintenance personnel of the possible presence of a potentially hazardous atmosphere.

M25.4 Airworthiness limitations and procedures.

(a) If FRM is used to comply with paragraph M25.1 of this appendix, Airworthiness Limitations must be identified for all maintenance or inspection tasks required to identify failures of components within the FRM that are needed to meet paragraph M25.1 of this appendix.

(b) Maintenance procedures must be developed to identify any hazards to be considered during maintenance of the FRM. These procedures must be included in the instructions for continued airworthiness (ICA).

M25.5 Reliability reporting.

The effects of airplane component failures on FRM reliability must be assessed on an on-going basis. The applicant/holder must do the following:

(a) Demonstrate effective means to ensure collection of FRM reliability data. The means must provide data affecting FRM reliability, such as component failures.

(b) Unless alternative reporting procedures are approved by the responsible Aircraft Certification Service office, as defined in part 26 of this subchapter, provide a report to the FAA every six months for the first five years after service introduction. After that period, continued reporting every six months may be replaced with other reliability tracking methods found acceptable to the FAA or eliminated if it is established that the reliability of the FRM meets, and will continue to meet, the exposure requirements of paragraph M25.1 of this appendix.

(c) Develop service instructions or revise the applicable airplane manual, according to a schedule approved by the responsible Aircraft Certification Service office, as defined

in part 26 of this subchapter, to correct any failures of the FRM that occur in service that could increase any fuel tank's Fleet Average Flammability Exposure to more than that required by paragraph M25.1 of this appendix.

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APPENDIX N TO PART 25—FUEL TANK FLAMMABILITY EXPOSURE AND RELIABILITY ANALYSIS

N25.1 General.

(a) This appendix specifies the requirements for conducting fuel tank fleet average flammability exposure analyses required to meet §25.981(b) and Appendix M of this part. For fuel tanks installed in aluminum wings, a qualitative assessment is sufficient if it substantiates that the tank is a conventional unheated wing tank.

(b) This appendix defines parameters affecting fuel tank flammability that must be used in performing the analysis. These include parameters that affect all airplanes within the fleet, such as a statistical distribution of ambient temperature, fuel flash point, flight lengths, and airplane descent rate. Demonstration of compliance also requires application of factors specific to the airplane model being evaluated. Factors that need to be included are maximum range, cruise mach number, typical altitude where the airplane begins initial cruise phase of flight, fuel temperature during both ground and flight times, and the performance of a flammability reduction means (FRM) if installed.

(c) The following definitions, input variables, and data tables must be used in the program to determine fleet average flammability exposure for a specific airplane model.

N25.2 Definitions.

(a) *Bulk Average Fuel Temperature* means the average fuel temperature within the fuel tank or different sections of the tank if the tank is subdivided by baffles or compartments.

(b) *Flammability Exposure Evaluation Time (FEET)*. The time from the start of preparing the airplane for flight, through the flight and landing, until all payload is unloaded, and all passengers and crew have disembarked. In the Monte Carlo program, the flight time is randomly selected from the Flight Length Distribution (Table 2), the pre-flight times are provided as a function of the flight time, and the post-flight time is a constant 30 minutes.

(c) *Flammable*. With respect to a fluid or gas, flammable means susceptible to igniting readily or to exploding (14 CFR Part 1, Definitions). A non-flammable ullage is one where the fuel-air vapor is too lean or too