



Fuel tank Safety: Update on EASA activities

Presentation by:

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The Flammability reduction means study

- **Study was contracted to RCW Cherry and associates**
- **Purpose was to evaluate the fatal accident risk of fuel tank explosions to the western world aircraft fleet type certificated after 1st January 1958 for more than 30 passengers or more than 7500 lbs cargo**
- **Study started in March 2007 and was closed in October 2007**



The Flammability reduction means study

➤ Table of contents (I):

- ★ **Introduction**
- ★ **Objectives**
- ★ **Scope**
- ★ **Assumptions**
- ★ **Abbreviations**



The Flammability reduction means study

➤ Table of contents (II):

- ★ **Model development: 3 sub-models (Ignition, Flammability, accident)**
- ★ **Assessment of aircraft landings and hours**
- ★ **Aircraft selected for the study**
- ★ **In service accident and incident experience**



The Flammability reduction means study

➤ Table of contents (III):

- ★ Ignition causes: 16 in all
- ★ Airworthiness directives
- ★ Summary of aircraft generic data used in the study
- ★ Possible drawbacks to a NEA inerting system
- ★ Results, discussions and conclusions
- ★ Summary of conclusions
- ★ References



The Flammability reduction means study

- Report was given to the rulemaking group on RIA
- It was also passed to FAA and TCCA
- Final report available but not made public yet
 - ★ Will be made public with the conclusions of the group.



Task 25.056 (a)

- **Group to review based on the study and other information the Regulatory Impact Assessment done in 2004**
- **First Meeting: 12 / 2007**
- **Final meeting: June 2008**
- **1 intermediate meeting and three teleconferences in between**



Task 25.056 (a)

➤ Status:

- ★ **Final report in draft conditions.**
- ★ **The report is currently being completed with a comparison of FAA Final Regulatory Evaluation and the assumptions made for the EASA RIA update.**
- ★ **The report will be presented to EASA management in September**
- ★ **The EASA position will be made public in October**



Task 25.056 (a)

➤ Status: Review of the study: draft conclusion

- ★ The Study has helped to evaluate the effect of retrofit and of ignition measures.
- ★ The group has reservations about the methodology used into the study to evaluate the effect of retrofit of FRS but accepts that the predicted number of accidents avoided by retrofit is not inconsistent with other numbers coming from other work.
- ★ The group recognises that no prediction methodology can be 100 % accurate.



Task 25.056 (a)

➤ Revised impact assessment

- ★ No major technical development or in service event since the 2004 RIA
- ★ Economical environment has changed (price of fuel)
- ★ Data received from Boeing and Airbus
- ★ Refined model to use the data has been implemented, taking into account each affected model fleet.
- ★ Worldwide basis, 10.394 airframes could be retrofitted, to avoid between 1 and 3 accidents.



Task 25.056 (b)

- **Agency task to modify CS-25**
 - ★ **This is not a retrofit rule, this material thus applicable to new design only.**
- **NPA 2008-19 published on 22 July, comment period ends on 18 October.**



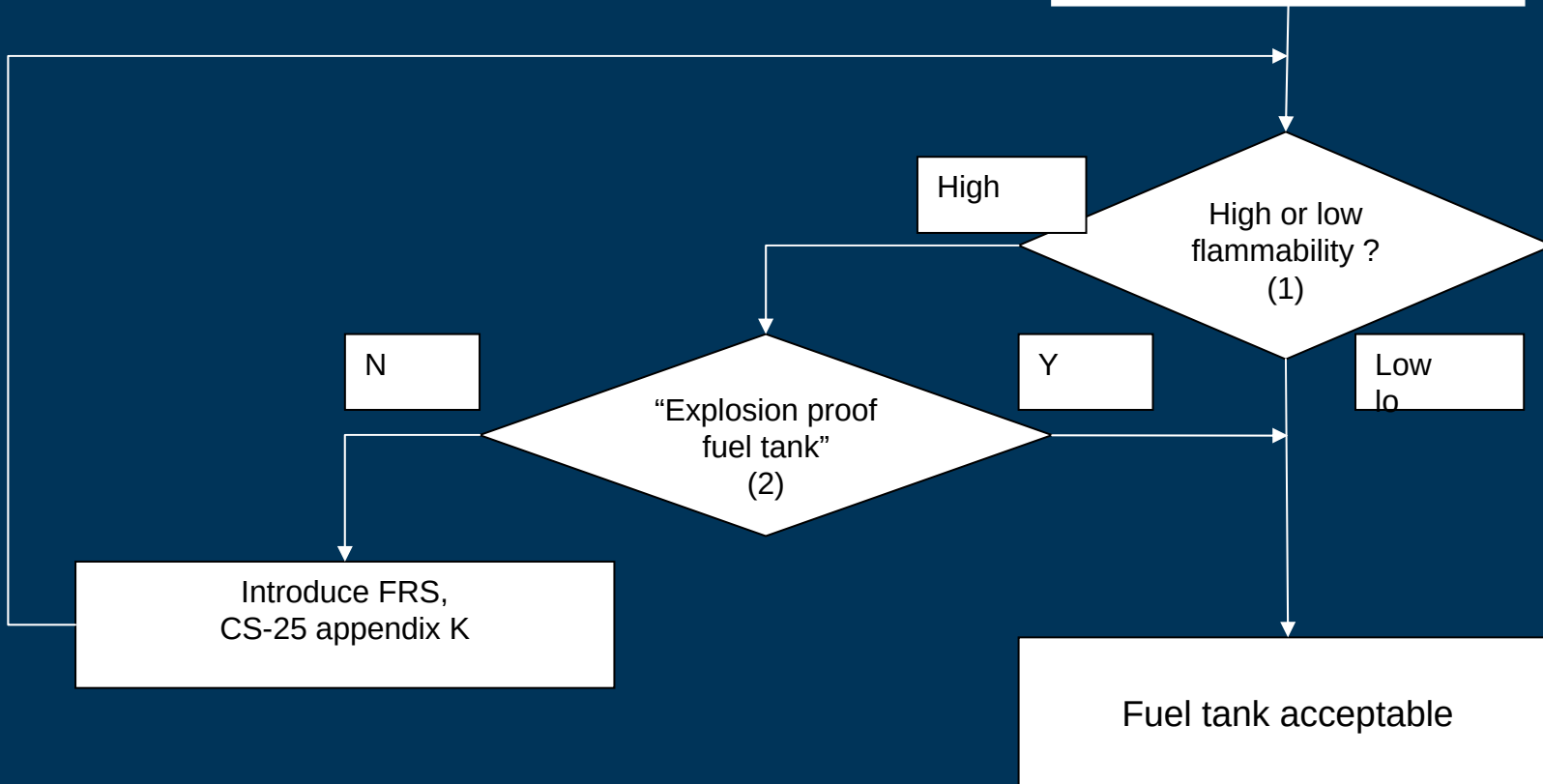
Task 25.056 (b)

- **The FRM certification criteria are based upon the harmonised SC and thus should be identical to FAA.**
- **The general organisation of the rule is similar to the FAA NPRM with 2 appendices.**
- **The criteria deciding whether a FRM shall be introduced a slightly different. EASA harmonised with FAA on 3%. EASA does not introduce a specific limit for fuel tanks located within the fuselage contour (FAA mandates FRM through a 3% hot day limit).**
- **Another difference is EASA limitation on heat input within the fuel system. If FRM is not fitted (or is inoperative) the associated AMC introduces a 20°C limit, together with some basic conditions.**



Ignition sources are extremely improbable and do not result from a single failure

Minimise temperature and energy inputs *





Production cut-in

- **EASA agreed with FAA that it would introduce a production cut-in.**
- **Investigating how to implement it now pending general framework developed by task 21.039 (Operational Suitability Certificate)**



In-service aircraft

- **Reminder: to complete the ignition prevention exercise, high flammability exposure tanks are subject to more stringent safety assessment.**
- **If FRM is not retrofited, combination of failures should be addressed.**



FAR 26 assessment

- **EASA will support the affected DAH and FAA.**
- **The requested data should be submitted to EASA central, copy to the EASA certification team (and FAA, as requested).**
- **Early communication is necessary to solve potential issues (such as flight test or MoC).**



Training for maintenance

- **Published AMC on trainings for maintenance engineers:**
 - ✦ **Concerns were expressed by Industry and Authorities**
 - ✦ **Letters sent to Authorities**
 - ✦ **Comment period for NPA 2008-16 for revised AMC ended on July 11**
 - ➔ **Comment Response Document should be available mid-October**



End of presentation

- **THANK YOU FOR YOUR ATTENTION.**
- **YOUR QUESTIONS ARE WELCOME**
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