EASA Further Requirements Related to - Ageing Aircraft, Class D Cargo Compartments & Runway Excursions

Review of Commission Implementing Regulation - 2020/1159 of 5 August 2020 amending Regulations (EU) No 1321/2014 and (EU) No 2015/640 as regards the introduction of new additional airworthiness requirements.

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Introduction

An aircraft, the design of which has already been certified, is not required to comply with an updated version of CS when it is produced or while in service.

Therefore compliance of such aircraft with additional airworthiness requirements that were not included in the initial CS at the time of certification of design should be introduced.

- Commission Regulation (EU) 2015/640 sets out such additional airworthiness requirements.
- Acceptable Means of Compliance (AMC) 20-20 which provide technical guidance for developing a continuing structural integrity programme aiming at ensuring safe operation of ageing aircraft throughout their operational life.

Note Due to the non-binding nature of the AMC, the application of that guidance may not be consistent throughout the Union. In consequence, there may be currently large aircraft in operation which were:

- Designed,
- Modified or
- Repaired

Without effectively addressing damage tolerance evaluations, widespread fatigue damage and corrosion prevention. With the objective of preventing catastrophic failures due to fatigue, including widespread fatigue and corrosion, additional airworthiness requirements on ageing aircraft should be introduced in Regulation (EU) 2015/640.

Ageing Aircraft Criteria

- Any aircraft could be considered to be ageing from the moment of its manufacture.
- The ageing of an aircraft depends on such factors as age, the number of flight cycles and the number of flight hours. Individual aircraft components age differently and some of the ageing factors are fatigue through repetitive cycles, wear, deterioration and corrosion.
- Those factors could cause significant safety concern if they are not properly managed throughout the life of the aircraft.

- Service experience has shown that there is a need to continually update knowledge about the structural integrity of ageing aircraft.
- Therefore, new requirements to keep up to date knowledge about ageing factors on the basis of real-time operational experience and with the use of modern tools of analysis and testing should be introduced in Regulation (EU) 2015/640.
- Those requirements on ageing aircraft should ensure:
    - That design approval holders produce the data and follow procedures, instructions and manuals necessary to prevent ageing structure failures due to corrosion and fatigue and make them available to operators.
    - In order to achieve this, design approval holders should be required to develop a comprehensive continuing structural integrity programme for the aircraft type and to evaluate existing changes and repair designs for damage tolerance.
    - At the same time, operators should be required to incorporate into their maintenance programme those data whilst addressing the adverse effects of changes and repairs on each airframe and its associated maintenance requirements.

- In order to ensure that those data, procedures, instructions and manuals produced on the basis of those new requirements are also used when maintaining large aeroplanes, Ref to be included in M.A.

Class D Cargo Compartments - Forthcoming Requirement for Cargo Fire Extinguishers

Several hundred large aeroplanes fitted with Class D cargo or baggage compartments are currently registered in Member States.

Authors Note – Class D Cargo Compartments rely on Air Flow Suppression to fight the fire (Close of Air Supply) and have no Fire Extinguishers available.

Refer also to Comment-Response Document 2019-02

Note - The risk of uncontrollable fires in this type of compartment is considered high, in particular considering that the carriage of lithium batteries in cargo or baggage compartments has increased over recent years, together with the identified risk of thermal runaways and the subsequent fires related to those batteries.

New design standards eliminating Class D cargo and baggage from the certification specifications for large aeroplanes apply to large aeroplanes certified on the basis of requests made after September 2007.

Considering that certain large aeroplanes might not comply with those standards and having due regard to the nature and risk of operations with large aeroplanes, those standards should now apply to all in service large aeroplanes certified by the Agency.

Concerning Runway Excursions

EASA Annual Safety Review 2018 identifies runway excursions as one of the two highest key risk areas.

- Runway excursions accounted for 30 % of the non-fatal accidents

In January 2020 the Agency has introduced new design standards for the installation of systems supporting flight crews in their decision-making during approach and landing.

- Those standards are aimed at mitigating the risk of runway excursions during landing. Having due regard to the nature and risk of operations with large aeroplanes those new standards should apply now to all in service large aeroplanes certified by the Agency.

Next Steps

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