



European Aviation Safety Agency

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EASA D (2008) CEXP/PME/84328

Subject: Ageing Aircraft - **ENHANCED AIRWORTHINESS PROGRAMME FOR AEROPLANE SYSTEMS - EAPAS** - EU Rules Implementation

Dear /

You are aware that safety concerns about wiring systems in aeroplanes were brought to the forefront of public attention by a midair explosion in 1996 involving a 747 airplane. Ignition of flammable vapours in the fuel tank was the probable cause of that fatal accident, and the most likely source was a wiring failure that allowed a spark to enter the fuel tank. Two years later, an MD-11 aeroplane crashed into the Atlantic Ocean, although an exact cause could not be determined, the presence of re-solidified copper on a portion of a wire of the in-flight entertainment system cable indicated that wire arcing had occurred in the area where the fire most likely originated.

Investigations of those accidents and later examinations of other aeroplanes showed a collection of common problems. Deteriorated wiring, corrosion, improper wire installation and repairs, and contamination of wire bundles with metal shavings, dust, and fluids (which would provide fuel for fire) were common conditions in representative examples of the "ageing fleet of large aeroplanes."

EASA has developed in cooperation with FAA a regulatory package to enhance the safety of **large aeroplanes** wiring systems. This includes new and revised certification and maintenance requirements to address the shortcomings of current wiring systems design, installation and maintenance practices.

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Those have been introduced for EASA through NPA 2007-01 and notably CS-25 "Certification Specifications for Large Aeroplanes", amendment 5 with a new Subpart H – Electrical Wiring Interconnection Systems (EWIS). This amendment has been published as part of the relevant Executive Director (ED) Decision No. 2008/006/R on the 29th August 2008.

The Decision enters into force on **September 5th, 2008**.

EASA has also concluded that current maintenance practices do not adequately address wiring components, wiring inspection criteria are too general, and maintenance instructions do not describe unacceptable conditions, such as improper repairs and installations in enough detail.

Thus, after a coordinated activity with FAA, new requirements for Instructions for Continued Airworthiness affecting maintenance, inspection for EWIS, have been respectively introduced in FAR 25 and CS-25.

The intent of this letter is to bring attention of applicants for STC, on the following:

As indicated in NPA 2007-01 and CS-25 Amendment 5 Explanatory Note, the Agency will require type certificate (TC) holders of certain existing large aeroplane types to develop new instructions for continued airworthiness (ICA) in accordance with the AMC to Appendix H25.5 paragraphs 1 and 6.

The same will apply to applicants for supplemental type certificates (STC) of those affected aeroplane types as identified in the requirements detailed below.

The affected aeroplane types are large aeroplanes with a type certificate issued after 1st January 1958, that, as a result of original type certification or later increase in capacity, have-

- a. a maximum type-certificated passenger capacity of 30 or more; or
- b. a maximum payload capacity of 3402 kg (7500 pounds) or more.

This has been mandated in the USA through a new Part 26. As no comparable tool exists in the EU system, the requirements are mandated through the use of the provisions of 21A.103(a)(2)(iii) for applicants for STC.

Requirements

The following is applicable to any supplemental type certificate (STC) application made after 1st January 2009.

Each applicant for an STC of an affected aeroplane type must conduct analyses and, when required, develop and submit for approval by the Agency, EWIS ICA derived from the ENHANCED ZONAL ANALYSIS PROCEDURE (EZAP) in accordance with CS-25 Appendix H paragraph H25.5 and AMC to Appendix H25.5 paragraphs 1 and 6.

The compliance plan for the STC must address whether the design change for which approval is sought does necessitate a revision of the EWIS ICA previously developed for that particular aeroplane model.

EASA AMC 20-21 (Programme to enhance aeroplane EWIS maintenance) and FAA AC 25-27 (Development of transport category airplanes EWIS ICA using an EZAP) provide additional guidance on whether the design change necessitates a revision of the EWIS ICA.

The applicant for the STC is responsible for making that determination and providing necessary justification.

In case no revision is necessary for the EWIS ICA, this shall be substantiated as part of the certification package for the approval of the STC.

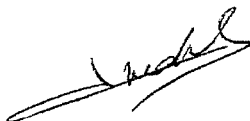
In case a revision to the EWIS ICA is necessary, the applicant for the STC of the affected aeroplane types identified above must submit final EWIS ICA to the Agency by 7 June 2010 or the date of issuance of the certificate whichever occurs later.

It is reminded that the EWIS ICA for the TC holder of the affected aeroplane type will have furnished the final package by 10 December 2009.

After 7 June 2010, EWIS ICA for STC shall be furnished as part of the package for approval of that STC.

We look forward working with you on this matter. It is expected that further communication takes place through the Project Certification Manager responsible for your STC as part of the approval of that STC. As we have established a coordination team within EASA to monitor and streamline this activity, we ask you to also copy any correspondence to Ms Carla Iorio (carla.iorio@easa.europa.eu) who will ensure necessary internal EASA coordination.

Best regards,



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Yves Morier

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