


EASA	COMMENT RESPONSE DOCUMENT
	EASA PAD No. 12-129 [Published on 09 October 2012 and officially closed for comments on 06 November 2012]

Commenter 1: Ken Dickenson [representing several engineers] – 29/10/2012

Comment # 1

This AD aims at preventing fuel tank explosion and consequent loss of the aeroplane.

1. DISCUSSION INTRODUCTION

According to the PAD, Fokker Services conducted some activities to show compliance with the FAA Special Federal Aviation Regulation (SFAR) 88 and the Joint Aviation Authorities (JAA) Interim Policy INT/POL/25/12. An analysis of the impacts on the type design revealed apparently the need to:

- Install a fuse in the LCPV wiring,
- Install fuses in the power supply wiring and/or return wiring for the main tank overflow valve reed-switches, the LCPV solenoid, the Re/De-fuel shut-off valve solenoid and the collector-tank Low Level float switch, and
- Require that the wiring fuses remain installed on modified aeroplanes.

The way chosen to publish these mandatory instructions and corresponding airworthiness limitations is a concern: It contributes to the dissemination of mandatory instructions and related airworthiness limitations within different documentations. This lack of consolidation has proven to be misleading (some airworthiness limitations exceeded) and this hazard may unleash its damaging potential (serious events or accidents).

The FAA stressed the impact of using ambiguous terms and the importance for providing clarity and accuracy (see Note 1 below). We have tried to pay particular attention to the terms used in this discussion: For example, “approved” does not mean “mandatory”, and “safety task” does not necessarily imply “mandatory compliance”.

Finally, our comments and recommendations take also into account experience gained on human factors.

Note 1: Refer to the Advisory Circular (AC) 20-176 “Design Approval Holder Best Practices for Service Bulletins Related to Airworthiness Directives”. Refer also to EASA CM-21A-J-001 issue 01.

2. REGULATIONS REVIEW

To understand the concerns within the frame of this PAD, some background information has to be presented on the SFAR 88 and the INT/POL/25-12:

As stated in the final rule, the FAA has determined that the fuel tank system warrants mandatory minimum maintenance criteria to prevent catastrophic failure. By placing these maintenance instructions in the ALS of the ICA, the design approval holder provides consistent mandatory baseline maintenance standards for the fleet. The same requirement can be found in the FAR 26 subpart D.

On the EASA side, the paragraph 6 of the INT/POL/25-12 states:

“The safety analysis conducted to comply with INT/POL/25/12 and this EASA letter may result in the need to define certain required inspection or maintenance items as well as changes to procedures and design changes. Any item that is required to prevent an unsafe condition by ensuring that an ignition source does not develop within the fuel tank or maintain protective features incorporated to preclude a catastrophic fuel tank ignition event must be incorporated in the limitation section of the instructions for continued airworthiness.

Information necessary to maintain those design features that have been defined in the original type design to preclude ignition sources should be included in the critical design configuration control limitations [...]. This information is essential to ensure that maintenance, repairs or modifications do not unintentionally violate the integrity of the original fuel system type design. The original design approval holder must define a method of ensuring that this essential information will be evident to those that may perform and approve such repairs and modifications. [...].”

The paragraph 7 of the same INT/POL/25-12 gives the following definition:

“Critical Design Configuration Control Limitations (CDCCL): As applied to Fuel Tank safety policy, this term refers to a feature of the fuel system design the integrity of which must be maintained to ensure that unsafe conditions do not develop. Features in an aircraft installation or component that must be retained during modification, change, repair, or scheduled maintenance characterize CDCCL. These features may exist in the fuel system and its related installation or in systems that could, if a failure condition were to develop, interact with the fuel system in such a way that an unsafe condition would develop in the fuel system.”

3. PRESENT CASE

The regulation materials referred into the previous paragraph clearly participate in gathering all mandatory instructions and airworthiness limitations in the ALS.

This raises the question why the requirements of this PAD have not been included in the Fokker 28 ALS to comply with the requirements of the subject regulation materials. Would there have been a special treatment for the Fokker 28 aeroplanes back in July 2006, i.e. the deadline to show compliance (see Note 2 below)? One could then reasonably ask why there are such disparities between TC holders under the same jurisdiction.

Note 2: Refer to the EASA letter dated 08th March 2006 and referenced EASA D(2006)CPRO/LAP/PME/50761.

CHANGE TO THE TYPE DESIGN

The introduction into the ALS of the requirement to modify the affected aeroplanes in accordance with the Fokker Services Service Bulletin (SB) SBF100-28-042 and SBF100-28-068 should have been reviewed at the same time as the Major Change dossier.

CRITICAL DESIGN CONFIGURATION CONTROL LIMITATION (CDCCL)

The introduction into the ALS, as a CDCCL, of the requirement to keep the wiring fuses installed on aeroplanes modified in accordance with the Fokker SBF100-28-068 should have been reviewed at the same time as the Major Change dossier.

WAY FORWARD

So what is the alternative solution in the present case? We would like to propose the following answer:

- Require the publication of an ALS revision that will address the subject within a reasonable timeframe (e.g. before the end of 2012),
- Issue an AD to require compliance with this ALS revision.

4. CONCLUSION

We believe that the solution presented in the PAD 12-129 will regrettably contribute to the confusion and its potential consequences.

The engineers who reviewed the PAD 12-129 would like to express in anticipation their thanks to the EASA for the consideration given to their comments.

EASA response:

We agree with the comment.

CDCCL and Airworthiness Limitation Items (ALI) identified as part of the Fuel Tank Safety (FTS) work, performed to achieve compliance with FAA Special Federal Aviation Regulation (SFAR) 88 and the Joint Aviation Authorities (JAA) Interim Policy INT/POL/25/12, will be included in the Airworthiness Limitations Section (ALS) of the Instructions for Continued Airworthiness (ICA) applicable to the F28 Mark 0070 and F28 Mark 0100 aeroplanes. This process is the subject of the Note in paragraph 1.L.(1).(c) of SBF100-28-068. The resulting revisions of the ALS will be made mandatory through an AD, as has been done in the past, refer for instance to EASA AD 2012-0049 of 27 March 2012.

However, as there is no synchronisation between the publication of revisions to the reports that constitute the ALS, and the publication of FTS related (P)ADs, it is necessary to initially introduce these CDCCL and ALI through the FTS related ADs.

Paragraph (4) of the Required Action(s) and Compliance Time(s) (RACT) section of the PAD identifies one way but not the only way to ensure compliance with the requirement of paragraph (3) of the RACT section. Use of the term "approved" is considered appropriate here.

No changes have been made to the Final AD in response to this comment.