EASA European Union Aviation Safety Agency	**Consultation paper** **Special Condition**	Doc. No.: CPTS-0000426 Issue : 1 Date : 06-Nov-2025 Proposed ☒ Final ☐ Deadline for comments: 26.11.2025

SUBJECT	:	Fuel Line Crashworthiness
REQUIREMENTS incl. Amdt.	:	CS 25.993(f) at amendment 27
ASSOCIATED IM/MoC	:	Yes☒ / No ☐ *[Delete last page of associated IM/MoC if not applicable]*
ADVISORY MATERIAL	:	None

Table of Content for Public Consultation

INTRODUCTORY NOTE:

The following Special Condition (SC) has been classified as important and as such shall be subject to public consultation in accordance with EASA Management Board decision 12/2007 dated 11 September 2007, Article 3 (2.) which states:

"*2. Deviations from the applicable airworthiness codes, environmental protection certification specifications and/or acceptable means of compliance with Part 21, as well as important special conditions and equivalent safety findings, shall be submitted to the panel of experts and be subject to a public consultation of at least 3 weeks, except if they have been previously agreed and published in the Official Publication of the Agency. The final decision shall be published in the Official Publication of the Agency.*"

ABBREVIATIONS:

CATA	Certification Authorities for Transport Airplanes

IDENTIFICATION OF ISSUE:

CS 25.993(f)/ CS 25J993(f) is a result of an accident on UA Flight 227 Boeing Model 727 airplane on 11th Nov. 1965, where fuel lines had been installed in areas where fuel line flexibility had not been required. It was determined the accident was a survivable crash. However, rigid aluminum fuel lines that were routed in an aluminum shroud became severed, releasing fuel under pressure, which was ignited by either sparking generator leads, sparks from the fuselage on the runway, or both. The subsequent fire caused numerous fatalities that could have been prevented if the post-crash fire had not occurred. Prevention of fuel line rupture and fuel leakage is the objective of CS 25.993(f)/ CS 25J993(f) and it states that fuel lines be designed to allow a reasonable degree of deformation and stretching without leakage.

During past certification programs, the “reasonable degree of deformation and stretching” has been misinterpreted as the expansion and contraction that would occur in normal service or in a minor crash landing. However, CS 25.993(f) was promulgated to ensure that “reasonable” design precautions are taken to prevent fuel leakage during or after a survivable crash; intent of the regulation is fuel line robustness against elongations and deformations that would occur in a survivable crash.

In addition, when CS 25.993(f) was created, installation of fuel lines outside the fuselage was not envisioned. However, Airworthiness Authorities during CATA harmonization exercise confirmed that same precautions shall be applied for fuel lines outside the fuselage contour as the resulting consequences would be equivalent to a fuselage internal fuel line leak after fuselage break-up.

Considering all the above, the following Special Condition is proposed.

M-TS-0000426

Special Condition

Fuel Line Crashworthiness

1. APPLICABILITY

This SC is applicable to CS-25 Large aeroplanes.

2. SPECIAL CONDITION

In lieu of demonstrating compliance with the CS 25.993(f) and CS 25J993(f), the actual design shall comply with the following special detailed technical specifications:

(…)
f) Each fuel line within and around the fuselage must be designed and installed to allow a reasonable degree of deformation and stretching without leakage.

Associated Means of Compliance

EASA recognizes the CATA paper Ref: CATA ANAC001 dated 05-Sep-2024: https://www.easa.europa.eu/en/downloads/140393/en as an acceptable means of compliance to 25.993(f) and CS 25J993(f) as amended by the prescribed SC M-TS-0000426.

The associated Means of Compliance is published for awareness only and is not subject to public consultation.