

**Equivalent Safety Finding to CS 23.855(b)
– Cargo and baggage compartment fire
protection**

Doc. No. : ESF-D23.855-01

Issue : 1

Date : 27 NOV 2020

Proposed ☒ Final ☐

Deadline for comments: 17 DEC 2020

SUBJECT : **ESF to CS 23.855(b) – Cargo and baggage compartment fire protection**

REQUIREMENTS incl. Amdt. : **CS 23.855(b) Amdt.3**

ASSOCIATED IM/AMC : Yes ☐ / No ☒

ADVISORY MATERIAL : **N/A**

INTRODUCTORY NOTE:

The Equivalent Level of Safety (ELOS) finding Memo ACE-15-17 has been issued by the FAA for the Aerocet project to install their Model 6650 Amphibious Floats (FAA STC SA02452SE) for Amendment 23-49 of Title 14, Code of Federal Regulations (14 CFR) 25.855(b). The corresponding CS 23.855(b) at Amdt. 3 has the same wording. The ELOS finding Memo is considered by EASA being also an acceptable Equivalent Safety Finding (ESF) to the corresponding CS 23.855(b). This ESF has been classified as important; as such it 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."

Note: this consultation is for the EASA ESF and not for the FAA ELOS finding Memo. Comments and the corresponding resolution will affect the EASA ESF only.

IDENTIFICATION OF ISSUE:

See "Background" in ELOS Memo "ACE-15-17" attached.

Considering the above, the following Equivalent Safety Finding is proposed:

 European Union Aviation Safety Agency	Equivalent Safety Finding to CS 23.855(b) – Cargo and baggage compartment fire protection	Doc. No. : ESF-D23.855-01 Issue : 1 Date : 27 NOV 2020 Proposed <input checked="" type="checkbox"/> Final <input type="checkbox"/> Deadline for comments: 17 DEC 2020
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Equivalent Safety Finding ESF to CS 23.855(b) – Cargo and baggage compartment fire protection

1. Applicability

Daher Aircraft Design LLC. Kodiak 100 Series.

Affected CS

CS 23.855(b) Amdt 3

2. Intent of the CS, compensating Factors and/or alternative requirements

See FAA ELOS finding Memo ACE-15-17, sections

- “Description of compensating design features or alternative standards which allow the granting of the ELOS finding (including design changes, limitations or equipment need for equivalency)” and
- “Explanation of how design features or alternative Methods of Compliance (MoC) provide an equivalent level of safety intended by the regulation”

3. Attachments

FAA ELOS finding Memo “ACE-15-17”



**Federal Aviation
Administration**

Memorandum

Date: August 26, 2015
To: Manager, Aircraft Certification Office, ANM-100S
From: Manager, Small Airplane Directorate, ACE-100
Prepared by: Francis Smith, Cabin Safety & Environmental Systems Branch, ANM-150S
Subject: INFORMATION: Equivalent Level of Safety (ELOS) Finding for Installing
Aerocet, Inc., Model 6650 Amphibious Floats on Quest Aircraft Co., LLC,
Model Kodiak 100 Airplane, Project #: ST12414SE-A

ELOS Memo #: ACE-15-17

Regulatory Ref: 14 CFR 23.855(b), amendment 23-49

This memorandum informs the certificate management aircraft certification office of an evaluation made by the Small Airplane Directorate (SAD) on the establishment of an equivalent level of safety (ELOS) finding for installing Aerocet, Inc. (Aerocet), Model 6650 amphibious floats on the Quest Aircraft Co., LLC (Quest), Model Kodiak 100 airplane.

Background:

Aerocet submitted an application for a Supplemental Type Certificate (STC) to change the Quest Model Kodiak 100 airplanes listed on TCDS A00007SE. This change removes the existing land-plane landing gear and installs twin amphibious floats. The amphibious floats are made from a composite laminate system and include space for three lockers in each float for cargo and baggage. The Aerocet Model 6650 amphibious floats are constructed with carbon fiber materials and a resin that provide high water resistance, but these materials do not meet the flammability requirements of 14 CFR 23.855, Cargo and baggage compartment fire protection, paragraph (b). The following depiction in figure 1 is the layout of the modified airplane.

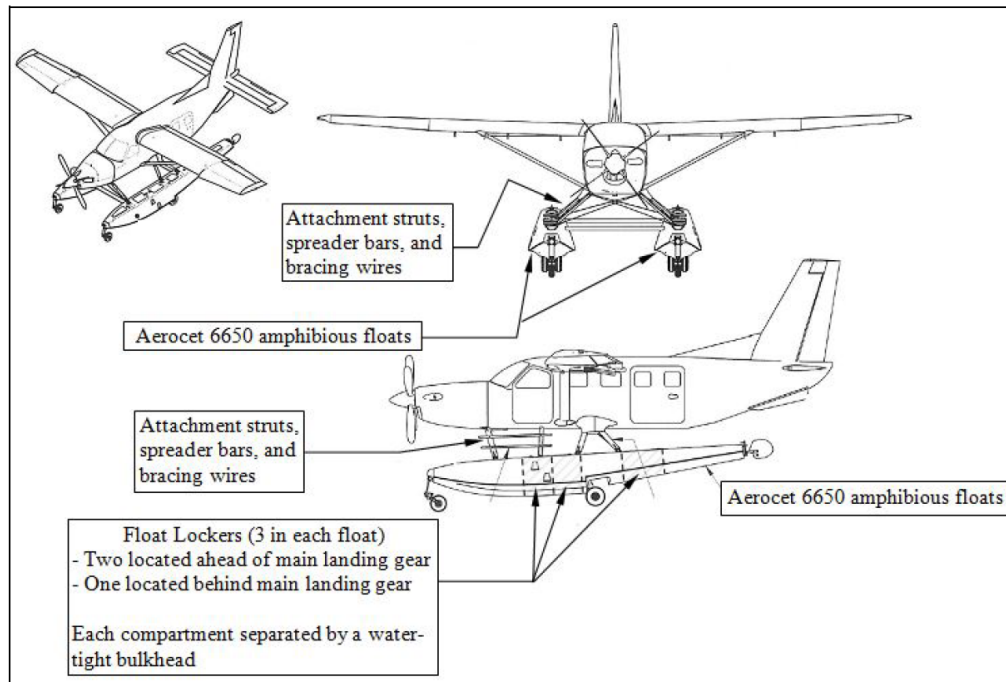


Figure 1: Kodiak 100 Airplane Modified with Amphibious Floats

Applicable regulation:

14 CFR 23.855(b)

Regulation requiring an ELOS finding:

14 CFR 23.855, Cargo and baggage compartment fire protection, paragraph (b) states the following:

“Each cargo and baggage compartment must be constructed of materials that meet the appropriate provisions of § 23.853(d)(3).”

Description of compensating design features or alternative Methods of Compliance (MoC) which allow the granting of the ELOS (including changes, limitations, or equipment needed for equivalency):

The compensating factors that provide an equivalent level of safety to § 23.855(b) are as follows:

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- The compartments are detached and separate from the fuselage. Hence, there is no risk of smoke inhalation to the pilot or passengers from a fire in the float.

- The lockers are designed to be water and air tight. Fires inside the compartment consume the existing oxygen and eventually self-extinguish. This has been verified through testing.

Explanation of how design features or alternative Methods of Compliance (MoC) provide an equivalent level of safety intended by the regulation:

The compensating factors raise the level of safety that is required by § 23.855(b) by minimizing flame propagation through oxygen deprivation in the cargo compartment. Furthermore, the cargo compartments within the floats are located in such a way to make smoke inhalation and injury to the pilot and passengers unlikely.

FAA approval and documentation of the ELOS finding:

The FAA has approved the aforementioned equivalent level of safety finding in project issue paper S-1. This memorandum provides standardized documentation of the ELOS finding that is non-proprietary and can be made available to the public. The Accountable Directorate has assigned a unique ELOS Memorandum number (see front page) to facilitate archiving and retrieval of this ELOS. This ELOS Memorandum number must be listed in the Type Certificate Data Sheet under the Type Certificate (TC) and Amended Type Certificate (ATC) or in the Limitations and Conditions section of the Supplemental Type Certificate (STC). An example of an appropriate statement is provided below.

Equivalent Level of Safety Findings have been made for the following regulation:

14 CFR 23.855, amendment 23-49, Cargo and baggage compartment fire protection,
paragraph (b)
(documented in ELOS Memo ACE-15-17)

//SIGNED//

Mel Johnson for Earl Lawrence, Manager, Small Airplane Directorate,
Aircraft Certification Service

August 26, 2015

Date

ELOS Originated by: Francis Smith	Manager, Cabin Safety & Environmental Systems Branch: Ross Landes	Routing Symbol: ANM-100S
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