

European Union Aviation Safety Agency

Comment-Response Document (CRD) to CPTS-0000378 Iss. 01

Comment-Response Document (CRD) to Equivalent Safety Finding ref. CPTS-0000378 issue no. 01 on 'Fuel System Drop-Test – Alternative fluid'

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1. Summary of the outcome of the consultation

Comments have been submitted by 4 commenters, whereas technical comments were provided by one heliciopter manufacturer. The respective responses and related clarifications are provided in this document. No changes to the ESF were introduced.



2. Individual comments (and responses)

In responding to comments, EASA states its position as follows:

- (a) **Accepted** EASA agrees with the comment and any proposed change is incorporated into the text.
- (b) **Partially accepted** EASA either partially agrees with the comment or agrees with it but the proposed change is partially incorporated into the text.
- (c) **Noted** EASA acknowledges the comment, but no change to the text is considered necessary.
- (d) **Not accepted** EASA does not agree with the comment or proposed change.

2.1. CRD table of comments, responses and resulting text

(General Comments)

comment	4 comment by: <i>DE-LBA</i>
	LBA has no comments.
response	Noted
comment	5 comment by: FOCA (Switzerland)
	Thank you for the opportunity to comment. We have no remarks on this document.
response	Noted
comment	6 comment by: <i>Federal Aviation Administration</i>
	FAA comment: The FAA does not issue general equivalent level of safety (ELOS) documents such as Certification Memos. The FAA will consider applicant requests for ELOS on a project specific basis.
response	Noted

3. COMPENSATING FACTORS

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comment	1 comment by: <i>Leonardo Helicopters</i>
	A definition of acceptable values to claim fluid similairty, or alternatively a list of acceptable fluids with associated consequences on assumptions - if any (e.g.: shuold density be higher than fuel one, does it means that less fluid mass is to be considered?), should be specified to avoid case by case discussion on each application and resulting misalignments among various cases.
response	Not accepted. Fluid similarity is requested to be ensured considering following fluid characteristics: density and viscosity.



Regarding the density, it is precised by 3 a. indirectly considering the weight associated to the volume of fluid necessary, as follows: "The mass of the filled alternative drop test fluid shall be equal to an 80% filling with water of the normal, full capacity".

Viscosity is to be compared to the standards associated to the approved fuel list of each applicant.

The proposal for a list of acceptable fluid is not agreed at the moment in order to exclude suitable fluids in accordance to the criteria.

comment	2 comment by: <i>Leonardo Helicopters</i>
	Regarding environmental aspects, is it correct to assume that the alternative fluid is to be safely collected for disposal, including the one that may leak during the drop test execution? This requirement is currently not applicable by definition to water-based drop tests.
response	Not accepted. Firstly, the ESF specifies in 3.b) that "The fluid characteristics shall be equivalently safe for handling and environmental aspects when compared to a test with water." Secondly, as is current practice in other test domains, fluid handling against environmental constraints shall be performed in accordance with local environmental regulations. As per drop test set-up, no water collection is requested in current regulation, but the detection of any leakage. Following guidance is provided in AC.27-1B/AC.29-2C: "The tank (except for the vent openings) should be wrapped in light plastic sheet to ensure that minor leakage or seepage (and its source) is detected.". The same guidance can be applied for the alternative fluid use.

1. APPLICABILITY

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comment	3 comment by: Leonardo Helicopters
	The application of this ESF to certified products, e.g. following the introduction of changes to existing design, may lead to contradictory results with respect previous certification evidences, but without a clear indication on wehter such a difference is to be addressed to the different methodology or to a design shortcoming. It may be recommended to limit the applicability of this ESF to new products only.
response	Not accepted. The applicability of this ESF is the choice of the Applicant. EASA is not mandating the use of this alternative fluid.