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Safety Recommendation:

EASA should review its Supplemental Type Certificate approval process to ensure that firefighting capability is considered whenever additional electrical equipment associated with a Supplemental Type Certificate is installed.

Response:

On 7 June 2024, EASA informed the AAIU that:

“The rules applicable for the classification and approval of Major Changes and Supplemental Type Certificates (STC) are provided in Section A, Subparts D and E as applicable, of Annex I (Part-21) to Regulation (EU) 748/2012. Regarding Major Changes, point 21.A.101 - also named ‘Changed Product Rule (CPR)’ - of the Part-21 approval process, details how to determine the type certification basis applicable for the design change and areas affected by the change(s).

The corresponding CPR process itself includes the identification of the areas of the product affected by the change, the identification of new design features and associated hazards, the evaluation of the adequacy of the applicable certification specifications to cover and mitigate those features and hazards, and potentially the issuance of additional special conditions or amendment of special conditions if it is found that the applicable certification specifications are not adequate (point 21.A.101(d)).

The European Union Aviation Safety Agency (EASA) considers that the above-mentioned change approval rules of Part-21 are sufficiently robust for the purpose of identifying hazards and prescribing certification mitigations for new risks resulting from the proposed Major Change(s).

When properly designed, installed and operated, the addition of equipment to an aircraft electrical system should not introduce a new hazard compared to the initial type certification hypotheses. However, the design and installation of the payload equipment of the occurrence aircraft was not approved.

The current airworthiness certification specifications applicable to the occurrence aircraft type (Certification Specifications for Normal-Category Aeroplanes (CS-23) Amendment 6) already contain provisions for fire protection. In particular, CS 23.2325(a)(1) prescribes that "The aeroplane is designed to minimise the risk of fire initiation due to anticipated heat or energy dissipation or system failures or overheat that are expected to generate heat sufficient to ignite a fire;[...]" . Additionally, CS 23.2325(b)(1) requires that “The aeroplane is designed to minimise the risk of fire propagation by

providing adequate fire or smoke awareness and extinguishing means when practical".

The lessons learnt from past accidents highlight that firefighting and fire resistance should only be considered as a last line of defence, to mitigate the residual risk after fire prevention measures are applied. It should also be noted that an excessive use of firefighting equipment in a small and confined space during flight might even have a negative safety impact as a result of the emission of powders, liquids, foams and/or gases. EASA believes that these considerations are already adequately taken into account in the currently applicable CS-23, which are also found consistent with the principles outlined in Article 4((2) of Regulation (EU) 2018/1139 of the European Parliament and of the Council which require that measures taken by EASA under this Regulation must correspond and be proportionate to the nature and risk of each particular activity to which they relate.

In view of the above considerations, EASA finds that for CS-23 aeroplanes with fewer than 6 passengers, only one fire extinguisher, reachable by the minimum crew on board (the pilot), is considered sufficient and proportionate.

In conclusion, EASA agrees that the STC approval process should consider firefighting capability as a mitigating factor whenever new hazards are introduced. EASA considers that the current Part-21 approval process, including the CPR, is adequate for this purpose. Furthermore, EASA considers that to ensure an adequate level of safety, the certification focus should be on means of fire prevention and fire retardation before considering additional firefighting capabilities.”

AAIU Comment:

In light of EASA's response of 7 June 2024, the AAIU considers this Safety Recommendation to be ‘Implemented, closed’ .