EASA European Union Aviation Safety Agency	**Consultation paper** **Equivalent Safety Finding**	Doc. No. : ESF-div-LSA.5-01 Issue : 1 Date : 31 May 2022 Proposed ☐ Final ☒ Deadline for comments: 13 May 2022

SUBJECT	:	**Increase of Maximum Take-off Weight for CS LSA aircraft with a cable retracting device for towing operations**
REQUIREMENTS incl. Amdt.	:	**CS LSA.5(a) amdt. 1**
ASSOCIATED IM/MoC	:	Yes☐ / No ☒
ADVISORY MATERIAL	:	**none**

INTRODUCTORY NOTE:

The following Equivalent Safety Finding (ESF) 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.*"

IDENTIFICATION OF ISSUE:

The CS LSA was written to allow the certification of simple, lightweight aircraft and contains requirements for towing operations. CS LSA aircraft are limited to a MTOW of 600kg. The MTOW limit is permietted to be increased to 650kg in CS.LSA-5 if the aircraft are “intended to be operated on water”(amphibians). This limit is laid down in CS-LSA.5 (a) which states:

This Certification Specification is applicable to Light Sport Aeroplanes to be approved for day-VFR only that meet all of the following criteria:

(a) A Maximum Take-Off Mass of not more than 600 kg for aeroplanes not intended to be operated on water or 650 kg for aeroplanes intended to be operated on water.

CS LSA.5 (a) defines the applicability of CS LSA, together with other criteria: Maximum stall speed; maximum occupancy of 2 persons; single, non turbine driven propeller propulsion unit; non-pressurised cabin).

An applicant has requested an Equivalent Safety Finding to CS-LSA.5 (a), and an extension of the MTOW allowed for a non amphybian CS LSA aircraft up to 650 kg, to enable the installation of a retractable system for towing operations, with the argument that the installation of a retractable cable system will result in an increased empty weight that is higher than that allowed by CS-LSA. The applicant has further substantiated the request by stating that a towing aircraft with a cable retracting device has additional benefits compared to a non retractable system:

- It reduces the risk of damaging infrastructure or injuring people on ground compared to an aircraft with a non-retractable cable towing system;
- It allows towing operations with two people on board for training purpose;

- On many airfields, an additional circuit pattern is required before landing to allow cable release above the airfield. This requires additional fuel and increase the noise level around the area.
- On some airfields it is mandatory to use a retractable towing cable system due to the reasons above. The consequences of this restriction are the usage of heavy and therefore noisy and less efficient aircraft for this kind of operation.

The applicant has proposed that such an increase of MTOW to 650 kg is within the intent of CS LSA, since CS LSA already forsees an increased MTOW up to 650 kg for amphibian aircraft and therefore an increase of the MTOW for aircraft equipped with retractable cable is already technically covered by CS-LSA, provided that:

- all other applicability requirements of CS-LSA.5 are met, and
- such an increase of MTOW should be limited to aircraft equipped with a non-retractable cable, therefore providing an increase in safety for glider towing operation with modern, ecological/low noise and efficient aircraft.

EASA recognize (as explained in NPA 2008-07 - for the issuance of CS LSA - and the corresponding Comment Response Document - https://www.easa.europa.eu/document-library/certification-specifications/cs-lsa-initial-issue) that the increased MTOW for amphibian aircraft was introduced due to the practical impossibility to design an amphibian aircraft with a MTOW of 600 kg (See CRD comment and response no. 19, 187 and others). The justification proposed by the applicant follow a similar rationale and is found to be acceptable by EASA considering the benefit of these towing operations which are already in the intent of CS LSA, therefore no technical requirements are considered necessary in addition to those contained in CS LSA.

EASA considers that the ESF in Appendix A, combined with the justification above, provides a level of safety equivalent to CS-LSA.5(a), which is in addition the intentend level of safety for CS LSA.

Appedix A

Equivalent Safety Finding

Increase of Maximum Take-off Weight for CS LSA aircraft with a cable retracting device for towing operations

1. APPLICABILITY

This ESF is applicable for CS-LSA aircraft featuring a retractable towing device for glider towing.

1.1 AFFECTED CS

CS-LSA.5 (a) amdt.1

2. COMPENSATING FACTORS

A maximum take of mass (MTOW) higher than that established in CS-LSA.5(a) for CS-LSA non-amphybian aircraft is accepted provided that the following requirement are complied with:

a) The MTOW is limited to 650kg;
b) The increased MTOW is limited to an aircraft configuration featuring a retractable cable towing device; This limitation needs to be clearly stated in the Aircraft Flight Manual and TCDS.
c) The MTOW of the aircraft without the retractable towing device (system and related parts for its installation and operation) shall not be higher than 600 kg.