

Standard Change CS-SC105b

INSTALLATION OF MOUNTING SYSTEMS TO HOLD EQUIPMENT

1. Purpose

This SC is for the installation of mounting systems that are intended to hold pilot's equipment inside the cockpit or the cabin. This SC only addresses the mechanical installation of mounting systems.

Note: This SC does not apply to handheld carry-on cameras, nor to devices worn by the pilot, e.g. helmet-mounted cameras.

2. Applicability/Eligibility

This SC is applicable to any ELA2 aircraft, excluding rotorcraft.

3. Acceptable methods, techniques, and practices

For the purposes of this SC, the following definitions apply:

- 'installer' means the person that releases the aircraft to service (and that carries out this SC) in accordance with AMC M.A.801 or AMC1 ML.A.801, as applicable;
- 'mounting system' means the structural provisions such as suction mounts, brackets, clamps or any attachments which are fastened or bonded and installed in the aircraft through this SC;
- 'equipment' means the equipment that is used and installed by the pilot on the mounting system defined above in accordance with the data established and released by the installer; and
- 'unit' means the equipment plus the mounting system.

Installation conditions:

- All the parts and appliances identified in this SC are eligible for installation without an EASA Form 1.
- If the unit is fitted in or near the cockpit, it must not interfere with any cockpit controls, nor obstruct the pilot's view of the instruments, or the pilot's external view, and it must not cause a distraction to the pilot.
- The mounting system must be installed on one of the fixed surfaces of the aircraft, i.e. not on any control system components that are subject to motion. There must be no interference with the flight controls.
- Where brackets, clamps and/or attachments are used, care must be taken to ensure that they do not damage the aircraft structure that carries flight loads.
- If existing airframe structural fastener locations are picked up, then any additional installed brackets of the mounting system should be of the same material as the underlying structure, and the new attachment bolts will need to be of sufficient length to maintain safety and to maintain suitable thread engagement and protrusion. However, it should be ascertained that no external or internal parts or systems, including the flight controls, could be fouled or obstructed

by employing longer fasteners. Note that no part of the mounting system should be introduced that acts as a packer between any major load paths, e.g. where a bracket would act as a washer under the bolt head or nut, the size of the bolt should be taken into consideration, and all affected fasteners must be inspected prior to the release to service of the aircraft by the installer.

- If suction mounts are used inside the cockpit or cabin, a suitable secondary retaining lanyard or strap should be attached to the unit to prevent any damage or a control jam if the primary suction mount becomes detached.
- The equipment that is mounted on the holding structural provisions in occupied areas should be installed so as to meet the requisite crash load requirements so that they will not detach, or become loose and cause injury to the occupants during operation or in the event of an emergency landing.
- For suction mountings, the primary suction mounting and secondary lanyard/strap should be assessed so that each is independently capable of carrying the load of the equipment.
- Push/Pull test requirement: the equipment should be weighed prior to installation and checked to ensure that the total unit mass does not exceed 300g. Installers are advised to record the mass of the mounting system in a visible area.
- In order to check the security of the mounting system in flight, ground and emergency landing cases, a spring balance or another suitable method should be used to independently apply loads to the mounted unit of at least:
 - 9 times the weight of the unit forwards,
 - 4.5 times the weight of the unit upwards,
 - 6 times the weight of the unit downwards,
 - 3 times the weight of the unit to port,
 - 3 times the weight of the unit to starboard.

Loading should be applied for at least 3 seconds with no failures, damage or permanent deformation. Higher load factors should be considered appropriate for aerobatic use and should include a downwards case of 9 times the weight of the unit.

- When a suction mount is used, pull testing should be used to confirm the integrity of the secondary retention to at least 10 times the weight of the unit. Periodic rechecking of the primary mount integrity is advised.
- Proprietary self-adhesive mounts can be used in accordance with the manufacturer instructions provided that they are capable of passing the pull tests. The installation of a secondary independent lanyard/strap retention feature may also be considered prudent when using these types of mounts.

Additionally, the following considerations apply:

- As part of applying this SC, the installer shall:

- define and record the locations where the mounting systems can be installed on the individual aircraft, ensuring that the installation does not impede the rapid evacuation of the aircraft; and
 - list the acceptable and tested mounting systems, their weights, and the part numbers or other means by which they are identifiable.
- In the particular case of balloons, pull tests shall be performed:
- on all locations where a camera can be installed; and
 - in all possible landing directions, including vertically downwards (-z).
- No items with sharp edges shall be installed in close proximity to the head of any occupant.

4. Limitations

Any limitations defined by the equipment manufacturer apply.

The total mass of the unit shall not exceed 300 g.

5. Manuals

Amend the AFM with an AFMS that contains or references the Instructions for operation and the mass of the mounting system, as required.

Amend the ICAs to establish maintenance actions/inspections and intervals, as required. There is a concern that self-adhesive mounts may be subject to environmental deterioration, especially for installations that are used over long periods. Therefore, periodic inspections of the whole mounting system shall be mandated, and if there are signs of deterioration, a pull test of the strength and integrity of the unit shall be performed. Parts that show signs of deterioration must be rectified or replaced.

6. Release to service

This SC is not suitable for the release to service of the aircraft by the pilot-owner.

Note: Any mounting of an installation on the aircraft in accordance with the AFM/AFMS is not considered a maintenance action according to Part-M, and does not require a release to service.

[Issue: STAN/3]

[Issue: STAN/4]