EASA Safety Information Bulletin

SIB No.: **2013-04**

Issued: **13 February 203**

Subject: **Hook and Loop Style Fasteners as Mounting Mechanism for an Emergency Locator Transmitter (ELT)**

Ref. Publication: Federal Aviation Administration (FAA) Special Airworthiness Information Bulletin (SAIB) HQ-12-32 dated 23 May 2012, attached as pages 3 and 4 of this SIB.

Applicability: ELT manufacturers and ELT installers, working on aircraft with an ELT installed, if mounted with hook and loop style fasteners.

Description: In several recent aircraft accidents, ELTs mounted with hook and loop style fasteners, commonly referred to as Velcro®, have detached from their aircraft mounting. The separation of the ELT from its mount could cause the antenna connection to sever, rendering the ELT ineffective.

Inconsistent installation and reinstallation practices can lead to the hook and loop style fastener not having the necessary tension to perform its intended function. Additionally, the retention characteristics of the hook and loop style fastener may degrade over time, due to wear and environmental degradation from vibration, temperature, or contamination. The safety concern about these attachments increases when the ELT manufacturer's instructions for continued airworthiness (ICA) do not contain specific instructions for regularly inspecting the hook and loop style fasteners, or a replacement interval (e.g. Velcro life limit). This concern applies, regardless of how the hook and loop style fastener is installed in the aircraft.

The separation effect occurred, even though the hook and loop style fastener was tested during initial ETSO (European Technical Standard Order) compliance verification against crash shock requirements.

FAA SAIB HQ-12-32 addresses the same issue.

At this time, the safety concern described in this SIB is not considered to be an unsafe condition that would warrant

Airworthiness Directive (AD) action under EU 748/2012, Part 21.A.3B.

Recommendation(s): EASA endorses the recommendations of the FAA, as shown in the attached SAIB, and this SIB is issued to bring these to the attention of both ELT manufacturers and ELT installers.

In addition, EASA recommends aircraft manufacturers and ELT installation (i.e. aircraft modification) designers to review the ELT manufacturer's existing ICA and to ensure that the ICA for the aircraft or modification, as applicable, are appropriately addressing the hook and loop style fasteners handling for ELT retention.

Note1: United States Federal Regulations (14 CFR § 91.207 (d)) require a 12 month period for inspections, to check for:

- *Proper ELT installation;*
- *Battery corrosion;*
- *Operation of the controls and crash sensor; and*
- *The presence of a sufficient signal radiated from its antenna.*

Note 2: The FAA has issued TSO-C126b, 406 MHz Emergency Locator Transmitter (ELT) to add the following:

The use of hook and loop fasteners is not an acceptable means of attachment in complying with the Crash Safety requirements of section 2.2.5 of RTCA/DO-204A for automatic fixed (AF) and automatic portable (AP) ELTs.

A similar update of ETSO-C126a is planned.

Contact(s): For further information contact the Safety Information Section, Executive Directorate, EASA. E-mail: ADs@easa.europa.eu.

FAA
Aviation Safety

SPECIAL AIRWORTHINESS INFORMATION BULLETIN

SUBJ: Hook and Loop Style Fasteners as a Mounting Mechanism for Emergency Locator Transmitters (ELTs)

SAIB: HQ-12-32
Date: May 23, 2012

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin (SAIB) informs emergency locator transmitter manufacturers as well as installers and aircraft maintenance personnel of a concern with the ability of hook and loop style fasteners to retain their designed capability to restrain emergency locator transmitters during accident impact. In several recent aircraft accidents, ELTs mounted with hook and loop style fasteners, commonly referred to as Velcro®, have detached from their aircraft mounting. The separation of the ELT from its mount caused the antenna connection to sever, rendering the ELT ineffective.

Background

ELTs in use today typically have a technical standard order authorization (TSOA) for TSO-C91a, TSO-C126, or TSO-C126a and are incorporated into the type design of the aircraft in accordance with 14 CFR § 21 or installed as an alteration to the aircraft in accordance with 14 CFR § 43. The concern is with use of hook and loop style fasteners for mounting the ELT. Inconsistent installation and reinstallation practices can lead to the hook and loop style fastener not having necessary tension to perform its intended function. Additionally, the retention characteristics of the hook and loop style fastener may degrade over time due to wear and environmental degradation from vibration, temperature, or contamination. Concern increases further when the ELT instructions for continued airworthiness (ICA) do not have specific instructions for inspecting the hook and loop style fasteners or a replacement interval. This concern applies regardless of how the hook and loop style fastener is incorporated. The FAA has evaluated the mounting requirements and tests in TSO-C91a and TSO-C126a and determined that they do not adequately address retention capability in ELT designs and is revising TSO-C126a accordingly.

Recommendations

For ELT manufacturers who previously utilized hook and loop style fasteners for ELT retention, we recommend you include the following information in your ICA:

1. Instructions for properly securing the ELT during installation and reinstallation as well as a method to determine the appropriate tension of the hook and loop style fasteners.
2. Instructions for inspecting hook and loop style fasteners for wear, contamination, environmental degradation, or other effects to ensure they will continue to meet the requirements in the applicable TSO. Incorporating this inspection with the inspection required by 14 CFR § 91.207 is appropriate.
3. Replacement interval for the hook and loop style fasteners.

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