[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

Emergency Locator Transmitters (ELTs)

AGENCY: Federal Aviation Administration (FAA), DOT

ACTION: Final notice recommending voluntary change to securing existing ELTs as specified in Technical Standard Order (TSO)-C126b, 406MHz Emergency Locator Transmitter.

SUMMARY: This notice summarizes the inadequacies of hook and loop fasteners as a means for securing automatic fixed (AF) and automatic potable (AP) ELTs, and avoids placing an undue burden on aircraft owners while acknowledging the voluntary efforts of ELT manufacturers to improve designs.

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SUPPLEMENTARY INFORMATION:

Background

On March 10, 2015, the Federal Aviation Administration (FAA) published in the Federal Register, (80 FR 12697 (2015)), a Notice announcing the recommendation of

voluntary change to a metal strap type restraint method for securing ELTs. The FAA recommends voluntary changes to existing ELTs installed with hook and loop fasteners because of their tendency to become dislodged from their mounting trays on impact. The separation of those ELTs from their mounting trays caused their antenna connection to sever, thus rendering the ELTs to be ineffective and unable to perform their intended function. The FAA also evaluated the retention tests specified by TSO-C91a, TSO-C126, and TSO-C126a and determined these standards did not adequately address the use of hook and loop fasteners. Hook and loop fasteners were not an acceptable means of compliance to meet the mounting and retention requirements of the ELT TSOs. While the evaluation of installation approval using hook and loop fasteners may meet the TSO requirements for retention forces in laboratory conditions, accident investigations found these fasteners did not perform their intended function. Technical Standard Order TSO-C126b, 406 MHz Emergency Locator Transmitters, already excludes hook and loop fasteners as the primary method of ELT attachment.

FAA Concerns

The agency identified the following concerns after completing its evaluation of the use of hook and loop fasteners:

(1) Hook and loop fasteners fail to retain the ELT when insufficient tension is applied to close the fastener. There is no repeatable method for installation and no method to evaluate the tension of the hook and loop fastener. The allowance for pilots to secure ELTs to the aircraft when changing ELT batteries further increases the potential for inconsistent and unsatisfactory installations.

(2) Hook and loop fasteners closed with proper tension may stretch or loosen over time due to wear, fluids, vibration, and repeated use, leading to insufficient tension to retain the ELT.

(3) Hook and loop fasteners closed with proper tension do not provide stated retention capability due to debris which can contaminate the hooks and loops of the fastener.

(4) Hook and loop fasteners closed with proper tension degrade due to environmental factors such as repeated heating and cooling cycles, temperature extremes, and contamination resulting from location in equipment areas.

Comments

The FAA received one comment in response to the March 10, 2015, **Federal Register** Notice. The comment, by ELTA, stated that there is some potential confusion as to which ELTs were applicable under the FAA's proposed voluntary change from the use of hook and loop fasteners to metallic straps. Some customers could assume the Federal Register notice is applicable to all types of ELTs, including the survival type ELT.

The FAA acknowledges this comment. This final Federal Register notice clarifies the FAA recommends voluntary changes to the securing mechanisms for automatic fixed and automatic portable ELTs. Additionally, the requirements section of TSO-C126b specifies the use of hook and loop fasteners is not an acceptable means of attachment when showing compliance with the Crash Safety requirements of RTCA/DO-204A, section 2.2.5. Section 2.2.5 of this RTCA document applies only to AF and AP ELTs.

Conclusion

The FAA evaluated the mounting requirements and retention test and determined the standards do not adequately address the use of hook and loop fasteners. Upon completion of the evaluation, the FAA identified numerous concerns with the use of hook and loop fasteners and continues to recommend voluntary changes of securing mechanisms for existing ELTs which utilize hook and loop fasteners. The FAA also asks aircraft owners/operators with ELTs secured with hook and loop fasteners in their aircraft to voluntarily switch to a metal strap type restraint method.

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