



**[4910-13]**

**DEPARTMENT OF TRANSPORTATION**

**FEDERAL AVIATION ADMINISTRATION**

**Technical Standard Order (TSO)-C91a, Emergency Locator Transmitters (ELTs)**

**AGENCY:** Federal Aviation Administration (FAA), DOT

**ACTION:** Notice of cancellation of Technical Standard Order (TSO)-C91a, Emergency Locator Transmitter (ELT) Equipment.

**SUMMARY:** This notice announces the FAA's cancellation of TSO-C91a, Emergency Locator Transmitter (ELT) Equipment. The effect of the cancelled TSO will result in no new TSO-C91a design or production approvals being issued. Applicants wanting to apply for TSO Authorization (TSOA) for new Emergency Locator Transmitters (ELTs) after December 1, 2012, must seek authorization for TSO-C126a, 406 MHz Emergency Locator Transmitter (ELT), or subsequent.

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**SUPPLEMENTARY INFORMATION:**

**BACKGROUND**

On February 1, 2009 Cospas-Sarsat satellite system stopped processing signals from 121.5 MHz ELTs and now only processes signals from 406 MHz ELTs. The decision to discontinue processing of the 121.5 MHz signal was made by the International Cospas-Sarsat program with guidance from the United Nations. This was made due to the problems within the 121.5 MHz

frequency band which inundated SAR authorities with reports of poor accuracy and numerous false alerts, thus impacting the effectiveness of lifesaving services.

The 406 MHz ELT technology is an advance over the older 121.5 MHz ELT technology. TSO-C126a ELT equipment is more accurate and reliable than the 121.5 MHz ELT equipment. Examples of these improvements are: (1) global satellite coverage; (2) a unique beacon identification which is required to be registered so that if an alert is activated the rescue coordination center can confirm whether the distress is real, who they are looking for, and where the search should begin; (3) 406 MHz ELTs can be received by geostationary satellites which are always visible and provide instantaneous alerting, and (4) increased position accuracy which reduces the search area to less than two nautical miles in radius. Additionally, 406 MHz ELTs can optionally include a GPS position which can potentially reduce the search area to within 100 meters of the accident site.

The performance and benefits of TSO-C126a equipment surpasses TSO-C91a equipment. The 406 MHz technology is mature and prevalent in the ELT market today. New TSO authorizations for ELTs should be accomplished to TSO-C126a, or subsequent, thus the FAA is canceling TSO-C91a.

## **COMMENTS**

On January 11, 2012, a notice was published in the Federal Register which requested comments on the cancellation of TSO-C91a (77 FR 1779).

The FAA received comments from four organizations in response to the Federal Register Notice. Comments from Cobham Beacon Products were comprised of several questions. The first question regarded permissibility of minor and major changes to existing TSO-C91a designs.

In response, minor changes to an existing TSO-C91a ELT design will still be allowed in accordance with Title 14 of the Code of Federal Regulation (14 CFR) § 21.611(a), however, after December 1, 2012, a major change that is extensive enough to require issuance of a new ELT TSO authorization will have to meet the minimum performance standards contained in TSO-C126a. Cobham's second question requested clarification on repair and overhaul of TSO-C91a ELTs. The FAA clarifies that repair and overhaul of TSO-C91a articles will continue to be permissible. Cobham's third question involved permissibility of continued installation of TSO-C91a ELTs. The FAA reiterates that articles with previous TSO-C91a authorizations may still be produced, sold, and installed. Cobham also inquired if the FAA will update 14 CFR § 91.207 to exclude TSO-C91a equipment if the Federal Communication Commission (FCC) changes the rules governing the 121.5 MHz frequency. The FAA can not comment on future FCC actions, however at this time the FAA has no plans to revise 14 CFR § 91.207.

The second commenter, Astronics DME Corporation, provided two comments. First, Astronics commented that cancellation of TSO-C91a eliminates procedural access to the TSO requirements of 14 CFR 21, Subpart O when a major change to the TSO's article is required. Under 14 CFR Part 21, a major change requires the TSO authorization holder to apply for a new TSO authorization utilizing the latest revision of the TSO. Major changes to TSO-C91a articles will be accepted when applied for utilizing the latest revision of TSO-C126.

Astronics also commented that elimination of satellite detection on the 121.5 MHz frequency is not sufficient justification for TSO-C91a cancellation. The FAA acknowledges that the 121.5 MHz ELT signal is still monitored in many cases and provides limited search and rescue functionality. However, TSO-C126a is a more mature standard, and the 406 MHz signal provides satellite detection, which enhances search and rescue efforts. Because the 121.5 MHz ELT

continues to provide this basic functionality, the TSO-C91a ELTs can continue to be used to meet 14 CFR § 91.207, however because a more mature standard is available, it is appropriate to require new ELTs designs to meet the standards of TSO-C126a, or subsequent.

Astronics also commented that the TSO-C126a requirement to include a 121.5 MHz homing beacon in the 406 MHz ELT should be modified to allow manufacturers to include a GPS locator instead of the 121.5 homing beacon. The FAA acknowledges the benefits of including GPS position with the 406 MHz ELT transmission, and encourages this optional capability. However, this action is canceling TSO-C91a, and is not modifying TSO-C126a.

The General Aviation Manufacturers Association (GAMA) and the Aircraft Owners and Pilots Association (AOPA) both provided comments that they do not oppose the TSO-C91a cancelation, but that they would oppose any future retrofit requirement. Both organizations requested the FAA reiterate that cancelation of TSO-C91a does not impact the continued production of articles with an existing TSO authorization nor impact the sale, installation, or the use of 121.5 MHz ELTs to comply with 14 CFR § 91.207.

The General Aviation Manufacturers Association (GAMA) also conducted a survey of the manufacturers of general aviation aircraft and determined that all current production airplanes include dual or tri-band ELTs. Additionally, these dual or tri-band ELTs have been installed in new production airplanes for over the past 5-years.

The FAA reiterates in this final notice that cancelation of TSO-C91a does not affect production under an existing TSO authorization. Articles produced under an existing TSO-C91a authorization can still be installed according to existing airworthiness approvals and applications for new installation approvals will still be processed. This action does not impact operation of

TSO-C91a ELTs, and these ELTs will continue to satisfy the 14 CFR § 91.207 ELT equipage requirement.

GAMA also commented that the FAA should reconsider the ELT operational mandate as newer technology, such as ADS-B, becomes more commonplace. The FAA has determined that the ADS-B system currently cannot replace the ELT function. The ADS-B system is not required to be crashworthy and, thus, may not be operable or able to transmit following an aircraft accident. Additionally, current search-and-rescue technology is not compatible with ADS-B operations because ELTs broadcast on 121.5 or 406 MHz (not 1090 or 978 MHz). The FAA recognizes the value of a ground application that could allow for timely and accurate flight tracking of downed aircraft and is evaluating this capability separate from this action.

## **CONCLUSION**

TSO-C91a is canceled effective December 1, 2012. Manufacturers applying for new ELT technical standard order authorizations after December 1, 2012 must use TSO-C126a, or a subsequent ELT technical standard order.

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