

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: April 15, 1975

Forwarded to:

Mr. James E. Dow
Acting Administrator
Federal Aviation Administration
Washington, D. C. 20591

SAFETY RECOMMENDATION(S)

A-75-41 and 42

The National Transportation Safety Board has received reports from its field investigators concerning malfunctions of emergency locator transmitters (ELTs). These reports relate to inadequate restraint of the units, to battery failures within the units, or to failure of properly functioning units to be activated by crash impact forces.

Our investigators have reported many failures of the mounting straps and associated hardware used to restrain some fixed units during the crash sequence. As a result, the unit separates from the aircraft and from its antenna; therefore, if the unit does survive the impact, it cannot radiate an adequate signal.

Most ELT units now in service do not incorporate a feature by which the battery condition can be readily determined. Currently, each unit is placarded to indicate when the batteries should be replaced; unfortunately, this method is not effective because of the relatively inaccessible aft area where ELTs are often mounted. Our investigators have reported several instances where ELTs failed to operate because the batteries were dead. The Safety Board believes that the addition of a battery test system could eliminate these failures.


In addition, reports of ELTs' not actuating as a result of crash impact forces have been received. A number of these units have operated normally in tests when actuated by simulated forces required by 14 CFR 37.200. Whether the problem relates to switch design, to the specified time/acceleration impulse, or to the location of the units in the aircraft is not known. However, because of the possibility that the units might not survive crash forces, we do not favor relocating them farther forward in the airplane. Thus, we believe that the problem might be corrected by selecting a time/acceleration impulse which will be more consistent with that associated with various types of accidents. In this regard, the specified 5g longitudinal acceleration seems unnecessarily high, and we believe it could be reduced without danger of activating the units by flight or landing loads.

The Safety Board is aware of the intensive ongoing effort by the FAA, and the progress made to reduce the various service problems related to ELT operation. We believe, however, that these problem areas require additional corrective action to insure that ELTs are performing their life-saving function.

In view of the foregoing, the National Transportation Safety Board recommends that the Federal Aviation Administration:

1. Issue an Airworthiness Directive which will provide comprehensive design and installation specifications to assure that fixed type ELTs will remain in their mounts (Class III).
2. Amend 14 CFR 37.200 to (a) require a battery test feature that will be easily accessible to the pilot and (b) provide for actuation of the devices under conditions approaching those encountered in actual accidents (Class III).

REED, Chairman, McADAMS, THAYER, BURGESS, and HALEY, Members, concurred in the above recommendations.


By: John H. Reed
Chairman

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