

# PRODUCT SUPPORT MANUAL

Y1-03-0090-1  
Rev. D



## ELT-201™

Product No. 2760

Emergency Locator Transmitter

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## **1.0 INTRODUCTION**

### **1.1 Scope**

This manual provides information for the installation, operation, and maintenance of the ACR/ELT-201 Emergency Locator Transmitter (ELT), hereafter referred to as the ELT. The ELT-201 is approved for use as a survival (S) type ELT under FAA Technical Standard Order (TSO) C-91a and FCC Rules Part 87.

### **1.2 Purpose**

The ELT (S) is intended to be carried aboard aircraft and used to locate survivors in the event of a ditching; it can be used, however, in over-land emergencies. When activated, it transmits a distinctive sound on the international distress frequencies of 121.5 and 243 MHz. These signals can be used by Search and Rescue personnel to assist them in locating survivors.

Unlike other types of ELTs, the ELT (S) is intended to be removed from the aircraft and to travel with survivors. The ELT-201 may be installed within life rafts or slide rafts or mounted in the aircraft cabin or flightdeck.

The ELT-201 is activated by placing the unit in water. The unit is completely waterproof and floats upright when deployed. A tether is provided for securing the unit to a life raft or person.

The ELT-201 is also designed to be SARSAT compatible. SARSAT is an international system of low orbiting satellites used to detect alerts from ELTs and EPIRBs and to determine their location.

## **2.0 INSTALLATION**

Inspect the water soluble tape (A2-05-0081) holding the antenna to the body of the unit to make sure the antenna is held securely. Replace the water soluble tape if necessary.

NOTE: Before installing or re-installing an ELT, it should be tested using the procedure described in section 4.1 of this manual.

### **2.1 Raft Pack Installation**

To pack the ELT with a life raft, bend the flexible antenna downward so that it lays flat against the body of the unit (see Figure 1). The unit is then ready to be packed.

### **2.2 Mounting Bracket Installation**

The ELT-201 may be installed into existing ELT brackets or into an optional ACR mounting bracket (ACR Part No. A3-06-1698). (To install the ELT into the mounting bracket, bend the antenna downward so that it lays flat against the body of the unit (see Figure 2). While holding the antenna in this position and the unit upright, insert the unit into the mounting bracket clamp (see Figure 2). Secure the ELT to the mounting bracket by pressing down on the clamp latch.

## **3.0 OPERATION**

### **3.1 Deployment at sea**

To operate the ELT in water:

- 1) Remove the unit from raft pack or bracket and allow the antenna to extend fully upright (see Figure 1).
- 2) Remove the protective tape surrounding the lanyard.
- 3) Grasp free end of lanyard and partially unravel.
- 4) Tie free end of lanyard to life raft or person.
- 5) Release unit into the water.
- 6) Red light at top of unit will flash, indicating proper operation.

NOTE: To cease operation of the ELT, remove the unit from the water and dry off the bottom cover with cloth or paper.

### **3.2 Deployment on land**

To operate the ELT on land:

- 1) Remove the unit from raft pack or bracket and allow the antenna to extend fully upright (see Figure 1).
- 2) Remove the protective tape surrounding the lanyard.
- 3) Grasp free end of lanyard and partially unravel to release plastic bag.
- 4) Place lower half of unit in plastic bag.
- 5) Fill plastic bag with water.\*
- 6) Red light at top of unit will flash indicating proper operation.

\* NOTE: Any water based liquid may be used to fill the bag, such as coffee or any beverage, denatured alcohol, urine, etc. Oil based liquids such as hydraulic fluids are generally not suitable since they do not conduct electricity.

To assure optimum performance of the ELT, the lower third of the unit should be kept submerged. However, satisfactory operation can usually be achieved with as little as 1/2" of water in the plastic bag. The flashing red light will indicate whether or not satisfactory operation has been achieved.

The ELT should be located in a clear area away from trees, boulders, or other large objects. The ELT may be carried when operating, however the unit should be held high enough so that the entire length of the flexible antenna is above the carrier's head and clear of any other obstructions.

To cease operation of the ELT, remove the unit from the plastic bag and dry off the bottom cover with cloth or paper.

## **4.0 MAINTENANCE**

### **4.1 Testing**

CAUTION: FCC regulations require that ELT testing be performed in an RF shielded room. Testing outside of a shielded room may only be performed during the first five minutes of each hour, and then only for a maximum duration of three audio sweeps (equivalent to one flash of the red indicator light).

The ELT should be tested periodically for proper operation. An ELT should always be tested prior to installation or re-installation. Periodic testing will help to assure that the ELT will function optimally and reliably in the event of an emergency.

To properly test the ELT, a receiver capable of tuning to the international distress frequencies (121.5 and 243 MHz) is required. The ELT does possess a self test feature which monitors the signal at the antenna terminal. The red indicator light will flash only if the proper signal is detected. However, no self test can be 100% complete. The only way to completely guarantee that the unit is fully functional is to monitor the ELT signal on an independent piece of equipment.

If the test receiver has an antenna that is not detachable, the test receiver should be located just outside of the RF shielded room. If open air testing is attempted, the receiver should be located at least 100 meters away from the ELT under test. If the receiver has a detachable antenna, an alternative method is to disconnect the receiver's antenna and locate the receiver in close proximity (less than 1 meter) to the ELT under test.

To test the ELT:

- 1) Set up the receiver as described in the paragraph above. Tune the receiver to 121.5 MHz.
- 2) Pour approximately 1/2" of water into a dish or pan and place the ELT upright into the water so that the bottom of the unit is immersed.
- 3) Check to see that red indicator light is flashing approximately once per second.
- 4) Listen for distress signal coming from receiver.
- 5) Tune receiver to 243 MHz and again listen for distress signal.
- 6) The ELT is fully functional if and only if distress signals are heard at both 121.5 and 243 MHz and the red indicator light flashes without interruption.

If the conditions specified in step 6 are not met, send or bring the unit to an authorized ACR service center for further testing and repair.

### **4.2 Visual Inspection**

In addition to functional testing, the ELT should also be periodically inspected for physical damage. Physical damage may compromise the reliability of the unit even if it appears to be fully functional. When inspecting the unit for damage, pay particular attention to the following:

- 1) Check the flexible antenna for creases, cracks or holes in the vinyl, and any other damage.
- 2) Bend the antenna downward so that it lays flat against the body of the ELT. Release the antenna. The antenna should return to its normal upright position with no assistance.
- 3) Check the top cap for cracks, dents, or other damage. Ensure that the lower rim of the top cap rests squarely on the body of the unit over its entire circumference
- 4) Check the body of the unit for cracks or other damage.
- 5) Check the bottom cap for cracks, dents or other damage. Ensure that it is squarely in contact with the body of the unit over its entire circumference. Check the bottom contacts for corrosion or other damage.

If any physical damage is observed, have the unit inspected at an ACR authorized service center.

### **4.3 Battery Replacement**

The ELT battery assembly should be replaced before the battery expiration date has passed. The battery expiration date is clearly marked on the ELT label near the bottom of the unit. This date is five years after the manufacture date, which is also marked.

The ELT battery assembly must also be replaced after the unit has been used in an emergency or otherwise operated for an extended period of time.

Battery replacement may only be performed at ACR Electronics, Inc. or Authorized Battery Replacement Center (BRC) call toll free +1(800) 432-0227 for list of BRC.

The following instructions are for Battery Replacement Centers ONLY. Any unauthorized service will void the warranty.

To replace the ELT battery, obtain a replacement battery assembly, ACR P/N A3-06-2165, and a 1/8" hex key wrench. Proceed as follows (refer to Figure 1):

- 1) Remove reflective tape, then remove the three set screws near the top of the body of the ELT using the hex key wrench. Retain these screws for later use.
- 2) Grip the top cap (i.e. transmitter module) firmly using a cloth for increased friction. Grip the body (i.e., battery module) of the ELT firmly with the other hand.
- 3) Twist the top cap back and forth while pulling apart the top cap and body. Continue until the first o-ring around the top cap is exposed.
- 4) After the first o-ring has been exposed, carefully pull the top cap and body apart.
- 5) Remove the foam cushion surrounding the connector side of the circuit board by pulling it down away from the top cap.
- 6) Disengage the connectors on the bottom of the electronics assembly attached to the top cap, thus separating the transmitter module from the case assembly.
- 7) Remove foam cushions and remove battery by pulling on the lanyard. The used battery should be disposed of properly

- 8) Install new battery into the case.
- 9) Replace cushions and reconnect the two (2) connectors to electronics assembly.
- 10) Insert electronics assembly into its case.
- 11) With the unit standing upright, press firmly on the top cap until its lower lip is firmly in contact with the top of the case assembly. Ensure that the lower lip of the top cap is in contact with the case assembly around its entire circumference.
- 12) Insert the three set screws into the holes at the top of the battery module. Tighten set screws with hex key wrench, and cover screws with the new reflective tape.  
**Caution: Do not use excessive force when tightening set screws.**
- 13) Test the unit in accordance with the procedure of Section 4.1 of this manual.
- 14) Redate replacement date to five (5) years hence.
- 15) Unit is now ready for repacking/re-installation.

## 5.0 TECHNICAL SPECIFICATIONS

Frequencies	121.5 MHz and 243 MHz
Frequency Stability	±.005% (crystal controlled)
Emissions	Type A3X
Modulation	Downward swept tone between 1400 Hz and 400 Hz at 3 Hz rate
Operating Temperature	0°C to +55°C
Operating Life	50 hours minimum
Activation	Water activated when manually deployed in water
Size	Length 23" exclusive of 19" flex antenna
Diameter	2 3/4"
Weight	4.69 lbs.
Environmental Categories	Per FAA TSO-C91a for Survival ELT (S)
Accessories (optional)	Bulkhead Mounting Bracket, ACR P/N A3-06-1698
Battery	Magnesium/Magnese Dioxide, 11.5V Shelf life - 10 years Replacement Interval - 5 years

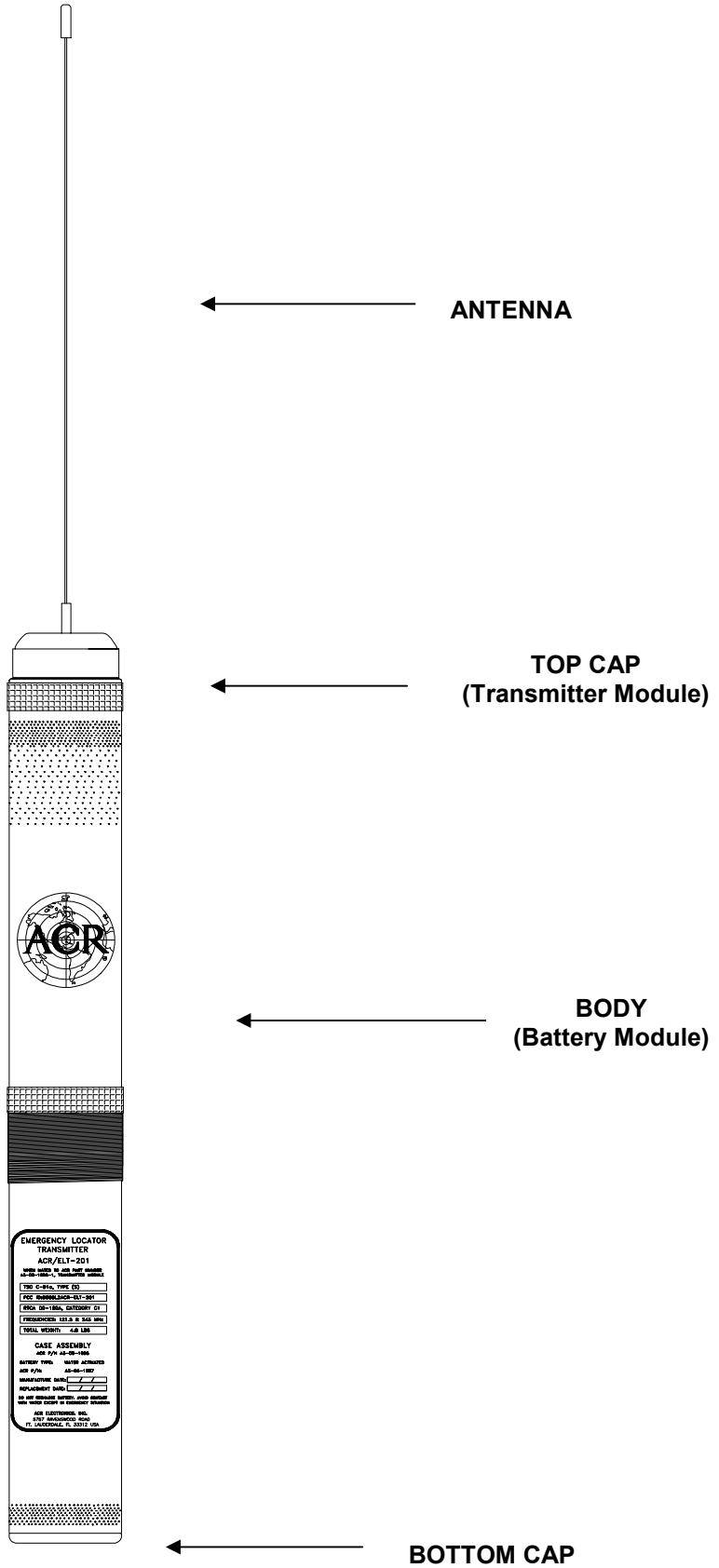


Figure 1  
ACR / ELT-201

