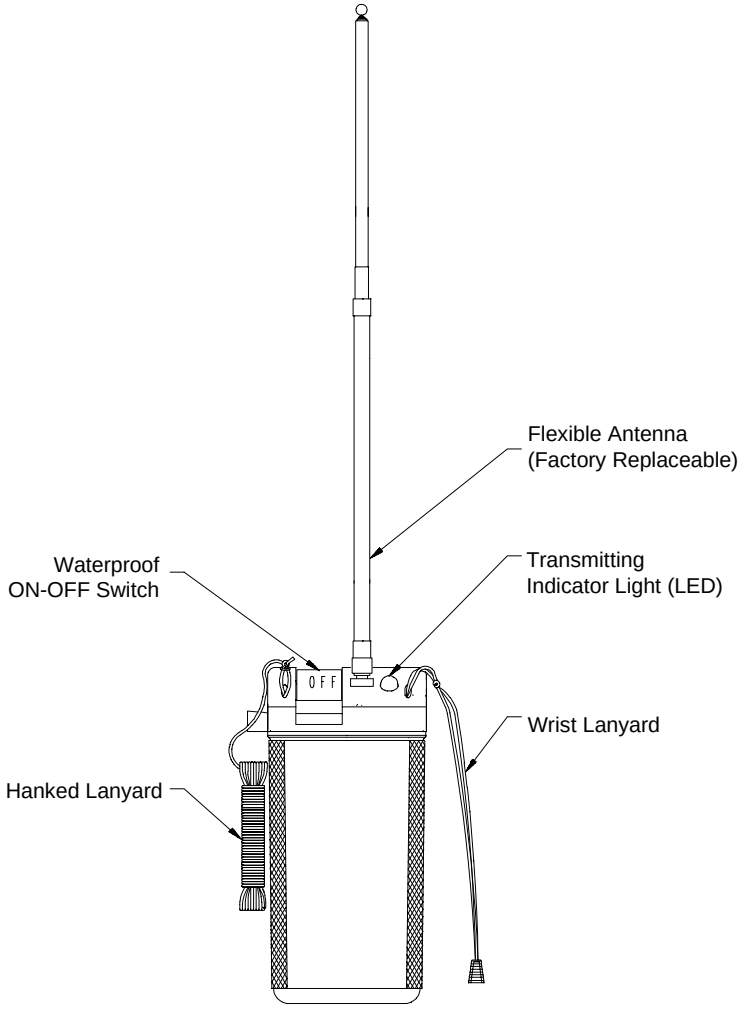


Figure 1: ACR MINI B_{300}™ EPIRB

SECTION 1 — INTRODUCTION

1.1 General

This manual provides installation, operation and maintenance instructions for the **ACR/MINI B_{300}™** Emergency Position Indicating Radio Beacon (EPIRB), hereinafter referred to as the Beacon. This section describes the characteristics and details of the Beacon (See Figure 1). A Cognizant Authority Station License may be required to carry this unit. The Beacon comes with a user replaceable 6 volt Lithium, Duracell DL223A, (or equivalent) battery. See installation instructions page 5.

1.2 Purpose

The Beacon is an item of survival equipment and is designed to be carried on a person or aboard vessels at sea and in port, so as to be readily available in any emergency. It may be used on the deck of vessels, on survival craft, or may be attached to the latter with the provided lanyard, as well as attached to survival suits, etc. When turned "ON", it transmits tone modulated signals (VHF) so that rescue aircraft or vessels equipped with suitable direction finding receiving equipment can "home" to the transmitting unit. This Beacon meets FCC Rules for improved satellite detection.

1.3 Satellite Detection

EPIRB use is directly affected by the COSPAS-SARSAT System. SARSAT is an acronym for Search and Rescue Satellite-Aided Tracking. This international system has proven that satellites can be used to detect distress alerts and to determine position from 121.5 MHz and 406 MHz EPIRBs.

COSPAS-SARSAT frequently plays a key role in many operational Search and Rescue decisions. Since the first recorded rescue in 1982, over 3,000 persons have been rescued as a direct result of SARSAT. These successes have brought more public awareness and an expanding growth in the use of EPIRBs.

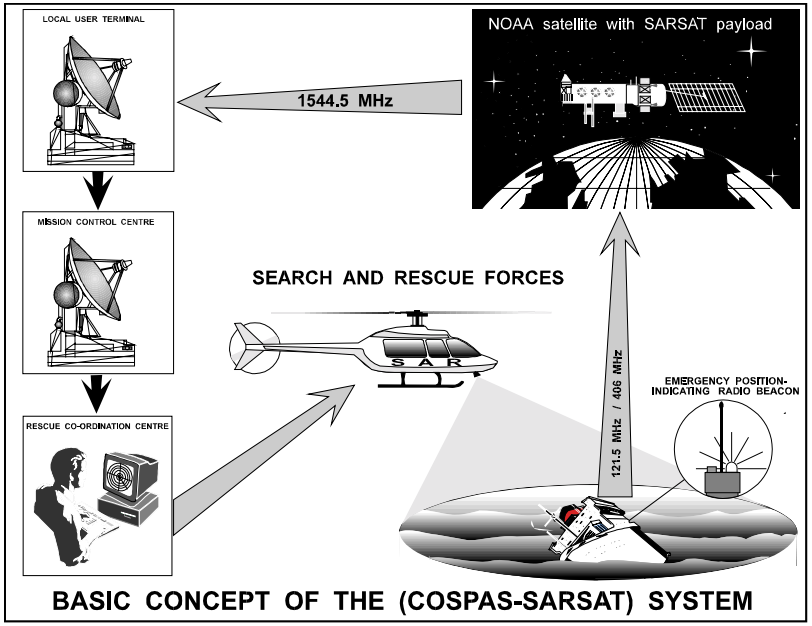
Figure 2: Satellite Detection

1.4 Authorizations

The **ACR/MINI B$_{300}$™** Emergency Position Indicating Radio Beacon meets the requirements of the European Telecommunications Standards Institute, ETS 300 152, for Marine use.

1.5 Characteristics

The **ACR/MINI B$_{300}$™** Beacon is an o-ring sealed battery operated unit. The Beacon case, with its external antenna is waterproof. The semiconductor circuits are mounted within the case assembly, which also contains the battery power supply. An “ON-OFF” switch is installed on top of the Beacon, along with a light emitting diode (LED) operation indicator. The Beacon may be carried on a person, stowed in any convenient place, mounted in a special bracket aboard a vessel, or tied with its lanyard inside survival craft. The unit floats and is completely waterproof.



1.6 Technical Data

Pertinent technical data is listed below:

ITEM	CHARACTERISTICS
Frequency	121.5 MHz
Power Output	Minimum 75 mW during 24 hours operation
Operating Life	24 hours minimum at -10°C, (-14°F) longer in temperate climates
Battery	Lithium, 6 volt Duracell DL223A, (or equivalent). *Sold with Beacon.* Rated replacement life: 10 years.
Emission	Type A3X
Modulation	Downward sweeping tone between 1600 and 300 Hz at 2 to 4 sweeps per second
Frequency Stability	± 3.5 kHz (Crystal controlled)
Operating Temperatures	-20°C to +55°C (-14°F to +131°F)
Activation	Manual “ON-OFF” switch
Size	127mm x 66mm x 41mm (5.0"H x 2.6"W x 1.6"D) excluding antenna
Weight	215 g (7.6 ounces)
Attachments	Lanyards, Hanked and Wrist

SECTION 2 — INSTALLATION

2.1 General

The **ACR/MINI B$_{300}^{M}$** Beacon has been designed for multi-purpose installation for survival use, personnel, rafts, floats and survival craft. It should be carried with you or stowed where it will be readily available in an emergency.

2.2 Battery Installation

1. Remove four (4) screws holding the top cap of the Beacon to the case. Use a no. 2 Phillips screwdriver. Remove top cap and PC board from bottom case being careful not to disturb any electronic components on the PC board.
2. Remove old battery and place new battery in battery clip with groove side of battery down and flat side of battery up. Caution: Make sure flat side of battery is up. Otherwise, the polarity of the battery would be reversed and damage to the battery will occur. The battery also poses a possible fire, explosion, or burn hazard when placed in the battery clip upside down. A semiconductor diode protects the electronics from damage due to battery reversal.
3. Put the battery expiration date on the flat side of the battery and on the EPIRB case with ACR part no. A1-20-0857 or equivalent permanent shield label.
4. Grease the top cap o-ring with Dow Corning number 4 Silicone Grease, ACR Part no. A2-09-0069.
5. Replace the four (4) screws holding the top cap to the bottom case of the Beacon. Make sure screws are tight but do not use excessive torque which could strip the threads in the top cap.

2.3 Battery Date Code

A typical Duracell DL223A battery has a date code of 6J1313. The first alphanumeric character of the code is always a number representing the last digit of the year of manufacture. The second alphanumeric character of the code is always a letter, the position of which in the alphabet represents the number of the month of manufacture. That is: A represents January, B represents February, C represents March, etc.

The next two alphanumeric characters of the code represent the day of the month of manufacture. Therefore, the date of manufacture for the date code 6J1313 is October 13, 1996.

2.4 Battery Expiry Date

The battery Expiry Date is obtained by adding the battery manufacturers rated replacement life of 10 years to the date of manufacture. For example, a date code of 6J1313 would have a Battery Expiry Date of October 13, 2006.

SECTION 3 — OPERATION

3.1 General

The EPIRB is designed to operate best when placed on a flat non-conductive surface or while over water at sea. It should be operated in an area free of obstructions which could absorb RF energy and limit radiation patterns.

Position the antenna straight up (perpendicular to ground) and not pointing toward the receiving station. Note that the radiation field null occurs directly off the end of the antenna.

Maintain a visual path where possible between the Beacon and the receiver, since beacons characteristically transmit “line of sight”.

The Beacon transmits on 121.5 MHz.

3.2 Manual Deployment

Remove the Beacon from its storage position and ensure that the antenna telescoping section is fully extended and that the antenna is in an upright position. Break and remove the flip switch seal. Flip the switch to the “ON” position. Red LED indicator will illuminate. The LED indicator will remain on for 5 seconds indicating that the batteries are functional. After 5 seconds, the LED indicator will begin flashing, indicating that the transmitter is functioning properly. If operated from the deck of the vessel, choose the most advantageous position free of surrounding obstacles. If deployed in water, make sure that the antenna is positioned vertically and the antenna itself is out of the water. It is preferable to hold the unit above the water, as immersion reduces effectiveness.

SECTION 4 — MAINTENANCE

4.1 General

The Beacon has been designed for use with a minimum of maintenance required. A check list is given in this section, and when accomplished periodically, should help to assure emergency operation and extended life use.

4.2 Battery Check

1. The battery expiry date should always be placed on the battery and the outside of the Beacon case. See 2.2 Battery Installation. Replace the battery immediately after extended use or emergency and always on or before the battery expiry date. Use only a 6 volt Lithium Duracell DL223A (or equivalent) battery.
2. Safety Precautions:

   Warning: To avoid possible fire, explosion, leakage or burn hazard, do not open, recharge, disassemble, heat above 71°C (160°F) or incinerate.

4.3 Inspection Check

The following checks should be made during the periodic servicing:

1. Check the antenna tip and telescoping sections for any signs of damage or corrosion.
2. Check the plastic covered portion of the antenna for any signs of chafing, wear, cracks, or other damage, and signs of resultant corrosion beneath the covering.
3. Check the antenna socket at the cap surface for any sign of looseness or corrosion.
4. Check the Beacon housing for signs of damage or mishandling. Dents, or damage to the top end could result in an operational malfunction during an emergency.
5. Check the lanyards for chafing, fraying or any damage. Check the lanyard anchor points for chafing. Resecure the lanyards and check the knots for tightness.
6. Rinse the outside of the unit with fresh water frequently to remove any salt build-up on case or exposed parts.

TABLE OF CONTENTS

Foreword:

Congratulations and thank you! You have just purchased the finest personal locator EPIRB available on the market. Other brands merely attempt to meet the requirements established by government regulatory agencies. ACR designed its Mini B300 to work in real life situations and to save lives. It, therefore, exceeds many of the requirements established by authorities. By purchasing this EPIRB you have distinguished yourself as one of the safest persons in boating.

To be a responsible EPIRB owner:

- Read this manual.
- Activate your EPIRB **ONLY** in an emergency.
- Mount your EPIRB in an easily accessible spot or store it in your ditch/emergency kit.
- Prepare an emergency evacuation plan and rehearse it.
- In a grave and imminent situation, where you have exhausted all other means of rescue, activate your EPIRB and leave it "On" until Search And Rescue forces arrive. Do not turn it off and on in the misguided belief that you are saving battery power.
- **NEVER** set off a false alarm.

Search And Rescue forces will respond to all known emergencies. This EPIRB will alert the authorities to an emergency if activated in most coastal waters, (excluding parts of Africa and Antarctica). SAR reports indicate that 99% of all class A & B EPIRB activations are false. The high number of false activation events places an unnecessary burden on the search and rescue system. Don't be guilty of causing a false or accidental activation. Help educate others that irresponsible handling of EPIRBs risks lives by slowing the response to real emergencies and wastes tax payer dollars. Please call or write for answers to questions or for information on other safety products manufactured by ACR Electronics, Inc.

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