

### Registration in Canada

Canadian residents can register online at:

<http://canadianbeaconregistry.forces.gc.ca/> or contact the Canadian Beacon Registry by phone at: 877-406-7671 or by fax at: 877-406-3298. Canadian registration forms can also be mailed to:

**Canadian Beacon Registry  
CFB Trenton, PO Box 1000 Stn Forces  
Astra, Ontario K0K 3W0**

### Registration in Other Countries

In countries other than the United States and Canada, 406 MHz beacons are registered with that country's national authority at the time of purchase. The sales agent may have assisted you in filling out the forms and sending them to the country's national authority. Alternatively, many countries allow online registration in the International 406 MHz Beacon Registration Database (IBRD) at [www.406registration.com](http://www.406registration.com).

To verify that the unit is properly programmed for your country, view the UIN label on the back of the unit. In the event that the beacon is not programmed for your country, the sales agent (if properly equipped) can reprogram the unit for the correct country.

## **STEP TWO - HOW THE BEACON WORKS**

**NOTE:** Please be aware that, throughout your user manual, reference is made to the beacon 'BEEPING'. Please note that the 'beeps' are of a very high pitched tone that some people are unable to hear. Be aware that the beeps are not the indication of a fully functional beacon but only a guidance to Technicians and Engineers to troubleshoot the unit.

### **1. How your beacon summons help**

406 MHz beacons are a type of portable emergency equipment that transmits a distress signal to search and rescue (SAR) organizations. The purpose of these beacons is to aid SAR teams in tracking and locating ships or individuals in jeopardy as rapidly as possible.

The 406 MHz frequency is a worldwide dedicated emergency frequency that is detected by a network of satellites called the Cospas-Sarsat system. This satellite system was established by, and continues to be supported by, its primary benefactors - the USA, Russia, Canada and France. The Cospas-Sarsat system has saved over 28,400 lives - and counting - since its inception. See Appendix or the Cospas-Sarsat website for more information about the system at [www.cospas-sarsat.org](http://www.cospas-sarsat.org).

When a 406 MHz beacon is activated, the digital distress message is sent to Cospas-Sarsat satellites and, in turn, the distress message is relayed to SAR. The distress message contains the beacon UIN and on some models the GPS location of the beacon. Additional information about the beacon is accessed by SAR from the beacon registration database. At the same time the 406 MHz signal is activated, a 121.5 MHz signal is turned on. The 121.5 MHz signal is used by SAR to home in on the beacon as they approach it.

The 406 MHz signal is detected by multiple satellites and from that information the location of the beacon can be calculated. This data alone is sufficient for SAR to find persons or ships in distress in a reasonable timeframe. However, as a further enhancement, some beacons have a GPS engine onboard. This feature allows the beacon to acquire current location coordinates from an internal GPS receiver. The purpose of this feature is to send an even more precise location of the beacon to the satellites, i.e., latitude and longitude data. This helps SAR to reach the location even faster.

## **2. Internal GPS position system**

The PLB-350C is fitted with an internal GPS receiver that will download the coordinates (latitude and longitude) of the beacon's position on the globe, to be transmitted to the Cospas-Sarsat emergency system.

When the beacon is activated, the internal GPS immediately attempts to acquire positional coordinates. GPS coordinates can be acquired any time that the GPS is on, but only valid data is saved. Once the beacon acquires valid coordinates, the data is included as part of the next transmitted 406 MHz digital message.

The internal GPS operates on a schedule during a beacon activation. The GPS is on for a time, actively acquiring coordinates, and off for 20 minutes, in a standby state. The schedule is designed to conserve battery but, at the same time, assure that navigational coordinates are regularly updated.

## **3. Optional beacon management and testing services**

Additional features and through satellite testing services are available for this beacon when you subscribe to the SafeLife System. When you sign up for this optional service you can test your beacon and have confirmation messages sent to your cell phone or email. Expanded services also will include friends and family contact information for check in messaging. Visit [406Link.com](http://406Link.com) for complete details. (This service is not required for your beacon to function as a Personal Locator Beacon.)

#### 4. Anatomy of your beacon

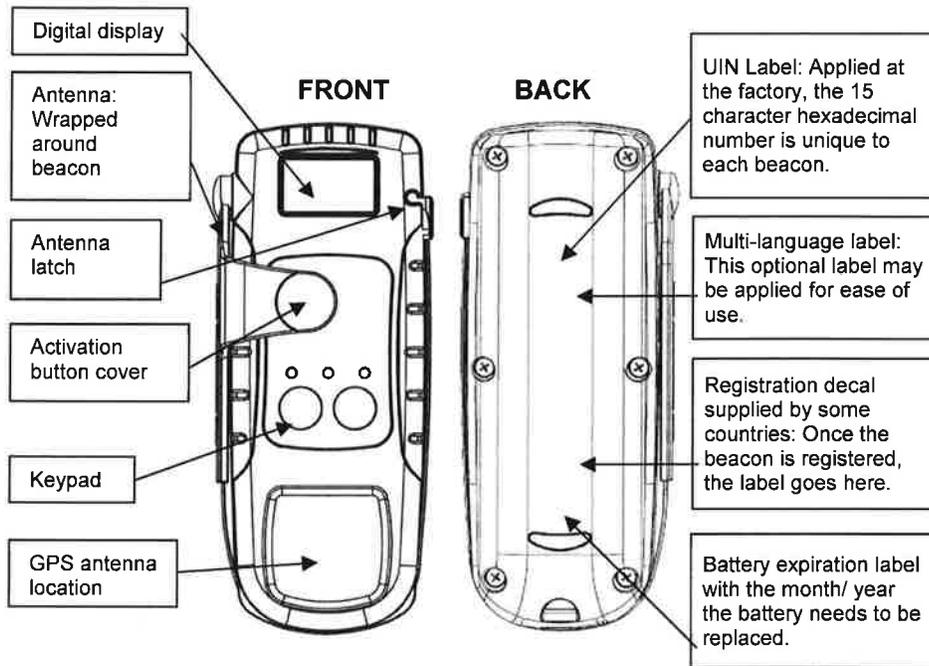


Figure 1

**NOTE:** The appearance of your beacon may vary from this picture.

## 5. Distinguishing PLB Features

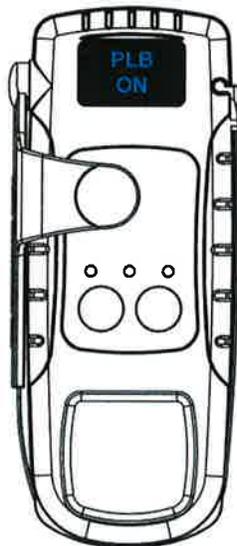
The distinguishing features available on your PLB vary with the particular model that you selected. The following table summarizes the similarities and differences in models.

PLB-350C		
<b>Product names</b>	AquaLink™View 406 GPS PLB	SARLink™ View 406 GPS PLB
<b>ACR Product Number</b>	2884	2885
<b>Unique features</b>	Digital display, LED strobe, 60 GPS acquisition tests	
<b>GPS engine</b>	Internal, 66-channel GPS receiver	
<b>Top case</b>	Clear	
<b>Buoyant</b>	Yes	No
<b>Included Accessories</b>	Multi-Function Belt Clip	
<b>Optional Accessories</b>	Flotation pouch (ACR P/N 9504)	

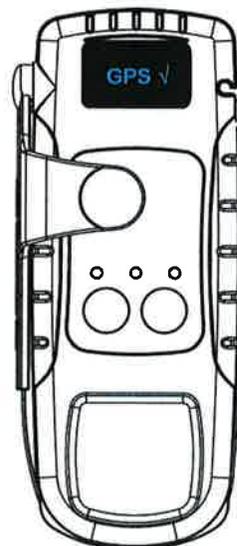
## 6. Digital Display

The digital display in the beacon is used as a secondary visual aid, supporting the green/red LED and the audio tone, which indicate the status of the beacon during testing and during emergency operation.

The messages on the digital display typically appear as one or two words at a time, until the entire message has been displayed.



When the beacon is activated, the display will show the message PLB ON. The beacon will begin to send 406 MHz emergency signal bursts, at which time the display provides other messages including 406 SENT, 121.5 ON and GPS coordinates, provided the data was acquired. If GPS data has not been successfully downloaded into the beacon, the digital display will give you tips like "GIVE CLEAR VIEW TO SKY."



In Self-Test, the display illustrates the test result of each step with "√" indicating a pass and "X" indicating a failure. There are a total of five tests, including a battery check. If all tests pass, SELF-TEST PASS will be displayed at the end of the Self-Test mode. In the GNSS Self Test mode, the digital display will show the letters "GPS Test" moving left to right while the internal GPS receiver is acquiring the coordinate data. Once the data is acquired, the coordinates will display as a confirmation that the data was successfully acquired. This will be followed by the GPS coordinates horizontally scrolling through the display, provided the beacon has successfully downloaded an external GPS location. See Appendixes B through E for details about display messages.

## 7. Activating your beacon

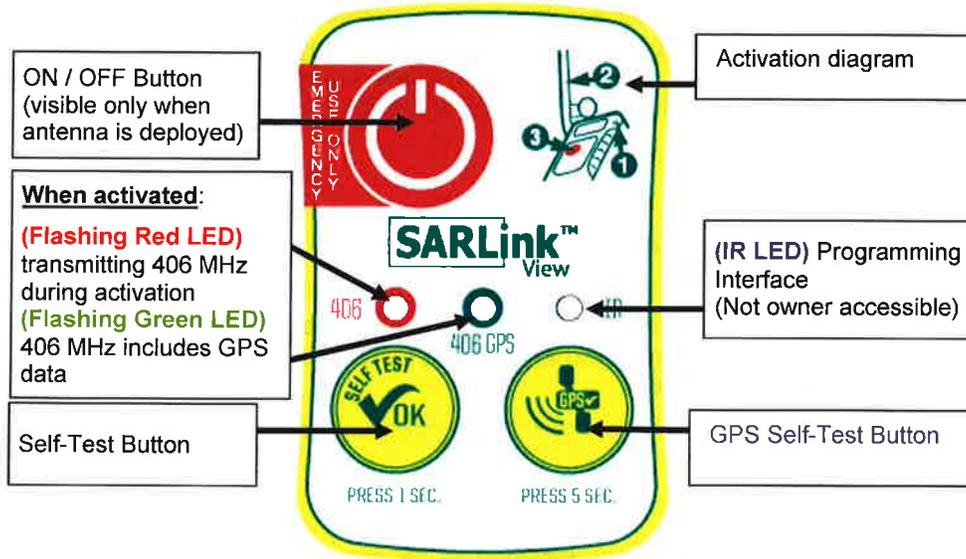


**Warning:** This transmitter is authorized for use only during situations of grave and imminent danger. Deliberate misuse may incur a severe penalty.

### Overview

Personal Locator Beacons are designed to be manually activated. They are only to be activated when all other means of self-rescue have been exhausted. When properly registered as required, the activation of the beacon tells Search and Rescue who you are, where you are, and that you are facing a life threatening situation.

**NOTE:** The appearance of your key pad may vary from this picture.



**PLB-350C**

**Figure 2 - Key Pad Functions**

**NOTE:** If you notice the PLB is flashing the red or green LED and “beeping” periodically on its own, this likely means it has accidentally been activated and needs to be shut off and reported as a false alert see section on false alerts.

### **Steps to activate (406 MHz and 121.5 MHz)**

To activate your beacon in a distress situation, follow these steps (see Figure 3 below).

- 1) Unclip the antenna from the case.
- 2) Move it into the upright position
- 3) Depress the ON/OFF (🔴) button for 1 full second.

You will see the Red LED flashing and the display reads "PLB ON". Your beacon is now activated. While transmitting your distress signal, the red LED will flash once every 2 seconds, alerting you that your beacon is active.

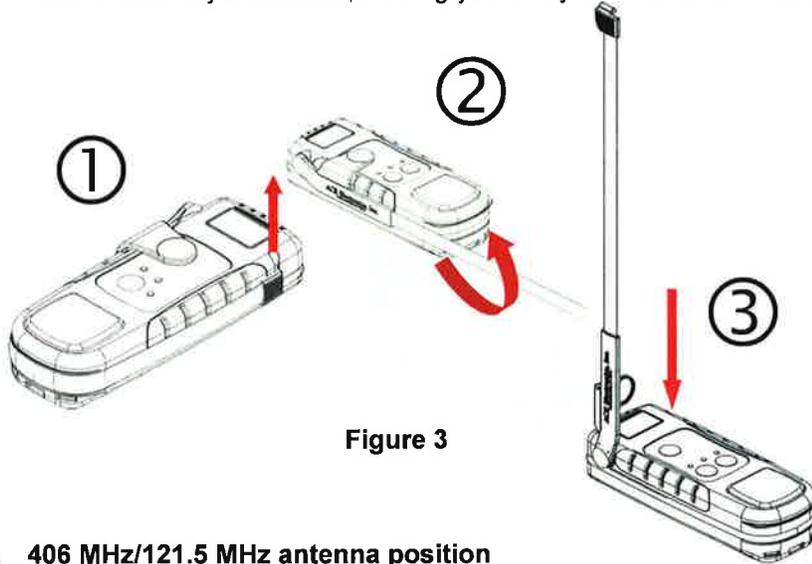


Figure 3

### **8. 406 MHz/121.5 MHz antenna position**

For maximum performance you must deploy the beacon antenna into the proper position as shown in Figure 3. If at all possible, be sure the antenna is positioned facing the sky and avoid submerging in water. This device is intended to operate on or above the ground or while attached to your person **above the water line.**

### **9. Activation with GPS**

If your unit is activated, the GPS receiver will start up, search to find your LAT/LON and incorporate it into your 406 MHz signal. As soon as the GPS receiver acquires valid positioning data, the red LED will stop blinking and the green LED will begin flashing once every 2 seconds.

The same GPS data will be sent with each 406 MHz signal for the next twenty minutes. At that time the internal GPS will start up again, search to find your LAT/LON and incorporate it into your next 406 MHz signal. If for any reason the internal GPS cannot update your LAT/LON, your last position will be used for the next four hours. At that time the green LED will stop blinking and the red LED will flash once every 2 seconds until new GPS data is obtained.

#### 10. GPS receiver orientation

When activated, it is critical that you do not cover the beacon with any body part, water, clothing, etc. The GPS receiver is located under the bottom portion of the case behind the ACR Electronics' logo (see Figure 4).

To ensure optimum performance of the GPS receiver, the beacon needs to have an unobstructed view of the sky. Avoid submerging the GPS receiver in water if possible. Water will shield and inhibit the GPS receiver and may cause difficulties obtaining your GPS coordinates. Avoid leaning over the beacon to view blinking LED as you may shield the GPS reception.



Figure 4 – GPS Receiver Location

#### 11. Turning off the beacon

To deactivate your beacon; depress the ON/OFF (🔴) button for more than 4 seconds. Once the beacon is deactivated, all blinking LED's will stop, signifying that the beacon is no longer sending your distress message.

If deactivation should fail, remove the six screws holding the unit together and unplug the battery to disable the unit. Return the beacon to ACR Electronics for service.

**NOTE:** Leave beacon on until rescued. Turning beacon off will prolong or prevent rescue. Repeated activations could be viewed as a hoax.

## Care and Maintenance of 406 EPIRBs

Since August 1991, commercial fishing vessels with galley and berthing spaces that operate beyond three miles from shore, have been required to have category 1, 406 MHz Emergency Position Indicating Radio Beacons (EPIRBs).

Category 1, 406 EPIRBs, though much more expensive than the old Class A EPIRBs, provide superior reliability, signal strength, location accuracy and provide much more detailed information to search and rescue agencies. There are several steps to take to ensure your EPIRB will work when you need it.

### Registration

Send in the EPIRB registration and identification card! It asks questions about you and your vessel that will aid search and rescue agencies in finding you in an emergency. It will also allow them to contact you without sending out an expensive search should your call be a false alarm.

### Instructions

Read the instructions for mounting and operation of your EPIRB carefully! EPIRBs do not come shipped in the ON position. It is important to learn the correct switch position for arming the EPIRB after it is installed.

### Location

Mount your EPIRB in a location that will allow it to float free if the boat should sink and where icing will be minimal. Avoid locating it under an overhang or anywhere it could get hung up.

### Test

Test your EPIRB once per month. 406 EPIRBs have an electronic self-check. Make sure that you follow the testing procedures in your manual. Test in the first five minutes of any hour. All EPIRB tests should be noted in your log book.

### Check for Damage

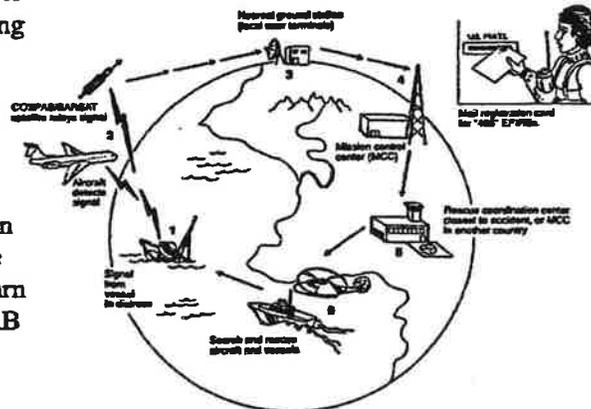
Check your EPIRB during rough sea conditions to make sure it has not been activated or damaged.

### Show and Tell

Show all crewmembers and passengers on your vessel how the EPIRB operates before you get underway. This should be a part of your drills and instructions.

### Maintenance Schedule

Although your EPIRB battery may be good for two to five years, many of the hydrostatic releases mechanisms need to be replaced every two years. Check the maintenance schedule on the release for your EPIRB.



PLB will float but needs to be held upright

