



Government  
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National Search  
and Rescue  
Secretariat

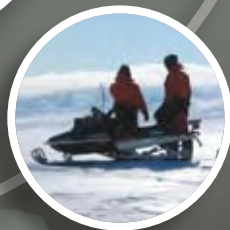
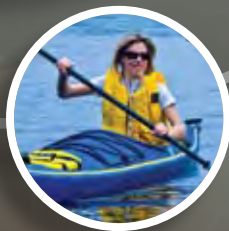
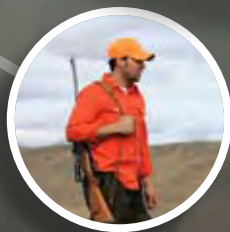
Gouvernement  
du Canada

Secrétariat national  
Recherche et  
sauvetage



# Personal Locator Beacons

A Lifeline to Survival



[www.nss-snrs.gc.ca](http://www.nss-snrs.gc.ca)

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CS09-0506



## Personal Locator Beacon

**Imagine:** You're hiking in the Rockies, doing geological surveying in the Northwest Territories, kayaking along a secluded shoreline of Lake Superior, or caribou hunting in northern Quebec. Suddenly you find yourself in grave danger, but without cellular telephone coverage. How would you call for help? A 406 MHz personal locator beacon (PLB) might be the answer. It can rapidly alert search and rescue (SAR) authorities that you're in distress and in need of assistance. With a distress call from a properly-registered PLB, SAR authorities will know exactly who you are and where you are, and can dispatch local SAR responders to your location.



## What is a PLB?

A 406 MHz PLB is a light weight, portable, battery-powered emergency radio transmitter that sends a uniquely-coded digital distress signal to SAR authorities from anywhere in the world. Unlike a cellular telephone or a hand-held radio, a PLB is specifically designed as an emergency signalling device of last resort. It is purpose-built to withstand extremes of weather (cold, heat, humidity); to float on its own or with an attachment; and to sustain moderately rough handling. Most PLBs on the market today can fit into the palm of your

### KEY FEATURES

✓	5 Watt digital distress signal on 406 MHz
✓	International, global coverage of primary 406 MHz signal
✓	Equipped with a secondary homing frequency on 121.5 MHz
✓	Designed to be rugged and withstand exposure to weather
✓	Option to transmit GPS coordinates (most models)
✓	Uniquely registered to the user
✓	No paid subscription or system access fee required

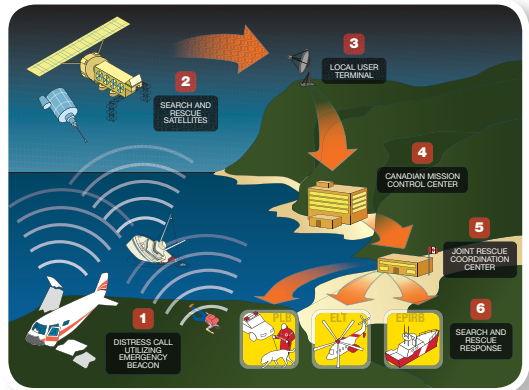
hand and can be easily affixed to personal gear, such as backpacks, lifejackets, or hunting vests. After the initial purchase or rental charge, there is no ongoing subscription or system access fee for search and rescue satellite coverage.

## How does a PLB work?

**PLBs are manually activated using a simple two-step process\*, which helps prevent accidental activations.**

*\* Consult manufacturer for specific instructions.*

Once activated, a 406 MHz PLB sends a digitally encoded signal indicating that an emergency exists. Orbiting COSPAS-SARSAT search and rescue satellites, which have global coverage, receive and relay the distress signal to a ground receiving station. The location information is computed and transmitted to the Canadian Mission Control Centre (CMCC) in Trenton, Ontario. This whole process is automated, and it takes only a few minutes for the initial alert to reach the CMCC. After cross-referencing the PLB's unique code with the Canadian Beacon Registry, the CMCC passes the alert and the registry information to the appropriate provincial/territorial SAR authority. The CMCC will also receive alerts generated by Canadian-registered PLBs activated outside the country, which provides Canadian authorities with the opportunity to monitor the local search and rescue response, if necessary.



**Distress signal relayed through COSPAS-SARSAT satellites to Canadian SAR authorities.**

Many PLBs are also equipped with an onboard global positioning system (GPS) receiver that adds the GPS location data to the distress signal. This additional location information helps to take the “search” out of “search and rescue”.

In order to guide rescuers to your location, PLBs also transmit a continuous analog radio signal on 121.5 MHz, the international distress frequency. Homing in on this signal can help rescuers pinpoint your location, even if visibility is obscured due to darkness, fog, blowing snow, or tree cover.

At the end of a PLB's useful life, it is vital that it be disposed of safely to prevent accidental activations.

For more information about the international satellite system for search and rescue, COSPAS-SARSAT, visit [www.cospas-sarsat.org](http://www.cospas-sarsat.org).



## Who should use a PLB?

A PLB must only be used in a distress situation, where conventional means of communication – such as cellular or land-line telephones – are not available. If your recreational or work activities are of a higher risk, or take you into remote areas where communication options are limited, you should consider carrying a PLB.



While many backcountry users and remote workers include PLBs as part of their safety kits, aviators and mariners are also carrying PLBs as emergency alerting devices. Sometimes these PLBs are marketed to pilots and mariners as “Survival ELTs” or “Survival EPIRBs”. It is

important for pilots to note, however, that unlike aircraft emergency locator transmitters (ELTs), PLBs will not activate automatically in the event of a crash. Mariners should also be aware that PLBs will not activate on contact with water, unlike many Emergency Position-Indicating Radio Beacons (EPIRBs) that are specifically designed for marine use. A PLB can only be activated manually, and you must therefore be conscious, alert, and within reach to turn it on.

Although carrying a PLB is completely voluntary, you are encouraged to purchase or rent a PLB and include it as part of your overall safety kit.

## The SAR response to PLB alerts

First and foremost, search and rescue is a shared responsibility. Prior to engaging in any activity, particularly one that involves travel into remote areas, you should conduct a thorough review of your trip plan\*. This includes planning how you'll navigate, communicate, and take care of yourself and your companions, particularly if an emergency situation arises. First aid supplies and survival gear are essential items, along with training in their use. Organizations such as the Search and Rescue Volunteer Association of Canada ([www.sarvac.ca](http://www.sarvac.ca)) and the AdventureSmart program ([www.adventuresmart.ca](http://www.adventuresmart.ca)) have a lot of helpful information about preparing for outdoor activities.

*\* Be sure to provide a copy of your trip plan to a friend.*

### When you activate your PLB, what kind of SAR response should you expect?

Typically, police forces across Canada (e.g. **Royal Canadian Mounted Police, Ontario Provincial Police, Sûreté du Québec**, etc.) are tasked to respond to SAR incidents after a PLB is activated.

Specially trained ground SAR volunteers may also be called upon to assist. Within the National Parks System, **Parks Canada**

coordinates the response to search and rescue incidents. Any of these jurisdictions may request extra assistance from other search and rescue providers, including the Canadian Forces and Canadian Coast Guard.



Overall, however, the type of response will vary depending upon your location and the search and rescue resources available in the area. You should ensure that you have sufficient equipment and training to sustain yourself and your group until help arrives.

Those who carry PLBs on board aircraft or vessels should therefore confirm that their Canadian Beacon Registry record reflects this special use, to ensure that the appropriate air or marine search and rescue response (i.e. Canadian Forces / Canadian Coast Guard) is dispatched.

## Where can you get a PLB?

A number of sports outfitters and marine shops in Canada sell and/or rent PLBs. It is important to ensure that the 406 MHz PLB is coded for use in Canada, and that you ensure that it is correctly registered with search and rescue authorities – particularly in the case of a rented unit.

## Ensuring that your PLB is coded and approved for use in Canada

Each PLB has a 15-digit Unique Identification Number or UIN. This is sometimes referred to as a “15-digit hex code” or “Beacon ID”, and is printed on the PLB. The 15-digit UIN for a Canadian 406 MHz PLB starts with either 278, 279, A78 or A79. Any other prefix means that the PLB is not coded for Canada. Most foreign-coded PLBs can, however, be reprogrammed for Canadian use. Contact the manufacturer for details on cost and options.

## Why is it important to have a Canadian-coded PLB?

When an alert is received from a Canadian-coded 406 MHz PLB, it is routed automatically to the CMCC in Trenton, Ontario, for onward search and rescue response. An alert from a PLB programmed with another country code will first be sent to that country’s mission control centre to verify the registration information from their beacon registry, even if the PLB is transmitting from within Canada. While the alert will ultimately find its way to the appropriate SAR authority, using a foreign-coded PLB in Canada potentially adds a time-consuming and unnecessary extra step in the rescue process.



Remember that all PLB models offered for sale in Canada must be approved by the National Search and Rescue Secretariat and Industry Canada. A list of certified models can be consulted online at: [www.nss.gc.ca/site/Emergency\\_Beacons/PLB\\_e.asp](http://www.nss.gc.ca/site/Emergency_Beacons/PLB_e.asp).

## How to register your PLB with the Canadian Beacon Registry

As part of the rescue process, when a PLB alert is received, its UIN is verified against the Canadian Beacon Registry to determine the owner of the beacon. It is therefore important for owners to ensure that their 406 MHz PLB is registered with search and rescue authorities as soon as possible. The information contained in the registry includes the owner's name, emergency contact information and any other pertinent information supplied by the beacon owner.

If a properly-registered PLB is triggered, search and rescue authorities will consult the registry and attempt to contact the owner and his/her emergency contacts. A single phone call can quickly resolve a false alarm, or it can be vital for collecting additional details to better respond to an actual distress. It is therefore important to keep the information contained in the registry up to date. You can do this as many times as you like, but you should review the information at least once a year.

Registration and updates are free, and can be completed in a variety of ways:

- Online (24/7): <http://www.canadianbeaconregistry.forces.gc.ca>;
- Fax: 1-877-406-3298
- Mail: Canadian Beacon Registry, CFB Trenton, PO Box 1000 Stn Forces, Astra, Ontario, K0K 3W0;
- Telephone: 1-877-406-7671, or
- E-mail: [cbr@sarnet.dnd.ca](mailto:cbr@sarnet.dnd.ca)



For more information about PLBs or the Canadian Beacon Registry, visit the National Search and Rescue Secretariat Web site at [www.nss-snrs.gc.ca](http://www.nss-snrs.gc.ca) or call 1-800-727-9414.