

# Personal Locator Beacons use Satellite Technology to Locate Individuals Lost, Injured, or Stranded in the Wilderness

## *Understanding PLBs in less than 30 seconds*



**Personal Locator Beacons (PLBs)** are hand held emergency devices that use satellite technology to **locate individuals lost, injured, or stranded** in the wilderness. When activated, **PLBs send a distress signal** received by SARSAT (Search and Rescue Satellite Aided Tracking) satellites. The distress information including **location coordinates** is then passed to the appropriate **search and rescue organization, all in a matter of minutes.** Search and



Rescue personnel are then dispatched to pick up the person(s) in distress. PLBs may be purchased for around \$299 or **rented for about \$39/week from PLBRentals.com**

## *Understanding PLBs in greater detail*

Personal Locator Beacons (PLBs) are hand held devices weighing less than a pound that are manually activated by an individual or group in distress. When activated, a PLB sends a distress signal to SARSAT (Search and Rescue Satellite Aided Tracking) satellites operated by NOAA. The distress information is then relayed to the AFRCC (Air Force Rescue Coordination Center), from where it is passed on to the local Search and Rescue agency who will then come and pick you up. Whether lost, injured, or stranded, activation of a PLB is like being able to dial 9-1-1 from anywhere on earth.

Included in the distress information passed on to the appropriate search and rescue organization is the location of the distress signal as well as any information the owner/renter of the PLB provided when registering/renting the PLB including a trip plan, special medical requirements, and emergency contact information. With this information in hand, the **search** portion of **search and rescue** is removed and it simply becomes a rescue operation saving valuable time and money.

## **Who can use PLBs?**

PLBs may be used by anyone. PLBs were approved for use by individuals in the U.S. in July of 2003. If you engage in outdoor activities where you could get lost, injured or stranded, a PLB could be the difference between life and death.

PLBs are typically used by people engaging in activities such as hiking and backpacking, camping, mountain climbing, rock climbing, cross-country skiing, heli-skiing, boating, kayaking, rafting, hang gliding, paragliding, ATV and motorcycle riding, mountain biking, snowmobiling, snowboarding, horseback riding, hunting, and flying (pilots). Other uses include driving to destinations where you might get lost or stranded in remote areas or when traveling outside of the country.

## **Where can I get a PLB and how much do they cost?**

PLBs may be purchased from a number of outdoor retailers such as REI for around \$299. PLBs may also be rented nationwide from PLBRentals.com for approximately \$39/week. In addition, PLB Rentals, LLC can often provide group discounts as well as other incentives to ensure PLBs are in the hands of those who might need them. The SARSAT program is a federally funded program and there is no cost to use it.



## What happens when a PLB is activated and how do they work?

When an individual (or group) is in distress, activating a PLB results in a 5W 406MHz signal being transmitted. The distress signal is received by the SARSAT (Search and Rescue Satellite Aided Tracking) system which uses NOAA satellites in low-earth and geostationary orbits to detect and locate the source of the signal.

Initially, the geostationary satellites detect the distress signal and actual location of the transmitting PLB is then determined using Doppler technology from the low-earth satellites. The distress information is provided by NOAA to the AFRCC (Air Force Rescue Coordination Center). Encoded in the transmitted signal is a serial number which is used to determine the registered owner or renter of the PLB device.

The initial location information is determined in 10-45 minutes and is accurate to within about 2 miles anywhere on earth. The second pass improves the accuracy to within about 300-400 yards. All PLBs available today also have a built in GPS and upon acquiring a signal from GPS satellites transmit location information accurate to about 100 yards within minutes.

In addition to the 406MHz transmitted signal used by the SARSAT satellites, PLBs also transmit a 121.5MHz homing signal that is used by Search and Rescue teams to locate the person in distress once they get close to the location provided by the SARSAT system.

## How reliable are PLBs and what kind of maintenance is required?

PLBs are strictly emergency devices, and as such, they are required to be and are extremely reliable in the case of an emergency. A PLB will work in rain, falling snow, blizzards, under a tree canopy and even in a crevasse. The few cases a PLB will not work include when buried under snow or in a cave. PLBs are only used in an emergency and so are required to have a 5 year battery life at the end of which an activated PLB is required to transmit a distress signal for at least 24 hours at temperatures as low as minus 40 degrees F. PLBs are waterproof and the only maintenance required is battery replacement after an activation or at the 5 year battery expiration date.

## If I have a cell phone, GPS, and/or a SAT phone, why would I need a PLB?

Cell phones have limited coverage and limited battery life. Although SAT phones typically have better coverage, it's still not good enough to ensure you'll be rescued in the event of an emergency. Insufficient battery life can also be a factor and then you have to know where you are to provide rescue personnel the information necessary to find you. Used in conjunction with a GPS, you may be able to provide location information but the GPS may have battery issues and you may not be able to acquire a GPS signal under a tree canopy or even in inclement weather conditions. In addition, these devices typically aren't waterproof rendering them useless if they get wet.



[www.PLBRentals.com](http://www.PLBRentals.com)

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