



Australian Government

Australian Maritime Safety Authority

DISTRESS BEACONS AND MMSI INFORMATION



DISTRESS BEACONS

What is a distress beacon?

A distress beacon is an electronic device that, when activated in a life threatening situation, assists rescue authorities to locate people in distress.

Do I need a distress beacon?

A distress beacon can mean all the difference in a life threatening situation – in some cases it's the law:

- Most vessels travelling more than two nautical miles from land must carry an Emergency Position Indicating Radio Beacon (EPIRB).
- Some aircraft may be required under Civil Aviation Safety Authority (CASA) regulations to carry a distress beacon on board.

Check your Commonwealth, State or Territory Authority for the specific regulations applicable to you.

Beacons are also recommended to anyone venturing into the remote outdoors even though they may not be mandatory.

What are the different types of beacons?

Type	EPIRB	PLB	ELT
Name	Emergency Position Indicating Radio Beacon	Personal Locator Beacon	Emergency Locator Transmitter
Where is it used?	Maritime , land, air	Land , maritime, air	Air
Description	<p>In most states, EPIRBs are required by law for vessels that travel more than 2 nautical miles from the coast.</p> <p>EPIRBs may also be used on land or carried in place of an ELT on an aircraft.</p>	<p>PLBs are smaller and easier to carry than other beacons, and are designed to be carried or worn on a person.</p> <p><i>PLBs do not meet the equipment carriage requirements when an EPIRB is specified as mandatory.</i></p> <p><i>For some aircraft types, PLBs may be carried in place of or in addition to an ELT</i></p>	<p>ELTs are designed to be fitted to an aircraft.</p> <p><i>In some cases, EPIRBs or PLBs may be carried in place of an ELT.</i></p> <p>Refer to CASA for further details, www.casa.gov.au.</p>
Hours of operation*	48 hours	24 hours	24 hours

*Hours of operation refer to the minimum amount of time that your beacon will continuously transmit a signal after it has been activated.

GPS VS NON GPS

GPS IS BEST

AMSA recommends a beacon with GPS as they have the quickest and most accurate alerts, so a response can be activated sooner.



With GPS

Precision of location: Within 120 metres

Alert time: Detected within minutes

Time to provide location: Up to 20 minutes (assuming beacon is deployed correctly)



Without GPS

Precision of location: Within 5 kilometres

Alert time: Detected within minutes

Time to provide location: Acquired between 90 minutes to 5 hours

REGISTRATION

Why should I register my beacon?

Carriage of a registered beacon is sometimes required by law.

Register your beacon with AMSA. A registered beacon provides AMSA with essential information to contact you and your emergency contacts in the event of an emergency. This information is critical for search and rescue authorities to commence a response in the shortest possible time. This could make all the difference in a life threatening situation.

When should I update my registration?

Registration is valid for two years and must be renewed prior to this date. You should also update your registration if:

1. Your contact details change
2. You sell your beacon
3. You buy a previously owned beacon
4. You lose, dispose of or have your beacon stolen.

Note: If you've bought or sold a boat, you can update your details on the online registration system, or contact us to provide new or change details of your beacon and vessel.

To register or update registration, go to www.amsa.gov.au/beacons or call **1800 406 406** or **+61 (0)2 6279 5000**

What information do I need to register?

When registering your Australian beacon you will be required to provide the following information:

- Name, address and phone number
- An email address to create an online account
- Beacon Hex ID/UIN
- Beacon Serial Number
- Beacon Manufacturer
- Beacon Model
- Name and phone numbers of at least one person who can be contacted in an emergency as a 24-hour emergency contact
- Name of the business or person who supplied the beacon to you
- The purpose for which you'll most likely be using the beacon for example: vessel, aircraft, vehicle, hiking etc.
- If you would like to register a vessel, aircraft, or vehicle you will need to supply some descriptive or registration details about it (you can also upload photos and trip details to help with search and rescue purposes should it be needed in future)
- Any radio equipment that requires an MMSI number you will need to supply the make/model and serial number

Do I need to carry proof of registration?

When distress beacons are mandated by law, you must carry proof of registration details.

What is a HexID or UIN Code?

The HexID or Unique Identification Number (UIN) is the unique code programmed into each 406 MHz distress beacon. When registering a distress beacon, this code must be provided as it is the only code that links the distress beacon to the registered owner. Without the HexID the beacon cannot be registered.

The HexID is 15 characters long and is made up of hexadecimal numbers (0-9) and letters (A-F). The HexID can be found on the label of all 406 MHz distress beacons



USING YOUR BEACON

When do I use my beacon?

If you feel that your life is in grave or imminent danger, you should first try to use two-way communications such as a phone or radio so that you can talk to emergency services. If this is unavailable, then a distress beacon should be activated. This equates to when you feel you are facing a life threatening situation. This is a personal decision that is different for everybody.

Where do I store my beacon?

Like your mobile phone, keep your beacon dry and store it within easy reach in case of an emergency. Refer to the manufacturer's user manual for specific instructions for your model.

Distress beacons are stowed depending on the type:

EPIRBs should be fitted or carried in the mounting bracket as they may have a water sensor and activate if not in the bracket.

ELTs are mounted in a rack and installed permanently in aircraft. A PLB or EPIRB can be used as an alternative to an ELT for some aircraft.

PLBs are to be physically carried on the body or within easy reach.

It is important to keep distress beacons away from:

- items that may accidentally knock the activation switch;
- magnetic sources, such as microphones and radio speakers;
- high pressure water sprays
- children who may play with the beacon.

Do not store beacons in high temperatures.

ACTIVATING YOUR BEACON

What happens when I activate my beacon?

Activating your beacon transmits a signal that is detected by the international **COSPAS-SARSAT satellite system**. How long it takes for emergency personnel to rescue you will vary on the situation. For instance, this may include time of day, remoteness of location, weather, terrain and accessibility.

How long does it take to be rescued?

The time it takes for search and rescue personnel to reach you can depend on a number of factors, including the weather, terrain and accessibility of your location.

Reminder: Be prepared to survive until help arrives.

Australia's Search and Rescue Region

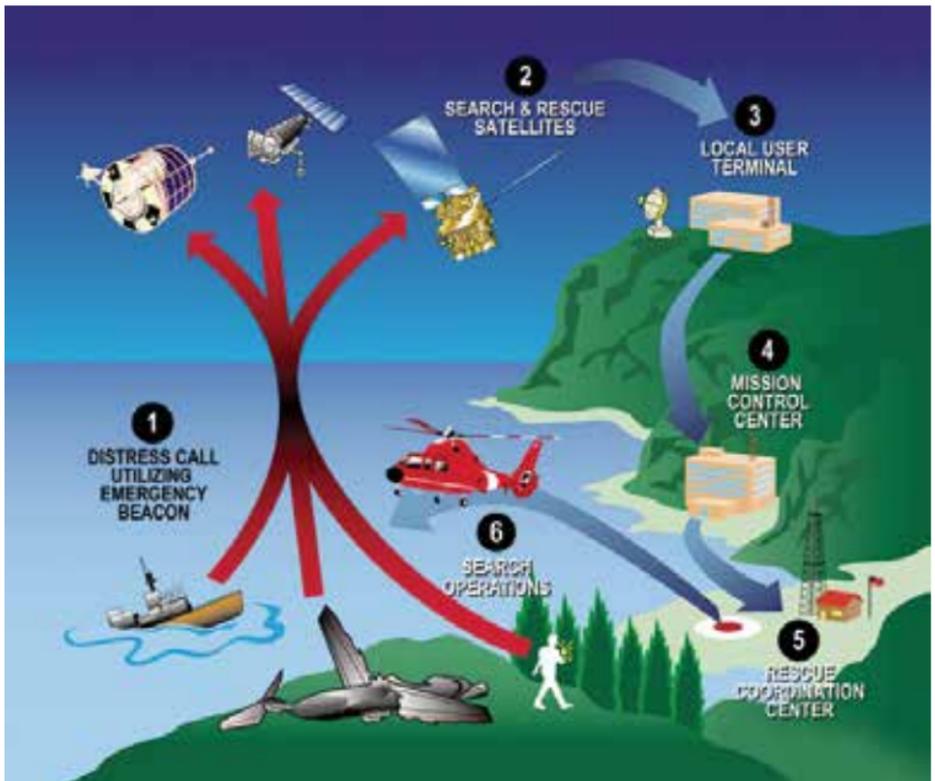
The Australian Maritime Safety Authority (AMSA) receives distress alerts from the COSPAS SARSAT satellite system that fall within the Australian search and rescue region, which is approximately one tenth of the world's surface.



COSPAS-SARSAT Satellite System diagram

1. A distress beacon is activated.
2. Its signal, with its unique identification number or HEX ID, is transmitted and detected by the nearest satellite.
3. An alert is sent to the nearest local user terminal (LUT).
4. The alert is processed by the nearest mission control centre (MCC) and forwarded to the rescue coordination centre (RCC).
5. The RCC is notified and begins to arrange search and rescue operation. Registration details are provided to the RCC in the country in which the beacon is both activated and registered.
6. Search and rescue authorities commence search operations as soon as they can. If your beacon is registered, AMSA Search and Rescue will ring your emergency contacts immediately for information regarding your whereabouts. **Therefore, it is important to keep your contact details updated in order for search operations to commence as soon as possible.**

Note: Do not turn off your distress beacon until advised by rescue services.



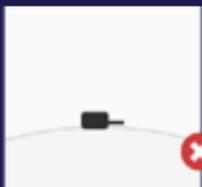
HOW DO I ACTIVATE MY BEACON?

Satellites cannot be detected through mountains, trees or buildings. Correct deployment is necessary when activating your beacon to ensure it is detected by the satellite.

LAND

PLB or EPIRB

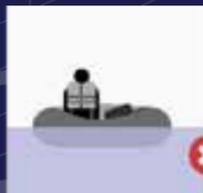
After activating your beacon, make sure it is positioned in a clear and open area. The aerial must be pointing towards the sky, preferably with 180 degrees or more of visibility, away from trees, buildings, mountains, and vehicles. If possible, position it at the highest point if you are within a deep ravine or gully. This will ensure maximum effectiveness for detection.



WATER

EPIRB

Attach the Emergency Position Indicating Radio Beacon (EPIRB) using the lanyard to the person, vessel, or life raft (nothing that will sink). The EPIRB is designed to float vertically in the water. If you are sitting in a life raft and prefer to have the EPIRB inside the life raft, ensure the aerial is always vertical and that nothing is covering the beacon for the best chance of detection.



PLB

Your Personal Locator Beacon (PLB) should be attached to the upper portion of your lifejacket, above water, with the aerial pointing towards the sky. Note, PLBs do not float vertically in the water. Do not hold the PLB as you might inadvertently cover the transmission and prevent detection.



AIR

PLB or EPIRB

The same procedure for deployment described for EPIRB and PLB will apply.

ELT

Emergency Locator Transmitter (ELT) beacons should automatically activate after an impact has occurred, but you should check that your beacon has activated in the emergency, if possible.

Can I use my beacon overseas?

The **COSPAS-SARSAT satellite system** works globally and detects beacons anywhere on the earth's surface if deployed correctly. Contact your chosen airline for guidance on taking distress beacons overseas as every airline and airport have different requirements. Some countries consider PLB carriage and activation illegal on land, so also check relevant distress beacon information of the country you are visiting.

Should I activate more than one beacon in a group?

If you are in a group and encounter an emergency situation, do not activate more than two beacons. If the group separates, activate a beacon in each group. If individuals drift apart, activate beacons fitted to each person.

What if I accidentally activate my beacon?

If your beacon is accidentally activated, switch it off immediately and contact AMSA on **1800 641 792**.

There is no penalty for accidental activation.



LOOKING AFTER YOUR BEACON

When should I replace my battery?

Beacon battery life varies depending on the type of beacon. Replace your battery:

- before the expiry date
- if you have used your beacon in a distress situation

Batteries should only be replaced by the manufacturer or a certified servicing agent.

Note: Even if the light operates when you are testing your beacon after the battery expiry date, this does not guarantee your beacon will work correctly in a distress situation. You will still need to service and replace the battery to meet state and territory beacon carriage requirements.

How do I dispose of my beacon?

Don't bin your beacon. Thousands of dollars are spent every year in Australia searching for beacons that have inadvertently activated in rubbish dumps. For correct disposal please refer to options below:

Option 1: Contact your local battery store to check whether they disconnect and dispose of beacons. A small fee may apply.

Option 2: Contact your marine safety agency. They may be able to provide disposal advice.

Option 3: Disconnect the beacon battery according to the manufacturer's instructions. Then contact your local waste management facility to ask about disposing of your unwanted beacon in an environmentally friendly way. A small fee may apply.

Can I test my beacon?

Every beacon has a self-test switch. Please ensure you follow the manufacturer's guidelines on how to perform a self-test and how often. Some manufacturers recommend that you self-test the beacon periodically, either once a month, or prior to a planned trip.

REMINDER

- Distress beacons save lives
- Register your beacon
- Carry proof of registration
- Keep your registration details up to date
- Upload trip details or photos before heading out
- Check battery expiry date
- Stow or carry your beacon correctly
- Activate your beacon correctly
- Dispose correctly
- Service your beacon after use
- Call AMSA Search and Rescue immediately on 1800 641 792 if your beacon is accidentally activated.

CONTACT AND FURTHER INFORMATION

Distress Beacon Registration

Web: www.amsa.gov.au/beacons

Enquiries: 1800 406 406 or +61 (0)2 6279 5000 (international callers)

Email: ausbeacon@amsa.gov.au

MMSI INFORMATION

What is an MMSI?

A **Maritime Mobile Service Identity (MMSI)** is a unique nine digit number that is entered into certain marine radio communications equipment. When using this equipment to send a distress alert, or to indicate some other emergency, the number assists emergency services to identify you and/or your vessel.

The Australian Maritime Safety Authority allocates Australian MMSIs to:

- Australian vessels and coast stations using DSC and AIS
- Handheld VHF radios with DSC
- AIS base stations
- AIS Aids to Navigation, and
- AIS on SAR aircraft.

Why do I need an MMSI?

You are required to apply for an MMSI if you have the following equipment:

A fixed Very High Frequency (VHF) radio with Digital Selective Calling (DSC)	DSC is a means of transmitting your MMSI number over a radio network to establish initial contact between vessels and stations that have similar radio communications equipment. Your vessel is identified by your MMSI number and able to indicate the priority of your message.
A handheld VHF DSC	If your equipment is connected to a GPS receiver, the message will also provide the vessel's position and time at which the position was valid.
High frequency (HF) DSC	DSC equipment is a part of the Global Maritime Distress and Safety System (GMDSS).
Automatic identification system (AIS) (See Note 1)	AIS is an automatic system used on ships and by vessel traffic services for identifying and locating vessels (Class A or Class B transceiver) and for safety-of-navigation.

Please note if you have the following handheld devices:

Handheld or Diver DSC radios	Each device must be programmed with a unique MMSI number that is different to the MMSI of the vessel.
Manoverboard DSC/AIS device	Each device is pre-programmed with an MMSI number and therefore you are not required to apply for a new MMSI or register the device.

How do I apply for an MMSI?

Apply for an Australian MMSI number by completing an MMSI application online or by downloading the form (refer to details below).

Before applying for an Australian MMSI number you must have the pre-requisites outlined below. If you do not have the required qualifications, contact the Australian Communications Media Authority (ACMA) for further information.

- An ACMA Maritime Ship Station Licence and Callsign for an MF/HF transceiver
- Vessel registered in Australia (except Northern Territory)
- Marine radio operator qualifications. The following types are accepted:
 - Australian Waters Qualification (AWQ) – (See Notes 2 and 3)
 - Short Range Certificate of Proficiency (Marine Radio Operators VHF Certificate of Proficiency – MROVCP) (See Note 3)
 - Long Range Certificate (Marine Radio Operators Certificate of Proficiency – MROCP)
 - GMDSS First Class Radio Electronic Certificate - 1st Class REC
 - GMDSS Second Class Radio Electronic Certificate - 2nd Class REC
 - GMDSS General Operator's Certificate - GOC
 - Restricted Radio Operator's Certificate or Proficiency – RROCP

You will also need to provide the following information:

- Name, address and phone numbers of registered vessel owner
- Name and phone numbers of at least one person who can act as a 24-hour emergency contact
- Vessel, vehicle or aircraft details as applicable
- VHF DSC, HF DSC or AIS Make/Model or Handheld VHF DSC Make/Model and Serial Number

Note 1: Marine radio operator qualifications are not required for AIS on SAR aircraft, AIS base stations or AIS Aids to Navigation.

Note 2: AWQ is accepted for VHF and AIS operating in Australian waters only.

Note 3: Diver Handheld VHF DSC transceivers – marine radio operator qualifications are not required if the radio operator in the diving boat (mother vessel) is qualified. In the case of lone divers not operating from boats, the requirement for a marine radio operator certificate remains.

Information relating to MMSI application forms

For Australian registered vessels, coast stations, handheld VHF radios with DSC and AIS on SAR aircraft, apply for an Australian MMSI number by completing MMSI application form 89 (online).

For Australian AIS base stations and AIS Aids to Navigation, apply for an MMSI by completing application form 234a or 234b.

For more detailed information on MMSIs, to register online or access application forms please refer to www.amsa.gov.au/mmsi

Phone: 1800 406 406 or +61 (0)2 6279 5000 (international callers)

Email: ausbeacon@amsa.gov.au