



Owner's Manual

**Emergency
Position
Indicating
Radio
Beacon**



PRO-Find 406™

**Emergency Position-Indicating
Radio Beacon**

**Owner's Manual
UM-419-99-019
Version 1.0, March 14, 2001**



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IMPORTANT

Registration

The PRO-Find 406.028 MHz EPIRB (Emergency Position Indicating Radio Beacon), when activated, automatically advises Search And Rescue (SAR) authorities that you are in distress. After activation of your PRO-Find 406™, SAR can identify you and begin the search for your vessel. However this only works if you properly register your PRO-Find 406™ EPIRB. You must include your Universal Identification Number (UIN), which is printed on the unit.

If you are a resident of the United States:

To ensure the Mission Control Center/SAR center has the information required in case of an emergency you **MUST** register your PRO-Find 406™ EPIRB with the National Oceanic and Atmospheric Association (NOAA). (Registration form Annex A) You must fill it out and send it to:

SARSAT	
E/SP3, RM3320, FB-4, NOAA	Tel: 1-888-212-SAVE (7283)
5200 Auth Road	Fax: 1-301-568-8649
Suitland, MD 20746-4304 USA	

If you are a resident of Canada:

You must register your PRO-Find 406™ EPIRB with the National Search and Rescue Secretariat (NSS) and send your registration form to:

Canadian Beacon Registry	
c/o National Search & Rescue Secretariat	Tel: 1-800-727-9414
4 th Floor, 275 Slater Street	Fax: 1-613-996-3746
Ottawa, ON K1A 0K2 Canada	

The only reason you will need to contact NOAA or NSS, after sending in your registration card is for the following reasons:

- There is a change in ownership of your vessel
- You purchase a different vessel
- You change your mailing address or phone number

PRO-Find 406™ EPIRB

PRO-Find 406™ is an Emergency Position Indicating Radio Beacon (EPIRB) that sends a distress signal via UHF radio transmission on the 406.028 MHz frequency via satellite to the COSPAS-SARSAT network.

COSPAS-SARSAT System Overview

COSPAS-SARSAT is an international system that uses low altitude, near-polar orbiting satellites and geostationary satellites that assist in detecting and locating activated satellite EPIRBs operating in the 406.0 to 406.1 MHz band. A 406 MHz satellite EPIRB designed and manufactured to the standards published by COSPAS-SARSAT constitutes the satellite EPIRB portion of the COSPAS-SARSAT System developed and implemented by the COSPAS-SARSAT Partners (Canada, France, the Russian Federation, and the United States).

COSPAS-SARSAT satellite transponders receive distress alert signals from EPIRBs transmitting on the 406 MHz frequency band. The COSPAS-SARSAT 406 MHz satellite EPIRB signal consists of a digital message that provides identification data, nationality and type of user. The satellite system determines the EPIRB position using precision doppler techniques on the 406 MHz signal. The satellites store this information and forward it to a ground station.

The distress position is relayed to a Mission Control Center (MCC) where the distress alert and location information is immediately forwarded to an appropriate Search and rescue Point Of Contact (SPOC). The SPOC dispatches Search And Rescue (SAR) forces and the survivors are brought to safety.

The Search And Rescue Forces use the EPIRBs 121.5 MHz signal to home in on the emergency once they get in the vicinity of the reported distress position.

Category I – Automatic Release Bracket

Category II – Manual Release Bracket

Note: The category I and category II EPIRB is the same unit. (Figure 1)
The difference between the two is the brackets in which they are stored.
For automatic activation, throw the unit in the water and it will automatically activate once the immersion sensors come in contact with water.

The PRO-Find 406™ EPIRB has an operating life of 48 hours.

Operating Temperature Range

-40°C to +55°C

-40F to +131F

Storage Temperature Range

-50°C to +70°C

-58F to +158F

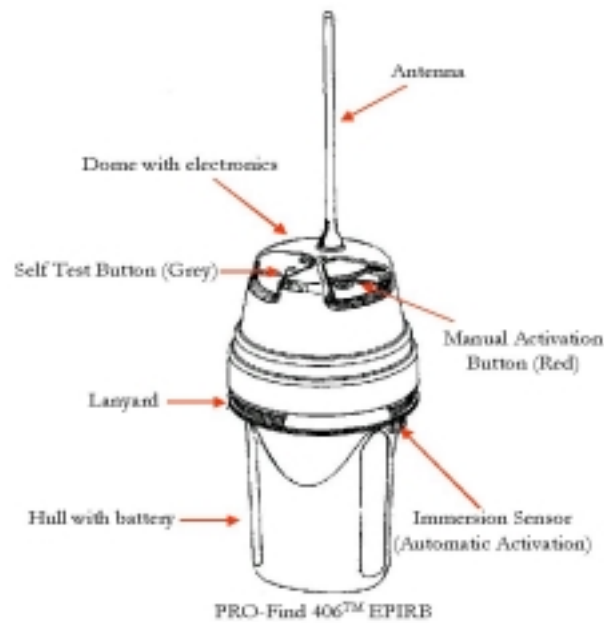


Figure 1 – PRO-Find 406™ EPIRB

Category I PRO-Find 406™ – Automatic Release Bracket

Installation

The primary function of the Category I PRO-Find 406™ **automatic release bracket** is to automatically eject the EPIRB in the event that the vessel capsizes or sinks. It is imperative that it be located in an open area free from rigging, cargo or ledges, and mounted as high as possible, so it can be ejected from the vessel without obstruction and float to the surface. Do Not store the unit inside a compartment or secure the lanyard to the vessel.

Do Not Install:

- within one meter (3.3 feet) of a magnetic compass
- within two meters (6.6 feet) of a radar antenna
- within one meter (3.3 feet) of a high powered radio antenna
- where there is an overhang (to minimize entrapment)

Once you have selected a location for installation, use the unit as a template to drill the holes for the screws that hold the automatic release bracket in place. (Figure 2) While holding the bracket in place screw the unit to the bulkhead surface. Place the PRO-Find 406™ in the bracket, put the top cover over the PRO-Find 406™ and put the cotter pin in place to hold the bracket together.

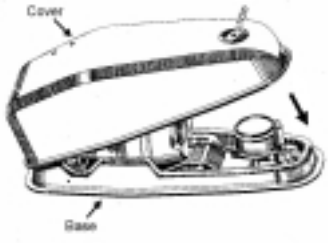
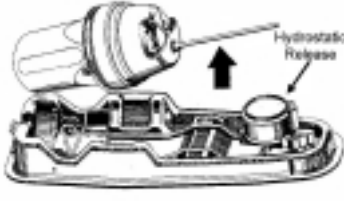
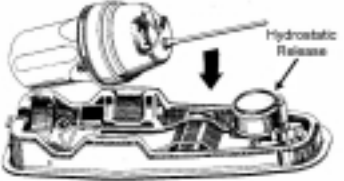
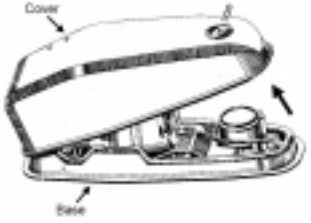
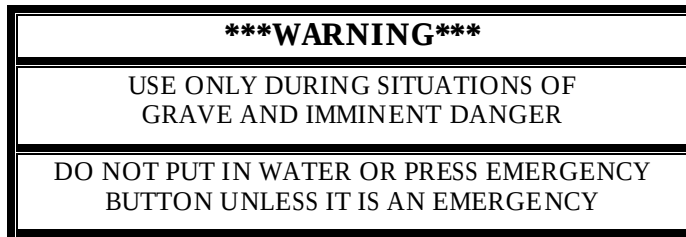
	
Step 1: Pull out cotter pin and lift off automatic release bracket cover.	Step 2: Lift out EPIRB and use base to screw unit in place.
	
Step 3: Return EPIRB to base after it is secured in place.	Step 4: Place cover over base and replace cotter pin.

Figure 2 – Installation of Category 1 Automatic Release Bracket



How to use in case of emergency

The automatic release, Category I, PRO-Find 406™ is designed primarily for automatic deployment and automatic activation without any human intervention at a water depth of 1.5-4.0 meters (5-13 feet).

The Category I PRO-Find 406™ is fitted with a hydrostatic release, which contains a pressure trigger that forces the case open at the prescribed water depth (1.5-4 meters/5-13 feet). The cotter pin, which holds the case together is automatically cut by a spring-loaded blade, forcing the case open which in turn ejects the PRO-Find 406™ into the water. If the unit begins to sink with the vessel, it will automatically activate itself once released at the prescribed water depth. This unit can also be manually deployed. (If you are abandoning ship, you can take it with you on a life raft.)

Manual deployment:

- Slide out the cotter pin from the plastic rod at the top of the unit
- Lift the cover off as it pivots away from the bottom
- Lift the PRO-Find 406™ out of its bracket and take it with you to the life raft (Figure 2, Steps 1 and 2)

Manual activation:

- Pry off the clear plastic tab on top of the dome and push the red button

- Unwind and tie the lanyard to the life raft
- Throw the PRO-Find 406™ in the water (after tying to life raft/vessel)
- **DO NOT tie PRO-Find 406™ to a sinking vessel**

Attempting to operate the EPIRB inside the life raft or under any similar cover or canopy will degrade its performance.

NOTE: PRO-Find 406™ will transmit a signal when pressed ON in the bracket. HOWEVER it transmits signals more efficiently when floating in water.

Hydrostatic Release Replacement

If the PRO-Find 406™ has deployed automatically, a new hydrostatic release is required (Figure 3A, 3B). Additionally the hydrostatic release must also be replaced every two years. This can be purchased locally (see below for part numbers) or through PRO-Find Safety Inc. The expiry date for your hydrostatic release must be written on the label (which is on the cover of your automatic release bracket) with indelible marker or pen.

The approved Hydrostatic Release types are:

- Pains Wessex – Part #57501
- Hammer – Model # H20/H20E

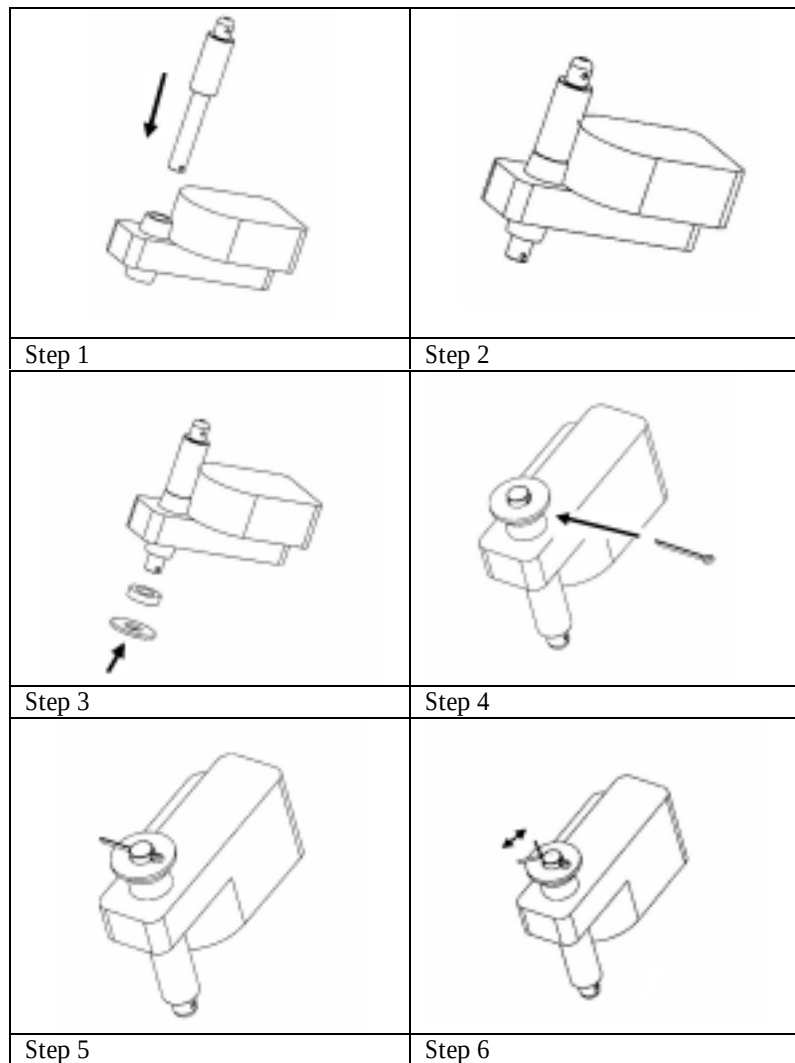


Figure 3A – Pains Wessex Hydrostatic Release Replacement

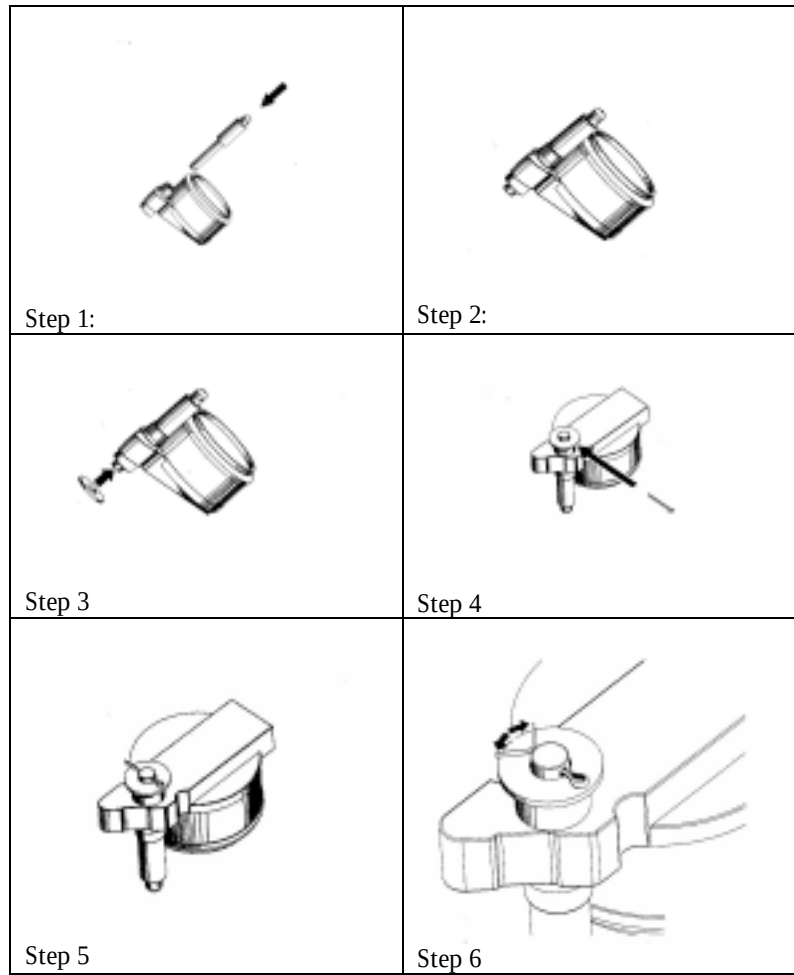


Figure 3B – **Hammer Hydrostatic Release Replacement**

Category II PRO-Find 406™ – Manual Release Bracket

Installation

To select an optimum location for your PRO-Find 406™, ensure it is in an open area free from obstructions (ie. overhangs, canopies). It should not be mounted inside a cabin or any enclosures if it is intended to be activated in its bracket. Install it in a common area so it can be manually activated if necessary.

Do Not Install:

- within one meter (3.3 feet) of a magnetic compass
- within two meters (6.6 feet) of a radar antenna
- within one meter (3.3 feet) of a high powered radio antenna
- where the PRO-Find 406™ will get drenched by waves

Once you choose an appropriate location for the unit, use the mounting bracket as a template to drill the holes into the bulkhead. While holding the bracket in place, screw the bracket onto the bulkhead surface. Then seat the unit in the bracket and snug the Velcro strap. It is recommended the unit be installed in a vertical position (Figure 4). However it will work if stored in a horizontal position.

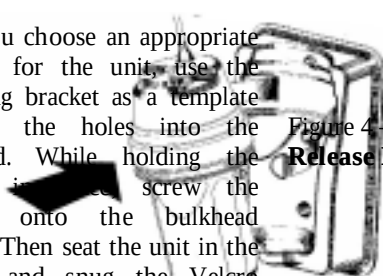
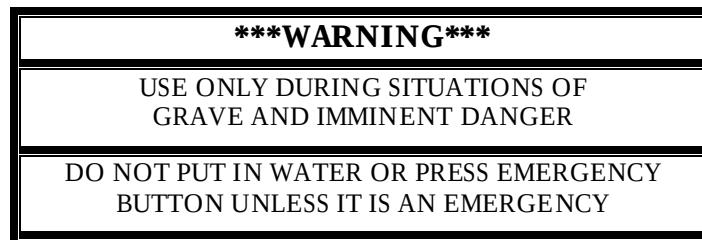


Figure 4 – Category II Manual Release Bracket

Remember the bracket is primarily a storage device, not a platform for activation. If the unit is left in the bracket of a sinking vessel, it will go down with the vessel.



How to use in case of emergency

For Manual Activation:

- Release the Velcro strap and remove the PRO-Find 406™ from the mounting bracket
- Pop up the emergency tab on top of the dome, which will break the emergency seal
- Push the red button (You will see a flashing strobe light when the PRO-Find 406™ is activated)
- Find the end of the lanyard (high tensile string wound around the mid-section) and unravel it completely
- Tie the lanyard to a fixture on the life raft/vessel
- Throw the unit overboard
- **Do Not tie PRO-Find 406™ to a sinking vessel**

OR

For Automatic Activation:

- Release the Velcro strap and remove the PRO-Find 406™ from the mounting bracket
- Tie the lanyard to a fixture on the life raft/vessel
- Throw the unit overboard

- **Do Not** throw the PRO-Find 406™ into the water without having it secured to you or the life raft/vessel
- **Do Not tie PRO-Find 406™ to a sinking vessel**

Attempting to operate the EPIRB inside the life raft or under any similar cover or canopy will degrade its performance.

NOTE: PRO-Find 406™ will transmit a signal when pressed ON in the bracket. HOWEVER it transmits signals more efficiently when floating in water.

False Distress Alerts & De-Alerting

Should there be, for any reason

- a false distress alert, or
- a distress situation which has been resolved and you no longer require assistance contact the nearest search and rescue authorities via the most expeditious means available with the following information:
 - Beacon ID number (15 character UIN)
 - Position (at time of activation)
 - Date of Activation
 - Time of Activation (time zone)
 - Duration of Activation
 - Beacon Make and Model
 - Vessel Name/ID/MMSI
 - Circumstances/Cause (if known)

Primary United States Points of Contact

United States	Atlantic Ocean/Gulf of Mexico USCG Atlantic Area Command Centre Tel: 212-668-7055
	Pacific Ocean Area USCG Pacific Area Command Centre Tel: 510-437-3700
	From Any Location USCG HQ Command Centre Tel: 800-323-7233

Primary Canadian Points of Contact

Canada	RCC Halifax Rescue Co-ordination Centre Canadian Forces Base Tel: 800-565-1582 or 902-427-8200
	MRSC St. John's Maritime Rescue Sub-Centre Canadian Coast Guard Base Tel: 800-563-2444 or 709-772-5151
	MRSC Quebec Centre secondaire de sauvetage maritime Garde cotiere canadienne Tel: 800-463-4393 or 418-648-3599
	RCC Trenton Rescue Co-ordination Centre Canada Forces Base Tel: 800-267-7270 or 613-965-3870
	RCC Victoria Rescue Co-ordination Centre Canadian Forces Base Tel: 800-567-5111 or 250-363-2333

De-alerting SAR Forces in the event of inadvertent activation or when assistance is no longer required is IMPORTANT because false distress alerts divert rescue forces from real distress situations. Responding to false alarms costs millions annually.

If this unit is inadvertently activated for an extended period of time the battery needs to be replaced.

The following details need to be remembered:

1. Activating your beacon is the equivalent of transmitting a mayday.
2. Follow the procedures in this manual when testing your beacon.

Self Test

To ensure your new PRO-Find 406™ EPIRB is working properly, perform the self-test as follows:

- Inspect for damage
- Locate the gray button on top of the dome and press it until a yellow LED lights up. Remove your finger from the button (Figure 5)
- Wait while the LEDs strobe back and forth (approximately 3 seconds)
- Note the xenon flasher at the top of the dome flashes
- One of the LEDs remains on for 10 seconds
- One of the following test results is displayed:
 - a. Green flashing LED = passed all tests
 - b. Red flashing LED = battery failure (see Battery Replacement details on page 14)
 - c. Red solid LED = transmitter failure (Contact PRO-Find Safety Inc. and then return the PRO-Find 406™ to PRO-Find Safety Inc. including a copy of your receipt and a copy of the warranty card)

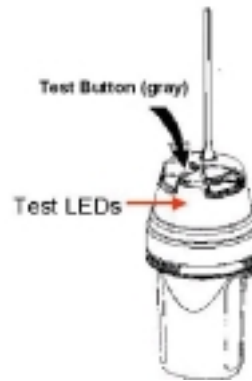


Figure 5 – **Self-Test Procedure**

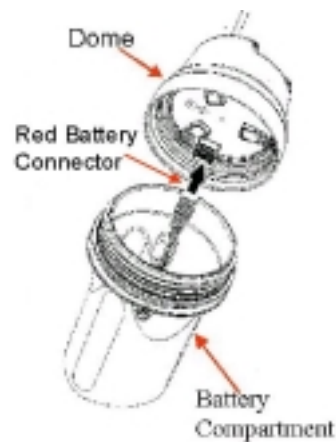
Note: The test will take approximately 25 seconds during which time a test message is sent to the COSPAS-SARSAT satellite.

The self-test checks three key elements of the PRO-Find 406™:

1. Frequency stability of the transmitter
2. Output power of the transmitter
3. Battery power

The self-test should be performed once a month. Testing more frequently will deplete battery power and jeopardize the battery's intended 48-hour emergency life.

Battery Replacement



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The battery pack is to be replaced:

Figure 6 – **PRO-Find 406™**
Components

- by the date indicated on the beacon
- whenever the EPIRB is activated for an extended period of time for any reason other than a test

If the battery fails a monthly test refer to your warranty information if within battery expiration date.

Note: In order to preserve the 'O' ring seal – 'only' unscrew the top and bottom sections of the PRO-Find 406™ when you are replacing the battery pack.

As mentioned in the warranty, the battery pack is designed to provide a five-year life warranty.

To Replace The Battery Pack:

1. Unscrew the clear plastic dome from the yellow base.
2. Disconnect the red battery connector from the socket.
3. Remove the new battery pack from the sealed plastic bag.
4. Plug the red plastic connector into the socket inside the clear plastic dome. (The wires of the connector should be facing the center of the unit.) Push until it clicks.

Note: Grease is packed on the 'O' ring to improve the seal. Do not wipe grease off the unit.

5. Hand-tighten the dome and battery pack together until firmly snug.
6. For Category I automatic release units, record the battery replacement date on the side of the automatic release bracket for future reference.
7. Complete Self-Test to assure unit is ready to function – see Self Test, page 13.

Caution: Dispose of the old battery pack according to local safety regulations. Batteries contain lithium. Do not burn or attempt to remove the cells from the unit.

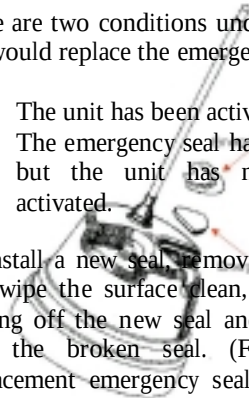
Emergency Seal Replacement

There are two conditions under which you would replace the emergency seal:

1. The unit has been activated.
2. The emergency seal has broken but the unit has not been activated.

To install a new seal, remove the old seal, wipe the surface clean, peel the backing off the new seal and affix it over the broken seal. (Figure 7) Replacement emergency seals can be ordered directly from PRO-Find Safety Inc.

Figure 7 – **Emergency Seal Replacement**



How It Works

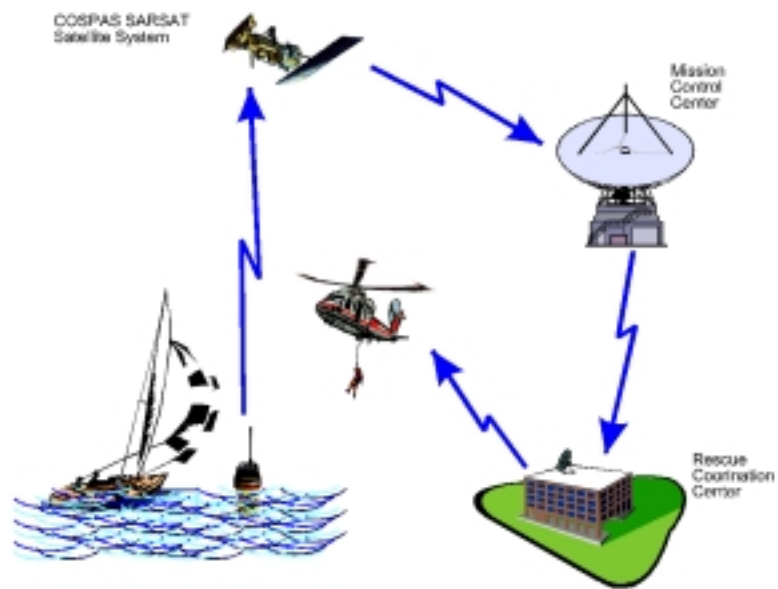


Figure 8 – When a PRO-Find 406™ EPIRB is Activated

The PRO-Find 406™ EPIRB (Emergency Position Indicating Radio Beacon) is a vital safety aid for all vessels – from commercial ships to recreational boats. It enables the mariner to send an encoded distress signal, indicating the location of the emergency and the EPIRBs Unique ID (UIN), to the nearest search and rescue center.

Two transmitters inside the PRO-Find 406™ provide the signals necessary to inform the search and rescue responders. The 406.028 MHz signal supports a message format that includes a registered universal identity, received by one of several satellites. The 121.5 MHz signal provides a homing frequency that enables search and rescue personnel to localize the target once they are in the vicinity.

What happens when PRO-Find 406™ EPIRB is activated: (Figure 8)

1. A signal is transmitted to geostationary or polar orbiting satellites.
2. The satellite sends the distress call to the Mission Control Centre (MCC).
3. The MCC sends the distress call to the nearest Rescue Co-ordination Centre (RCC).
4. The RCC calls the number the individual has provided, who the EPIRB is registered with, to confirm that it is in fact an emergency and not a false alarm.
5. Once it is confirmed that it is an emergency, rescue forces are deployed.

Note: Even though the PRO-Find 406™ and COSPAS-SARSAT satellite system employ state-of-the-art technology, do not expect an immediate response to your emergency signal. Prepare to wait using standard practices for safety at sea including survival suit, well maintained life raft and emergency flares.

Approvals

COSPAS-SARSAT CERTIFICATION:



March 14, 2001

Russia/France/Canada/USA - This certification is required for all 406 MHz EPIRBs.

RTCM CERTIFICATION:

United States of America - This certification is required for the US only.

FCC Certification:

United States of America - This certification is required for the US only.

Transport Canada Certification:

Canada - This certification is required in Canada.

Industry Canada CERTIFICATION:

Canada - This certification is required in Canada.

PRO-Find 406™ Warranty Limited

PRO-Find Safety Inc. ("PRO-Find") shall repair or, at its option, replace, at no cost for labor, materials or return transportation, PRO-Find 406™ if proven to be defective within 1 year from date of first purchase. No cash refunds. Warranty available for first purchasers only.

Warranty does NOT cover replacement parts normally replaced during warranty term, or, damage from any of: (1) wear and tear or misuse; (2) failure to install, use or maintain in accordance with PRO-Find 406™ manual; (3) repair or modification done by anyone other than PRO-Find or authorized dealer; or (4) failure to adequately package for transit.

Warranty is void unless warranty card is completed in full and mailed to PRO-Find within 30 days of purchase of PRO-Find 406™. To enforce the warranty, obtain a Return Merchandise Authorization (RMA) number from PRO-Find by calling 1-877-7SAFETY and ship the PRO-Find 406™ prepaid with proof of purchase (copy of sales slip) to:

PRO-Find Safety Inc.
271 Brownlow Avenue,
Halifax, Nova Scotia,
B3B 1W6 Canada



March 14, 2001

We recommend you retain and use your original packaging to ensure safe shipping of your PRO-Find 406™. Note: PRO-Find 406™ contains Lithium Sulfur Dioxide Batteries - transportation restrictions apply. Consult courier prior to shipping for current regulations.

THIS IS THE ONLY WARRANTY PROVIDED BY PRO-FIND FOR THE PRO-Find 406™ AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING AS TO MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXCLUDED. PRO-FIND SHALL HAVE NO LIABILITY FOR INJURIES, DEATH, PROPERTY DAMAGE OR OTHER LOSSES OR CLAIMS RELATED TO ANY USE OF THE PRO-Find 406™, WHETHER CLAIMED AS INCIDENTAL, SPECIAL, DIRECT, INDIRECT OR CONSEQUENTIAL DAMAGES. ACTIVITIES ASSOCIATED WITH USE OF THE PRO-Find 406™ ARE INHERENTLY DANGEROUS, AND THE PURCHASER ACCEPTS THE RISK OF THESE ACTIVITIES.

IMPORTANT

Registration

The PRO-Find 406.028 MHz EPIRB, when activated, automatically advises search and rescue (SAR) authorities that you are in distress. After activation of your PRO-Find 406™, SAR can identify you and begin the search for your vessel. However, this only works if you properly register your PRO-Find 406™ EPIRB. You must include your Universal Identification Number (UIN), which is on the unit.

If you are a United States resident:

To ensure the mission control center/SAR center has the information required in case of an emergency you **MUST** register your PRO-Find 406™ EPIRB with the National Oceanic and Atmospheric Association (NOAA). (Registration form Annex A.) You must fill it out and send to:

SARSAT
E/SP3, RM3320, FB-4, NOAA
5200 Auth Road

Tel: 1-888-212-SAVE (7283)
Fax: 1-301-568-8649



March 14, 2001

Suitland, MD 20746-4304 USA

If you are a Canadian resident:

You must register with the National Search and Rescue Secretariat (NSS) and send your registration form to:

Canadian Beacon Registry
c/o National Search & Rescue Secretariat Tel: 1-800-727-9414
4th Floor, 275 Slater Street Fax: 1-613-996-3746
Ottawa, ON K1A 0K2 Canada

The only reason you will need to contact NOAA or NSS, after sending in your registration card, is for the following reasons:

- There is a change in ownership of your vessel
- You purchase a different vessel
- You change your mailing address or phone number.

Annex A

Registration Form & Prepaid Envelope

