

# Incident History Database (IHDB)

SAR Controllers Training 2014

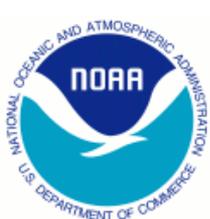
25 - 28 February 2014

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ERT, Inc.

Senior USMCC Controller





# What is the IHDB?

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- The Incident History Database (IHDB)
  - Contains database records automatically created for beacon activation events
    - Records are created when sites close (sites are beacon activation events in the USMCC system)
    - Records are:
      - Populated by RCC Controllers
      - Checked by USMCC Controllers and USMCC operations staff
  - Is maintained by NOAA
  - Is the historical record of “why” a beacon activated



# Who Uses the Information in the IHDB?

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- Resource for:
  - RCC Controllers for previous activation history
  - NOAA reporting (daily, weekly, quarterly, and annually)
  - Annual report to Cospas-SARSAT
  - US Coast Guard and Air Force for reporting
  - Continuous research
    - Beacon reliability – Reported to Beacon Manufacturer's Workshop
    - Repeat offenders data
    - Many, many, more



# Access to the IHDB

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- New accounts need to come through:
  - For AFRCC/AKRCC
    - Dan Conley, AFRCC SAR Duty Officer  
Danny.Conley@tyndall.af.mil
  - For USCG
    - LCDR Aaron Ortenzio, SARSAT Liaison Officer  
Aaron.J.Ortenzio@uscg.mil
- Passwords can be reset by the USMCC Controller



# IHDB Sample Record (1 of 5)

## View Record #330902

### Primary/Defining Data

**Site Number** 59425 **Frequency Type** 406 MHz  
**Beacon/Site ID** 2DCE72056CFFBFF **Site Status (when closed)** Composite  
**Time First Detected** 2013-02-21 23:16:00.000 **SRRs Sent Feedback Report** PACAREA AFRCC  
**Record Status** Completed **SRR Name (when site closed)** AFRCC [3668]

### Feedback Information

**USMCC Upward Site/Beacon ID Reference**  
If this incident is correlated with another, simply enter the master site number and click update

**Case Number** 1310873 **Time Case Started** 2013-02-21 23:19:00.000

**General Location** California

**Actual Latitude** (no data)

**Actual Longitude** (no data)

**How Actual Location Estimated**

### Incident Outcome

Distress  Non-Distress  Ceased/Undetermined  Linked Site  
 (Unassigned)

### Incident Type

Aviation  Maritime  Terrestrial  Other or Unknown

### Was SARSAT Data used in the resolution of this case?

Yes - Only Notification  Yes - First Notification  Yes - Supporting Data  Not Involved  (Unassigned)

### Number Rescued

**Number In Distress**

### Examples of Operational False Alerts

**Reason Activated** False Alert - Beacon Mishandling: Usage

### Activation Comment

**Boat Hours**

**Cutter Hours**

**CAP Ground Hours**

**Helo Hours**

**Fixed Wing Hours**

**CAP Air Hours**

### Additional Remarks

PLB WAS LOCATED AND SILENCED BY REGISTERED OWNER BEACON WAS ACTIVATED DUE TO ACCIDENTAL ACTIVATION Result: NON-DISTRESS Location: PALO ALTO, CALIFORNIA Current beacon registration is incorrect. A POC for this beacon's registration (ED) can be reached at 210-710-8148.



# IHDB Sample Record (2 of 5)

## Beacon Information

**General Type** PLB  
**Protocol Type** PLB SERIAL (STANDARD)  
**Country Code** USA  
**Beacon Activation Type**  
**Location Protocol Beacon**  Yes  No

**Manufacturer**  
**Beacon Model**  
**Homing Device** 121.5 MHz  
**Beacon Registered**  Yes  No

## Site Data

**First Alert ALat** 33-30-29N  
**First Alert ALon** 140-10-41W  
**First Alert ASRR** PACAREA [366F]  
  
**First Encoded Lat** 37-30-00N  
**First Encoded Lon** 122-15-00W  
**Time First Encoded** 2013-02-21 23:18:00.000  
**Time First Encoded U**  
**Encoded SRR** AFRCC [366S]  
  
**Site Opened** 2013-02-21 23:18:00.000  
**First Composite Time** 2013-02-21 23:40:00.000  
  
**Frequency** 406.0367  
**Number of Passes** 4

**First Alert BLat** 37-25-59N  
**First Alert BLon** 122-09-25W  
**First Alert BSRR** AFRCC [366S]  
  
**First Composite Lat** 37-25-59N  
**First Composite Lon** 122-08-31W  
**Last Composite Lat** 37-25-59N  
**Last Composite Lon** 122-08-31W  
**Composite SRR** PACAREA [366F]  
  
**Site Closed** 2013-02-22 02:11:00.000  
**Last Detected** 2013-02-21 23:36:00.000  
  
**Time First Geo** 2013-02-21 23:16:00.000  
**Time First Leo** 2013-02-21 23:18:00.000

**Beacon Special Status** Normal

**Incident Data Last Updated** 2013-02-22 02:24:29.143



# IHDB Sample Record (3 of 5)

**Primary/Defining Data**

**Site Number** 55263  
**Beacon/Site ID** 2DD42AC9BF81FE0  
**Time First Detected** 2013-01-01 17:15:00.000  
**Record Status** Completed

**Frequency Type** 406 MHz  
**Site Status (when closed)** Position Conflict  
**SRRs Sent Feedback Report** CGD01 CGD07 CGD05  
**SRR Name (when site closed)** CGD05 [366N]

**Feedback Information**

**USMCC Upward Site/Beacon ID Reference**  
If this incident is correlated with another, simply enter the master site number and click update

**Case Number** 623857  
**Time Case Started** 2013-01-01 17:15:00.000

**General Location** South Carolina  
**Actual Latitude** (no data)  
**Actual Longitude** (no data)  
**How Actual Location Estimated**

**Incident Outcome**  
 Distress  Non-Distress  Ceased/Undetermined  Linked Site  
 (Unassigned)

**Incident Type**  
 Aviation  Maritime  Terrestrial  Other or Unknown

**Registration Information Usage**  
 Not Used  Contributed to case resolution  Primary Means to resolve case  (Unassigned)

**\*Registration Accuracy**  
**Owner Information**  
 Accurate  Not Accurate  Unverified

**Emergency Contact Information**  
 Accurate  Not Accurate  Unverified

**Vessel/Aircraft/Usage Information**  
 Accurate  Not Accurate  Unverified

**Was SARSAT Data used in the resolution of this case?**  
 Yes - Only Notification  Yes - First Notification  Yes - Supporting Data  Not Involved  (Unassigned)

**Number Rescued** 0  
**Number In Distress** 0

**Examples of Operational False Alerts**  
**Reason Activated** False Alert - Beacon Mishandling: Usage

**Activation Comment**

**Boat Hours** 0.0  
**Cutter Hours** 0.0  
**CAP Ground Hours** 0.0

**Helo Hours** 0.0  
**Fixed Wing Hours** 0.0  
**CAP Air Hours** 0.0

**Additional Remarks**  
D7CC received a 406MHZ EPIRB registered to the FV CRYSTAL C with no positional information. D7CC contacted the registered owner who confirmed his FV was safely moored at Little River Fish Camp. Then he stated he had just destroyed the beacon with a sledgehammer because he couldn't get it to deactivate after being removed from it's bracket. Beacon later composited with a 50/50 split with D7 in the buffer for the "A" solution, which plotted IVO where the beacon had been destroyed later compositing on shore. The registered owner was unable to confirm the beacon I.D. due the beacon being destroyed. D7 will monitored the site with no further updates and contacted the owner once more to attempt to confirm the beacon was the same. The owner then confirmed the beacon ID. Case closed.





# IHDB Sample Record (4 of 5)

## EXAMPLES OF OPERATIONAL FALSE ALERTS

### BEACON MISHANDLING

[False Alert - Mishandling - Installation](#)

[False Alert - Mishandling - Testing](#)

[False Alert - Mishandling - Usage](#)

[False Alert - Mishandling - Disposal](#)

### BEACON MALFUNCTION

[False Alert - Malfunction - Switch](#)

[False Alert - Malfunction - Water Intrusion](#)

[False Alert - Malfunction - Test](#)

[False Alert - Malfunction - Electronics](#)

### MOUNTING FAILURE

[False Alert - Mounting - Bracket](#)

[False Alert - Mounting - Release](#)

[False Alert - Mounting - Magnet](#)

### ENVIRONMENTAL CONDITIONS

[False Alert - Environmental Conditions](#)

### UNKNOWN

[False Alert - Reasons Unknown](#)

## BEACON MISHANDLING

### False Alert - Mishandling - Installation

- Exposed to sea action or ship's work, beacon activated by sea spray or wave, crewman bumped beacon, equipment struck beacon, beacon installed upside down, improperly placing beacon into bracket

### False Alert - Mishandling - Testing

- Failure to follow proper testing procedures, negligence, poor beacon testing instructions, aircraft in situ test, left beacon in "on" position too long. Inspection by authorised inspector: accidental activation during vessel equipment inspection.
- Repair by owner (usually unauthorised) or authorised facility: causing damage to beacon, activation during battery change, changing of hydrostatic release while servicing beacon.
- Improper removal from bracket: inspection, test, cleaning, or safe keeping without switching off.
- Beacon shipped to / by retailer, owner, repair facility (in transit): shipped while armed, improperly packed, improperly marked, rough handling.
- Maintenance of craft: mechanical, electronic, wash down, painting, winterization.
- Beacon stored improperly: stored while armed.

### False Alert - Mishandling - Usage

- Illegal activation: hoax, vandalism, theft.
- Accidental activation: owner or SAR authorities report accidental activation and no further information.
- Demonstration / test not co-ordinated with Cospas-Sarsat / SAR authorities: training, exercise, product demonstration using on position instead of test.

### False Alert - Mishandling - Disposal

- Beacon sold with craft for scrap, discarded as trash, abandoned.

## BEACON MALFUNCTION

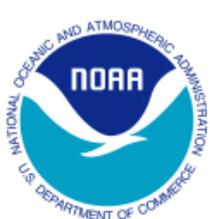
### False Alert - Malfunction - Switch

- Faulty activation switch, i.e., gravity activated, magnetic, mercury, or crash.
- Hard landing, excessive craft vibration.



# IHDB Sample Record (5 of 5)

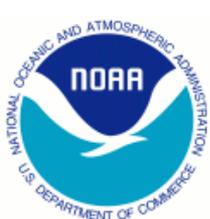
<p><b><u>BEACON MISHANDLING</u></b></p> <p><a href="#">False Alert - Mishandling - Installation</a></p> <p><a href="#">False Alert - Mishandling - Testing</a></p> <p><a href="#">False Alert - Mishandling - Usage</a></p> <p><a href="#">False Alert - Mishandling - Disposal</a></p> <p><b><u>BEACON MALFUNCTION</u></b></p> <p><a href="#">False Alert - Malfunction - Switch</a></p> <p><a href="#">False Alert - Malfunction - Water Intrusion</a></p> <p><a href="#">False Alert - Malfunction - Test</a></p> <p><a href="#">False Alert - Malfunction - Electronics</a></p> <p><b><u>MOUNTING FAILURE</u></b></p> <p><a href="#">False Alert - Mounting - Bracket</a></p> <p><a href="#">False Alert - Mounting - Release</a></p> <p><a href="#">False Alert - Mounting - Magnet</a></p> <p><b><u>ENVIRONMENTAL CONDITIONS</u></b></p> <p><a href="#">False Alert - Environmental Conditions</a></p> <p><b><u>UNKNOWN</u></b></p> <p><a href="#">False Alert - Reasons Unknown</a></p>	<p><b>False Alert - Malfunction - Water Intrusion</b></p> <ul style="list-style-type: none"><li>• Water leakage due to manufacturing defect, cracked casing, faulty seal.</li></ul> <p><b>False Alert - Malfunction - Test</b></p> <ul style="list-style-type: none"><li>• Transmitting distress signal while in test position</li><li>• Transmitted non-inverted frame sync while in test mode (406 MHz).</li></ul> <p><b>False Alert - Malfunction - Electronics</b></p> <ul style="list-style-type: none"><li>• Electronics malfunction</li><li>• Non-GPS electronics malfunction.</li></ul> <p><b>MOUNTING FAILURE</b></p> <p><b>FalseAlert-Mounting-Bracket</b></p> <ul style="list-style-type: none"><li>• Strap or bracket failure</li><li>• Strap failure, mounting bolts sheared, retainer pin broken, beacon fell out of bracket.</li></ul> <p><b>FalseAlert-Mounting-Release</b></p> <ul style="list-style-type: none"><li>• Hydrostatic release failure.</li></ul> <p><b>FalseAlert-Mounting-Magnet</b></p> <ul style="list-style-type: none"><li>• Faulty mounting magnet for externally mounted ELT</li><li>• Switch magnets not effective.</li></ul> <p><b>ENVIRONMENTAL CONDITIONS</b></p> <p><b>False Alert - Environmental Conditions</b></p> <ul style="list-style-type: none"><li>• Extreme weather conditions</li><li>• Hurricane / cyclone conditions, vessel knocked down, aircraft overturned, heavy seas, ice build-up.</li></ul> <p><b>UNKNOWN</b></p> <p><b>False Alert - Reasons Unknown</b></p> <ul style="list-style-type: none"><li>• (Confirmed Beacon Activations)</li><li>• No feedback received on why beacon activated</li><li>• Investigation into beacon activation cause was inconclusive</li></ul>
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# Reasons for IHDB False Alerts

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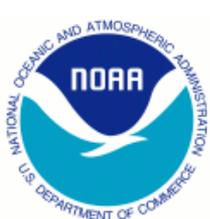
- Beacon mishandling
- Beacon malfunction
- Mounting failure
- Environmental conditions
- Unknown reasons



## False Alert - Mishandling (1 of 4)

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- Beacon false alert mishandling categories:
  - Installation
  - Testing
  - Usage
  - Disposal



## False Alert - Mishandling (2 of 4)

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- False Alert – Mishandling – Installation
  - Exposed to sea action or ship's work, equipment struck beacon, improperly placing beacon in bracket



## False Alert - Mishandling (3 of 4)

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- False Alert – Mishandling – Testing
  - Failure to follow proper testing procedures
  - Repair by owner or service center causing activation
  - Improper removal from bracket while testing or cleaning
  - Beacon shipped while armed and activated
  - Beacon stored improperly



## False Alert - Mishandling (4 of 4)

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- False Alert – Mishandling – Usage
  - Illegal activation: hoax, vandalism, theft
  - Accidental activation: reported, NFI
  - Demonstrated/test not co-ordinated
- False Alert – Mishandling – Disposal
  - Beacon discarded as trash, abandoned



# False Alert - Malfunction (1 of 3)

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- Beacon false alert malfunction categories:
  - Switch
  - Water Intrusion
  - Test
  - Electronics



## False Alert - Malfunction (2 of 3)

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- False Alert – Malfunction – Switch
  - Switch broken
- False Alert – Malfunction – Water Intrusion
  - Water leakage due to manufacturing defect, cracked casing, or faulty seal
  - Not due to the exterior of the beacon getting wet



## False Alert - Malfunction (3 of 3)

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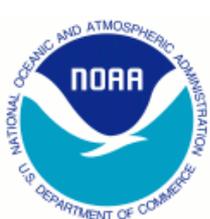
- False Alert – Malfunction – Test
  - Transmitted non-inverted frame
  - Transmitting distress signal while in test position
  
- False Alert – Malfunction – Electronics
  - Electronics malfunction
  - Non-GPS electronics malfunction



## False Alert - Mounting Failure (1 of 2)

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- Beacon false alert mounting failure categories:
  - Bracket
  - Release
  - Magnet
- A Yarbrough EPIRB False Alert Study in 2008 found that 67% of beacon false alerts were due to mounting failure



## False Alert - Mounting Failure (2 of 2)

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- False Alert – Mounting – Bracket
  - Strap or bracket failure
  - Beacon fell out of bracket
- False Alert – Mounting – Release
  - Hydrostatic release failure (?)
- False Alert – Mounting – Magnet
  - Switch magnet not effective or missing



# False Alert - Environmental Conditions

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- False Alert – Environmental Conditions
  - Extreme weather conditions
  - Hurricane/cyclone conditions, vessel knocked down, heavy seas, ice build-up
  - Presently, the “catch-all” category for when a beacon preforms as designed but no one is in distress



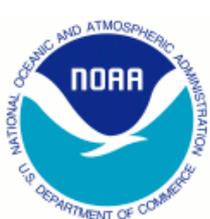
# False Alert – Environmental Conditions - YES





# False Alert – Environmental Conditions - NO





# False Alert - Unknown

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- False Alert – Reasons Unknown
  - Confirmed Beacon False Alert
  - No feedback on why activated
  - Investigation of beacon activation cause was inconclusive