UN/USA Training Course on Satellite Aided Search and Rescue
Miami Beach, FL
19 – 23 January 2009

Beacon Registration Databases
INTRODUCTION

- Requirements for Beacon Registration
- 406 MHz Beacon Population
- Registration Databases
  - Overview of Existing Databases
  - Overview of USA RGDB
REQUIREMENTS FOR BEACON REGISTRATION

• **IMO** - Assembly Resolution A.887(21) - “Establishment, Updating and Retrieval of the Information Contained in the Registration Databases for the Global Maritime Distress and Safety System (GMDSS)” was adopted on 25 November 1999 – includes 11 relevant provisions.

• **ICAO** - Annex 10 to the Convention on International Civil Aviation, Volume 3, Part II, Chapter 5 “Emergency Locator Transmitter (ELT) for Search and Rescue”:
  • paragraph 5.1.8: “States shall make arrangements for a 406 MHz ELT register. Register information regarding the ELT shall be immediately available to search and rescue authorities.”
  • paragraph 5.3.2.2: “The emergency locator transmitter shall be coded in accordance with either the aviation user protocol or one of the serialized user protocols described in Appendix 1 to this chapter, and shall be registered with the appropriate authority.”
• **ITU** has no recommendations, regulations, etc. on the establishment of beacon registration databases. However, ….., The vessels themselves need to be registered with the ITU's Maritime Mobile Access and Retrieval System (MARS) database. This on-line query database has been established in accordance with Resolution 340 (WRC-97) of the Radio Regulation and is intended to assist in search and rescue activities.

• **Cospas-Sarsat** - Section 3.5 of the DDP (C/S A.001): “It is essential that every country using 406 MHz beacons maintain a register where SAR agencies can obtain vital information at any time. Each country using 406 MHz beacons should make appropriate arrangements to ensure 24-hour access to their national register(s) by SAR services.”
BEACON POPULATION

Based on the Cospas-Sarsat Secretariat’s recent estimate:

- about 600,200 beacons operating at 406 MHz were in use at the end of 2007
- the population could reach about:
  - 1.3 million in the year 2011
  - 1.9 million in the year 2015
  - over 2 million in the year 2017
Beacon Population

406 MHz Beacon Population Forecast to 2018
(taken from JC-22/5/7 Secretariat)
REGISTRATION DATABASES

- Overview of Existing Databases
  - USA RGDB (Overview)
  - IBRD (Next Presentation)
OVERVIEW OF EXISTING DATABASES

- In 2008, 103 countries maintained 406 MHz beacon registers
- The majority of these are EPIRB databases
- Estimated registered beacons – 424,056 as of 12/31/07
Registration Databases

USA RGDB (Overview)

- NOAA USMCC requires a system that automates & facilitates processes for:
  - Registering 406 MHz emergency beacons
  - Handling anticipated dramatic increase in 406 MHz registrations after 01 February 2009
  - Increasing time for USMCC personnel to actively pursue contacting owners that have registrations with expired decals

- The life-and-death nature of SAR demands that the system:
  - Provide high reliability and system responsiveness flawlessly
  - Protect against viruses, hackers, and other threats

- Public policy adds requirements for:
  - Equal access for all operators and users
  - Privacy of personal data
  - Government Paperwork Elimination Act

- Cost-management considerations call for:
  - A COTS-intensive, low-maintenance design
  - Compatibility with existing USMCC hardware and system software
Registration Databases

USA RGDB (Overview)

NOAA 406 MHz BEACON REGISTRATION DATABASE SYSTEM

Beacon Owners

Please note that a Beacon ID is required to use the on-line system.

Click New Registration to register a new beacon.

Click Access Beacon Previously Registered By Mail to create a password for an existing beacon registration that was registered by mail.

Click Access Beacon to access existing beacon registration data.

Click Access Block of Beacons to access a block of existing beacons registration data.

Click Create Block Account to create a beacon block user account.

Click Forms to get electronic versions of beacon registration forms.

[ Home | Help | Feedback Survey | Contact Us | Privacy Policy ]

Other Links: [ NOAA | SARSAT.NOAA | NESDIS ]
Registration Databases

USA RGDB (Overview)

Official 406 MHz EPIRB Registration Form

New Beacon Registration Form
Note: * indicates required field(s)

**EPIRB Information**

*Beacon ID (Unique Identifier Number)*
ADCE08AD744006D
(15 digit character ID provided by EPIRB manufacturer)

Activation Type **CAT2**

*EPIRB Manufacturer*

*Model No*

**Owner/Operator Information**

*Name* [Field]

(Last, First, Middle Initial)

*Mailing Address* [Field]

*City* [Field]

*State* [Field] — *Province* [Field]

*ZIP (Postal) code* [Field] — *Country* **USA**

E-mail [Field]

**Telephone**

* [Field] — Home □ Work □ Cell □ Fax □ Other

Area Code [Field] — Home □ Work □ Cell □ Fax □ Other

Area Code [Field] — Home □ Work □ Cell □ Fax □ Other

Area Code [Field] — Home □ Work □ Cell □ Fax □ Other

Area Code [Field] — Home □ Work □ Cell □ Fax □ Other
USA RGDB (Overview)

<table>
<thead>
<tr>
<th>Acknowledge Confirmation Request</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beacon ID</td>
</tr>
<tr>
<td><strong>Owner’s name</strong> (Last, First, Middle Initial)</td>
</tr>
<tr>
<td>Owner’s telephone number (Home)</td>
</tr>
<tr>
<td>Current status</td>
</tr>
<tr>
<td>Select status</td>
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<tr>
<td></td>
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</tbody>
</table>

**Other Links:** [ NOAA | SARSAT-NOAA | NESDIS ]
### SAR User (search options)

- **Beacon Registration Type**: All, EPIRB
- **Beacon ID**: 
- **Vessel Name**: 
- **Aircraft Manufacturer**: 
- **Aircraft Model**: 
- **Owner's Name**: baker sam*
- **Registration Number**: 
- **Radio Call Sign**: 
- **Vehicle Type**: ?
- **Beacon Block ID**: 
- **MMSI**: 
- **Last Updated**: On, Before, After
- **Last Confirmation Date**: On, Before, After
- **Beacon Status**: All, Normal, Active
- **Sort by**: Beacon ID

### Search results: 1 - 5 of 5 registered beacon matches.

<table>
<thead>
<tr>
<th>Select</th>
<th>Beacon ID</th>
<th>Country Code</th>
<th>Beacon Type</th>
<th>Owner's Name</th>
<th>Vessel Name</th>
<th>Radio Call Sign</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>adcd0141bec04a3</td>
<td>USA</td>
<td>EPIRB</td>
<td>BAKER SAMUEL b</td>
<td>serefe</td>
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<td>EPIRB</td>
<td>BAKER SAMMY D</td>
<td>SEA DUCER II</td>
<td></td>
</tr>
</tbody>
</table>
Online system operational since August 11, 2003

As of January 1, 2009 – 225,007 beacons registered

Profile
67.9% EPIRBs
13.1% ELTs
18.9% PLBs
0.1% SSAS

30,184 new beacons added in CY 2008

Estimate 31,000 registrations in CY 2009

65% - 70% of beacon registration transactions are performed by beacon owners via online RGDB
Future Activities

- Implement an upgrade to the US 406 MHz Registration Data Base that incorporates proven technologies along with the latest IT Security controls.

- ‘Design-in’ redundancy to increase availability.

- Provide for electronic storage of hardcopy records to increase retrieval efficiency and decrease storage space requirements.
SUMMARY

• International Organizations (IMO & ICAO) have established basic requirements for beacon registration

• Beacon population continues to experience significant growth

• The US 406 MHz Beacon Registration Data Base continues to experience significant growth particularly in registration of ELTs and PLBs

• Not all countries have beacon registers or provide continuous access to existing databases

• To provide assistance to States, Cospas-Sarsat manages an International Beacon Registration Database (IBRD) that provides significant benefits to SAR forces and administrations