Radio Technical Commission for Maritime Services (RTCM)

Chris Hoffman
RTCM Board of Directors
Chairman RTCM Sub Committees SC110 & SC128

Beacon Manufacturers Workshop 2010

RTCM Overview

- RTCM is an international non-profit scientific, professional and educational organization
- Members are both government and non-government organizations
- Established in 1947 as a U.S. government advisory organization
- Now an independent organization with members from all over the world
- Headquartered in Arlington VA, (Washington DC)

RTCM Main Activities

- RTCMs main area of activity is related to commercial shipping and navigation and radiocommunications systems for these vessels

- It also works in other areas when mandated such as Differential GPS and Terrestrial Satellite Distress Alerting

- RTCMs main role is in developing standards, but it also plays a major part in national and international committees, information dissemination to its members and advising on legislation and regulatory changes

RTCM
SC110 Sub-Committee
Emergency Beacons
(EPIRBs and PLBs)
Update

RTCM Special Committee SC110
on Emergency Beacons

- SC110's primary role is to develop and maintain standards for Emergency Beacons – 406 MHz EPIRBs, PLBs and Ship Security Alert Systems (SSAS)

- It is also involved in:
  - The work of SC119 on Marine Survivor Locator Devices
  - The work of SC128 on Satellite Emergency Notification Devices
  - A joint committee with SC101 on VHF DSC Hand Portable Radios with GPS
  - Considering new technology, ideas and other related matters of interest to its members e.g. AIS EPIRB, C/S MEOSAR system
  - RTCM also plays a very active role in the work of Cospas-Sarsat and in particular in its yearly Joint Committee (JC) meetings

Current SC110 Main Work Areas

- Updating the RTCM 406 MHz PLB Standard to include GPS Simulator Testing of beacons with integral GPS

- Participating in the Cospas-Sarsat JC-24 Meeting

- Developing Input for the Experts Working Group on Next Generation Beacons for MEOSAR

- Considering AIS EPIRBs

- Working with NOAA on Beacon Registration Issues

- Battery Life Discussions

- Updating the RTCM 406 MHz EPIRB Standard, including adding new Ergonomics requirements and GPS Simulator Testing

Battery Life Discussions

- *T.007   A.2.3   Operating Lifetime at Minimum Temperature*
- *i.   the depletion in battery power resulting from normal battery loss of energy due to battery ageing over the rated life of the battery pack;* **at room temperature**

Battery Storage Temperature	Typical Annual Battery Capacity Loss
-20 C	0.1%
0 C	0.3%
20 C (Ambient)	1%
40 C	2.8%
60 C	7.1%

Battery Life Discussions
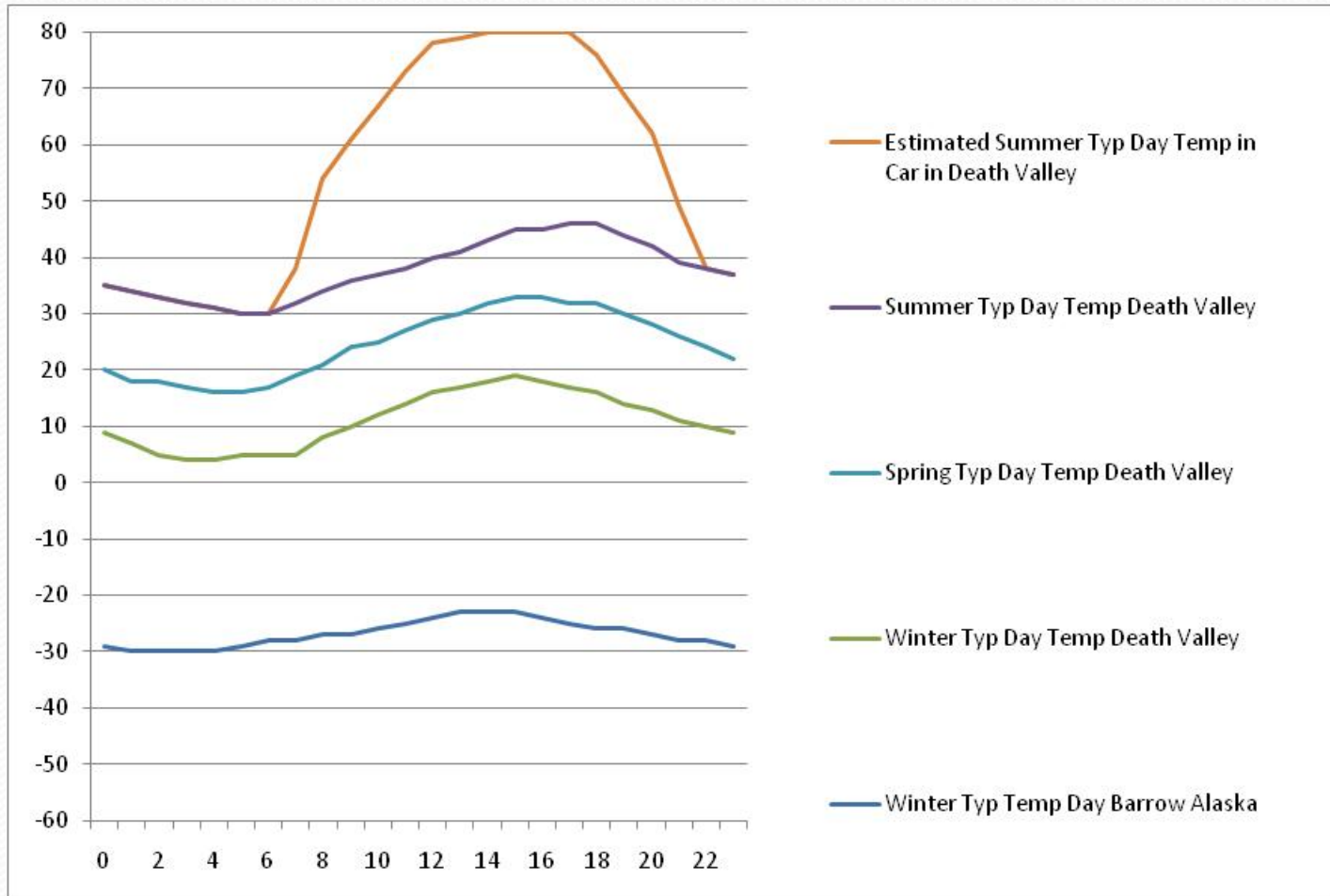
RTCM EPIRB Standard Update

- RTCM updating standard to bring it into line with latest issue of IEC 61097-2

- Updated standard will only address differences from the IEC standard
    - Internal Navigation Device Timing
    - GNSS Self Test
    - Inadvertent Activation
    - Incorrect Mounting
    - Ergonomics Requirements and Tests
    - Cold Thermal Shock Tests
    - Testing internal GPS Receivers using GPS Simulators

RTCM
SC128 Sub-Committee
Satellite Emergency Notification Devices (SEND)
and
IMO Activity
Update

RTCM SC128 SEND OVERVIEW

- Committee set up in Q4 2008, at the request of the USCG to establish standards for commercial satellite emergency notification and locating devices, abbreviated to SENDs by the committee

- SC128 is working closely with the US National Search And Rescue Committee (NSARC) who have formed a Working Group to look into communications interfaces with the emergency services and with the Iridium ProTECTS Alliance

- SC128 is drawing expertise and data from SC110 406 MHz PLB work

- SC128 first met Q1 2009 and typically meets quarterly

- SC128 SEND members include:

USCG	USAF	NOAA	NASA
FCC	NSS Canada	Globalstar	Inmarsat
Iridium	Manufacturers	Consumer Advocate	

RTCM SC128 SEND STANDARD

- Developing a generic standard for SEND's (both one way and two way comms devices)
- Standard will address:
  - Controls
  - Indicators
  - Operation
  - General Construction
  - Technical Characteristics
  - Environmental and Other Tests
- Standard will not cover technical features of satellite communications (e.g. Tx Power, Frequency, Modulation), the satellite provider is responsible for this area
- Standard will not address non-distress functionality, except where it impacts the distress alerting function
- Some back end service requirements may be added later

RTCM SC128 TYPES OF SEND

- The current draft of the standard addresses the following SEND variants:

- Categories of SEND:
  - Cat 1 SEND which must float
  - Cat 2 SEND which is not required to float
  - Cat 3 Fixed Vehicle Mounted SEND

- Classes of SEND:
  - Class 1 SEND which operates over the temperature range of -40C to +55C
  - Class 2 SEND which operates over the temperature range of -20C to +55C

- Thus currently there are 6 possible variants of SENDs

NOTE – We are working towards excluding from the standard devices that are not

RTCM SC128 SEND STATUS

- Current Status
  - A draft standard developed from the existing RTCM 406 MHz PLB standard exists, further work is still required, especially in the areas of device operation and testing
  - Current work includes assessing if the FCC E911 requirements apply to SENDs, setting distress transmission requirements and related emergency reserve battery life requirements
  - It is hoped to have a final draft available by the end of 2010, to be published as a voluntary RTCM standard early in 2011

- Future Work
  - Once completed and published it is anticipated that the FCC will adopt the standard and mandate it for SEND devices sold in the US
  - RTCM believes the standard could form the basis for an international standard in this area
  - Further work adding annexes to the standard or updating it may be required as new technology and devices come on line

Commercially Available Locating, Tracking and Emergency Notification Devices

Draft Circular Approved at COMSAR 14 in February it is currently under review by MSC 87 and is expected to be approved this week. Key Points are:

- Commercially available locating, tracking and emergency notification devices are not compliant with internationally accepted performance standards and operational criteria.
- These devices, and the services offered in conjunction with them, should meet performance standards and operational criteria equivalent to 406 MHz beacons if they are expected to provide equivalent functionality.
- If an emergency notification device or service falls short of these standards and criteria, then any limitations should be clearly indicated to the user by the manufacturer.
- States may require providers of non-406 MHz emergency notification devices and services to meet some minimum levels of performance and service.

Questions ?

For further information on RTCM and details of membership and the work of SC110 & SC128 visit

www.rtcm.org