



406 MHz EPIRB False Alerts

Cause and Prevention of False Alerts, an Update



Why does US Coast Guard care about EPIRB False Alerts?

- 96% 406 MHz EPIRB Alerts are false
- 85% Resolved by RCCs with registration and good detective work
- Increase in EPIRB population is bringing an increase in number of false alerts



Why does US Coast Guard care about EPIRB False Alerts?

- \$4 million in A/C time and fuel on 406 MHz EPIRB false alerts in 2008
- SAR crews put at risk
- SAR assets less available for actual distress
- Fatigues and dulls the SAR system



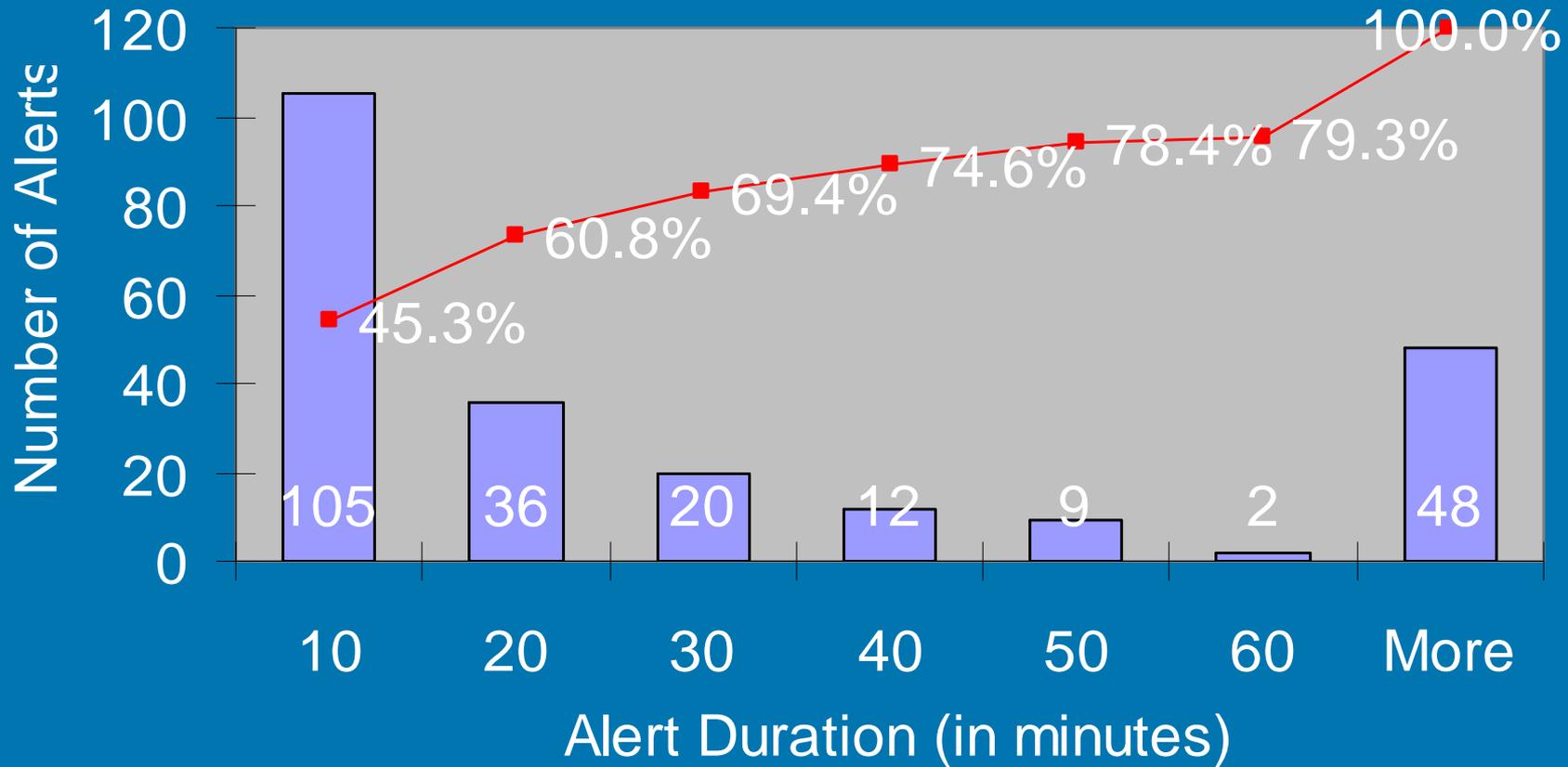
406 MHz DF

- The US Coast Guard now has capability to DF on 406 EPIRB signal.
- Taking the Search out of EPIRB Distress cases.
- DF not solving False Alert Problem.

Why?



How Long does a False Alerts Last?



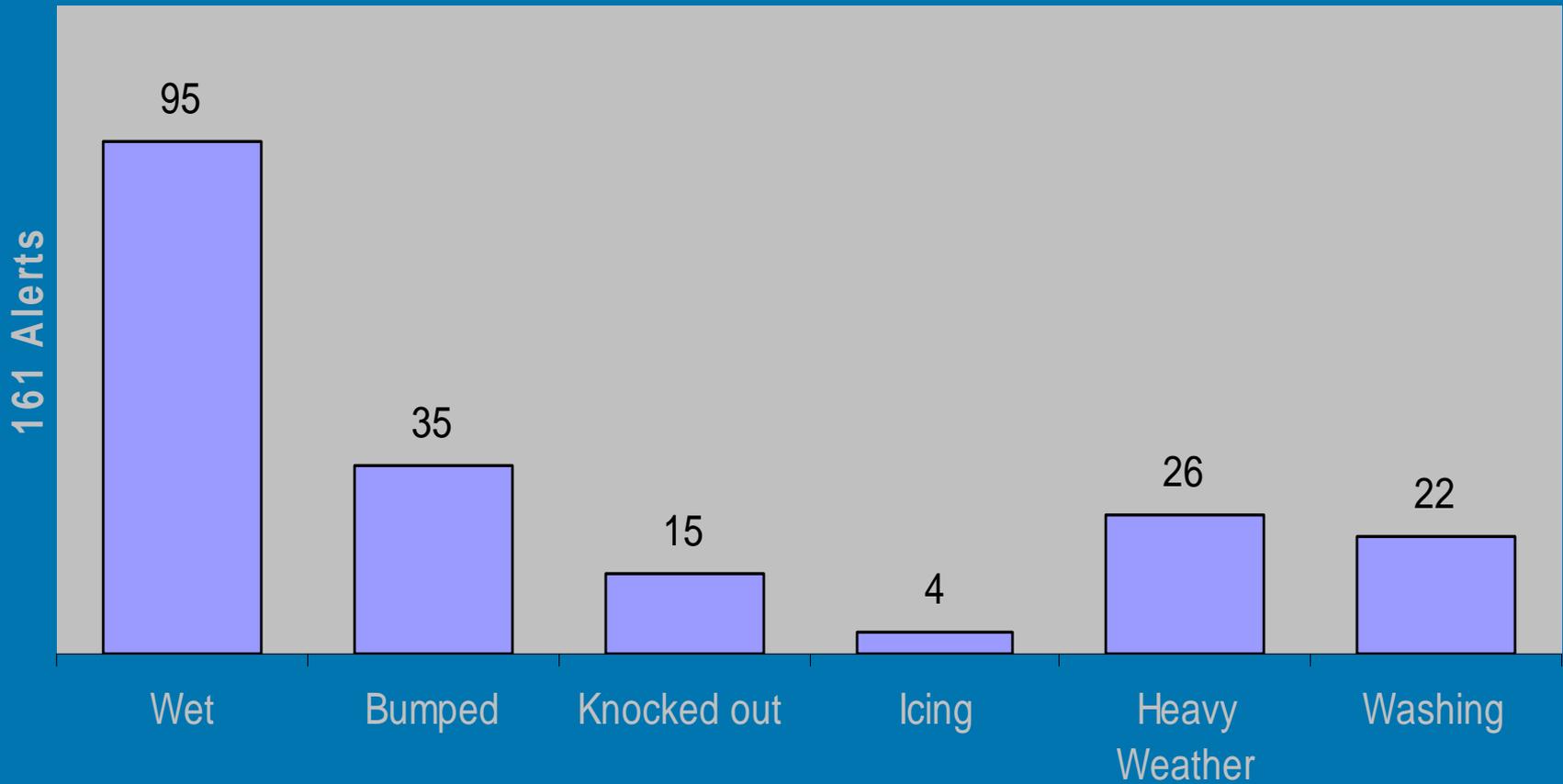


Operator Induced False Alerts

- 10% were attributed to **Testing** without following manufactures instructions, or other deliberate non-emergency activations
- 6% (13) were EPIRBs deliberately taken out of bracket and naked of any control of the wet sensor



False Alert and EPIRB in Bracket





EPIRB False Alerts

69% (161) Caused by Failure of “The bracket decoupling function” to control the EPIRB

–Observed with Category I and II



EPIRB False Alerts

69% (161) Activated when bracket should have prevented activation

Failure of “The bracket decoupling function” to control the EPIRB



Bracket problems observed in field by Coast Guard personnel

- Loose straps or mechanical holding device
- Missing pads or guides to hold beacons in place
- Missing or corroded magnets



Bracket problems observed in field by Coast Guard personnel (continued)

- Beacons being placed improperly in brackets by users
- Brackets not mounted in accordance with manufactures recommendations



RTCM Standard 11000.2

2.3.1.1



“The satellite EPIRB should **not** be accidentally activated or deactivated by conditions normally encountered in the maritime environment.”



RTCM Standard 11000.2



2.3.1.2

“The bracket decoupling function will guard against false alarms should the water-activation mechanism malfunction to an “on” mode. It will also prevent inadvertent activation due to the water activation mechanism becoming wet due to heavy seas or rain. ...

Both Category 1 and Category 2 satellite EPIRBs should have these features.”



EPIRB Operational Requirements

Not be activated or deactivated by conditions encountered in maritime environment

**69% Of
False Alerts**

**Bracket
Interface Failure**



Prevention of Inadvertent Activation

- Must be fitted with means to prevent inadvertent activation and deactivation.
- Not automatically activate when water washes over while in bracket.
- Most EPIRBs use bracket with magnet to disable activation circuit.



EPIRB as a System

Current Shore Based Maintenance for EPIRBs does not routinely examine the Bracket, (IMO MSC/Circ.1039)

Require or at least encourage the bracket to be included in an EPIRB service



EPIRB Testing

IMO MSC/Circ.1040, Guidelines on Annual Testing of 406 MHz Satellite EPIRBs, and manufacture's self test guidelines should be reassessed for detection of bracket failure



What can Beacon Manufacturers Do?

- Have Beacon Service Centers request bracket when beacon submitted for service.
- Check the bracket.
- Is the beacon – bracket interface functioning as designed?
- Help beacon owners with education
- Help beacon owners submit new Registration.



What can Beacon Manufacturers Do?

- Look at the feedback data from NOAA/SARSAT on false alerts for each of your beacons.
- Should you impose a Life Cycle on your beacons?



Feedback

- **NOAA/SARSAT** - Improve feedback mechanism to Beacon manufactures that provides as much detail as possible about:
 - exactly which Beacons have generated a False Alert. And
 - circumstances surrounding the event.
 - Consider providing IHDB access, or a limited and redacted version that excludes protected personal data.



False Alerts

False Alerts are a drain on the health of the EPIRB Distress Alerting System

There is no one cause of EPIRB False Alerts, and there is no one fix for the problem However ...

Several small corrective steps will make a positive difference in this problem



Questions?

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