



4 ALBERT EMBANKMENT,
LONDON SE1 7SR
Telephone: 071-735 7611
Telegrams: INTERMAR-LONDON SE1
Telex: 23588
Telefax: 071-587 3210

Ref. T2/6.05

CODING OF 406 MHz SATELLITE EPIRBs

1 The Sub-Committee on Life-Saving, Search and Rescue at its twenty-second session (18-22 February 1991) was informed by the United States (LSR 22/23 paragraphs 8.18 to 8.20) of a potential danger from wrong messages being received from 406 satellite EPIRBs which carry an incorrect activation code. Such messages could, when decoded, indicate that the EPIRB was manually activated while in fact the reverse was the case.

2 The Maritime Safety Committee noting, at its fifty-ninth session (MSC 59/33, paragraph 12.16), the opinion of the LSR Sub-Committee on the danger of wrong messages being received from 406 satellite EPIRBs which carry an incorrect activation code (bit 108), requested Members to instruct their authorities to investigate the coding practices of their EPIRB manufacturers, taking account of information contained in LSR 22/8/5, attached hereto, in order to avoid unnecessary SAR operations being mounted by SAR authorities as a result of such wrong messages.

* * *



SUB-COMMITTEE ON LIFESAVING,
SEARCH AND RESCUE -
22nd session
Agenda item 8

IMO

MATTERS CONCERNING SEARCH AND RESCUE, INCLUDING THOSE RELATED
TO THE 1979 SAR CONFERENCE ON THE INTRODUCTION OF THE GMDSS

406 MHz EPIRB coding

Note by the United States

1 This paper discusses a potential danger in interpretation of the 406 MHz satellite EPIRB digital message, Activation Code (bit 108). See Figure (1), Beacon Coding Scheme.

2 Bit 108 was originally intended to indicate whether the beacon was manually or automatically activated (i.e., bit 108 = 0, beacon was manually activated; bit 108 = 1, beacon was automatically activated). It was originally envisioned that the beacon would have the capability to automatically change this bit coding depending upon the actual method of activation. Most manufacturers felt meeting that requirement was not feasible. COSPAS-SARSAT evaluated this concern, and revised the definition of bit 108; i.e., bit 108 = 1 for beacons that can be activated both manually and automatically. Because of some confusion and inconsistency in the early generation of beacons on the coding of this bit, some beacon manufacturers assigned bit 108 = 0 for some beacons that can also be automatically activated.

3 The difference in this information can be very important to SAR authorities who must decide what emergency response is necessary. Decoding bit 108 as a "manual" activation indicates that someone physically turned on the beacon. It may have actually been an automatic beacon that floated free of the ship. Rescue forces may have departed the scene of an incident, perhaps leaving behind someone who was not located. Receiving a COSPAS-SARSAT alert after rescue units depart from the scene of the incident leaves SAR authorities with the possibility that missing persons may have been able to activate the beacon. Another possibility is that an EPIRB finally floated free sometime after the ship sank.

4 A recent Coast Guard case highlights this possibility: The 47-foot F/V VIVA capsized 980 miles southwest of California, U.S.A. One of the two persons aboard was rescued by the crew of another boat traveling with them. The captain was last seen trapped inside the cabin, and could not be recovered. A

satellite EPIRB alert was received four hours after the second vessel departed with only one survivor. The alert specified "manual" activation. SAR authorities learned from the beacon manufacturer that the EPIRB aboard the VIVA was an automatic type; additional searches would have been started if it had been a manually activated beacon.

5 National SAR authorities should realize that the beacon Activation Code entry has no guaranteed meaning, and EPIRB approving authorities should investigate the practices of their manufacturers.

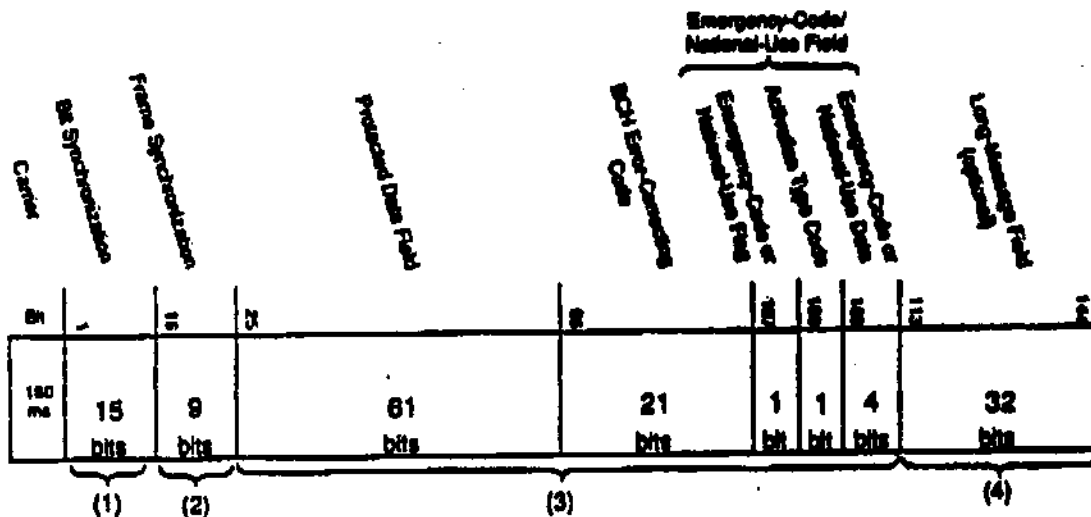


FIGURE 1
 GENERAL 406 MHz MESSAGE FORMAT