International Civil Aviation Organization

Seventh Meeting of the ICAO Asia/Pacific Search and Rescue Working Group (APSAR/WG/7)

Video Teleconference, 24 – 27 May 2022

Agenda Item 3: Global update

COSPAS-SARSAT – FALSE ALERTS

(Presented by New Zealand)

SUMMARY

This paper presents a summary for the year January 2021 to December 2021 of false 406 MHz Cospas-Sarsat alerts received by RCCNZ compared to real alerts received for a distress situation in the same period.

1. INTRODUCTION

1.1 At APSAR/WG/6 delegates were asked to provide information regarding false alerts from the Cospas-Sarsat satellite system. This information was gathered monthly by RCCNZ throughout 2021 and tabulated to provide a snap shot of one year's Cospas-Sarsat alerts.

2. DISCUSSION

2.1 False alerts for this paper are considered to be 406 MHz activations that did not result in a rescue of a person(s) in distress. SAR action may have been undertaken involving tasking of SRUs to resolve the incident or the beacon owner was contacted and the situation was resolved before SRUs were tasked. False activations are treated as real alerts until they can be confirmed as false. This can take minutes, if the beacon is registered correctly, to hours if no information is available.

2.2 Real Alerts are considered to be any deliberate 406MHz beacon activation that resulted in a person(s) being assisted/ rescued due to the activation of a beacon.

2.3 The reasons for the false activations have not been categorized but could have resulted from one of the following reasons; mishandling, activation during maintenance (ELTs), beacon malfunction, incorrect disposal, incorrect testing, water ingress etc.

2.4 The introduction of the MEOSAR system has been a beneficial improvement of the system but it has also meant an increase in false activation detections due to near real time detection and world-wide coverage.

2.5 The following table sets out the total number of 406 MHz beacon alerts received by RCCNZ in 2021 for all types of beacons (EPIRB, ELT, PLB) by month and whether the activation was associated with a real distress or a false alert. The data relates to all beacons alerts received by RCCNZ whether activated in the NZSRR (any country of registration) or in another SRR (NZ coded beacons). The SEND data is provided for comparison and not included in the total percentages. New Zealand has a lower percentage of false alerts than the data provided by Cospas-Sarsat for the rest of the world, although the numbers are still high for ELTs and EPIRBs.

2.6 **Table 1:** Beacon Statistics 2021

Beacon Statistics 2021								
Month	**EPIRB**		**ELT**		**PLB**		SEND	
	Real	**False**	**Real**	**False**	**Real**	**False**	Real	False
January	2	11	0	4	39	20	8	0
February	3	19	1	15	24	21	5	2
March	2	23	1	10	46	26	6	0
April	3	15	2	8	39	22	3	0
May	3	23	1	8	17	18	2	1
June	1	16	1	14	22	15	3	1
July	2	21	1	14	13	21	3	1
August	0	14	0	8	6	17	0	0
September	0	14	1	14	13	11	2	0
October	1	18	3	12	21	36	5	2
November	3	17	0	15	25	30	5	0
December	0	19	0	14	31	35	6	1
Total	**20**	**210**	**11**	**136**	**296**	**272**	48	8
Total by group	230		147		568		56	
% of false activations	91%		93%		48%		14%	
Total % of false activations	77%							

Total Incidents 2021 – 1132

Total 406 MHz beacon incidents – 945

Percentage of 406 MHz beacon initiated incidents to other incidents 83%

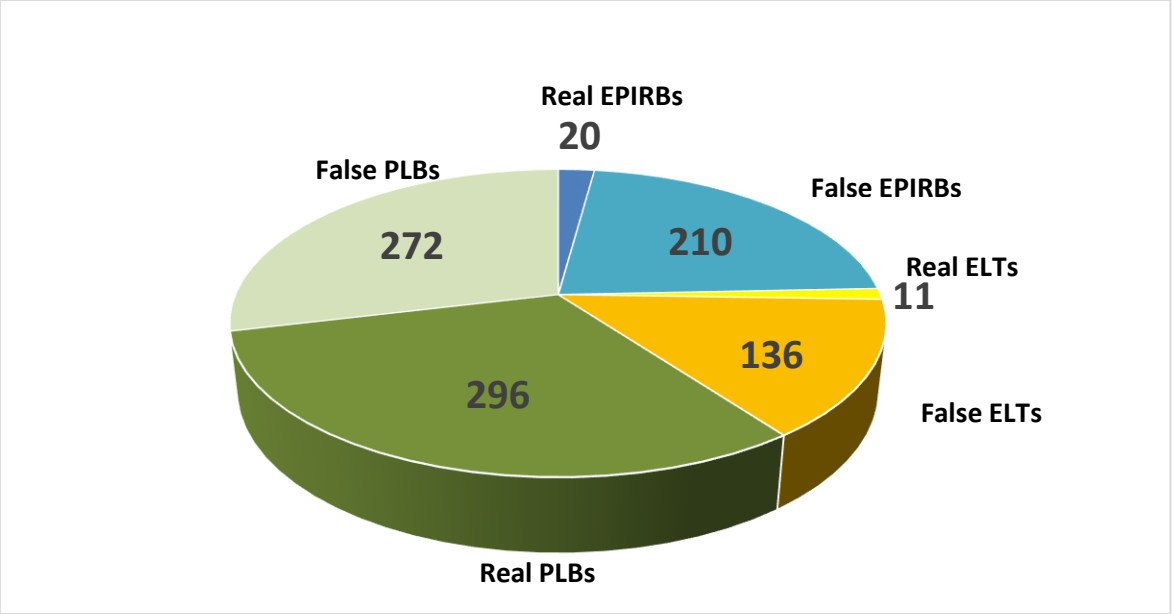

Figure 1. Total of real alerts to false activations by beacon type

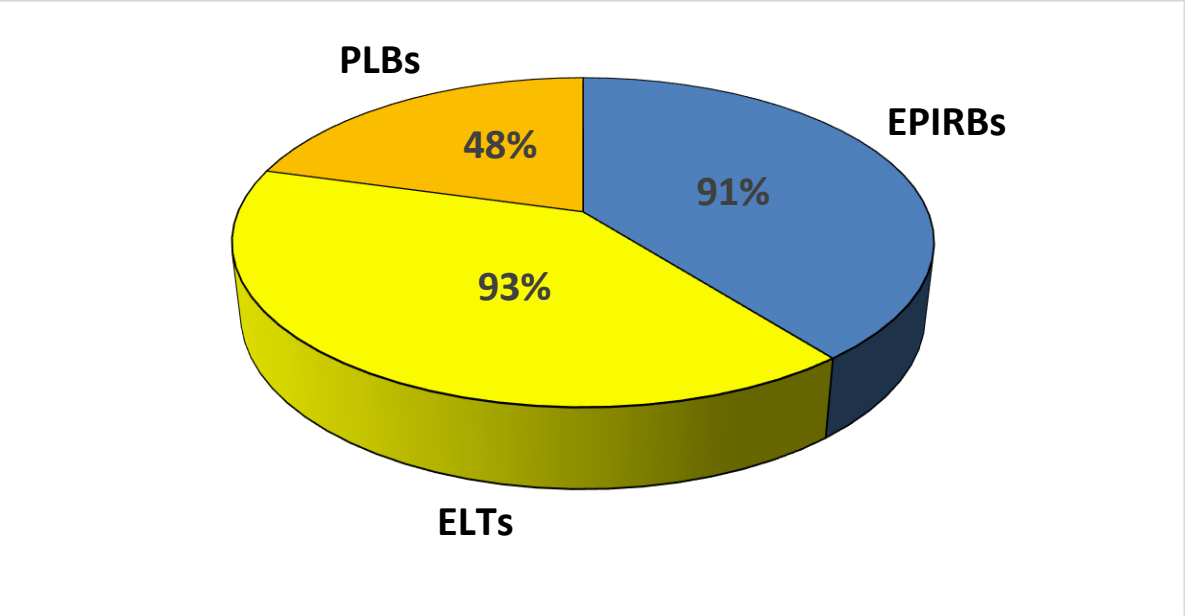

Figure 2. False beacon activations by type

2.7 Comparison with data for first quarter of 2022

Beacon Statistics 2022								
Month	**EPIRB**		**ELT**		**PLB**		SEND	
	Real	**False**	**Real**	**False**	**Real**	**False**	Real	False
January	1	29	0	12	36	29	10	0
February	1	18	1	10	36	28	15	1
March	4	23	2	7	34	27	11	1
Total	**6**	**70**	**3**	**29**	**107**	**85**	37	2
Total by group	76		32		192		39	
% of false activations	92%		91%		44%		5%	
Total % of false activations	76%							

Table 2: First quarter Beacon Statistics 2022

2.8 As a comparison for the first quarter of 2022, the percentages are very similar and therefore it can be considered that the figures will remain similar across years.

Total Incidents 2022 (to end March) – 367

Total 406 MHz beacon incidents – 300

Percentage of 406 MHz beacon initiated incidents to other incidents 82%

2.9 New Zealand has a high percentage of PLBs in use compared to other types of beacons due to the nature of the country and the high number of people engaged in outdoor pursuits. It also reflects the country wide media campaigns encouraging people to be prepared when engaged in these activities and to take a PLB.

2.10 There has been a noticeable increase in the number of false alert associated with PLBs over the last couple of years. This is in part due to the large number of PLBs in New Zealand but also due to the introduction of two new PLBs to the market which appear to have design faults leading to false alerts. These problems have been raised with the manufactures. One brand is no longer in production but still in use.

2.11 New Zealand has approximately 140,000 406 MHz beacons of all types in use and registered, an unknown percentage of which are incorrectly registered. It is estimated that approximately another 30% are unregistered. RCCNZ has developed a web based 406 database where beacon owners can register beacons or change contact details - see www.beacon.org.nz . The resolution of false alerts is greatly enhanced if the beacon is registered correctly.

2.12 Work continues across all sectors of New Zealand SAR to work with owners of beacons through promotional engagement to remind them of what to do in the case of an accidental activation and to ensure their beacon is correctly registered. This involves attendance at Boat and Outdoor Shows where RCCNZ staff engage with the public; published articles focusing on specific users i.e. light aviation, recreational boating or outdoor pursuits; direct contact with aircraft engineers who maintain and fit ELTs; and with groups that are known to use beacons i.e. tramping and hunting organizations.

2.13 New Zealand SAR continues to promote the use of 406 MHz beacons for use across the land, sea and air environments and this can be confirmed by the number of SAR incidents that RCCNZ is involved with that are supported by Cospas-Sarsat alerts. This number is growing every year.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper; and

b) discuss any relevant matters as appropriate.

…….