International Civil Aviation Organization

Third Meeting of the Asia/Pacific Regional Search and Rescue Task Force (APSAR/TF/3)

Maldives, 25 – 29 January 2015

Agenda Item 3: Global update

STATUS AND DEVELOPMENTS IN COSPAS-SARSAT

(Presented by International Cospas-Sarsat Programme)

SUMMARY

This document provides a status report on the Cospas-Sarsat System, including System operations, significant developments, space and ground segments, beacons, false alerts and results of MCC-SPOC communication tests.

1. INTRODUCTION

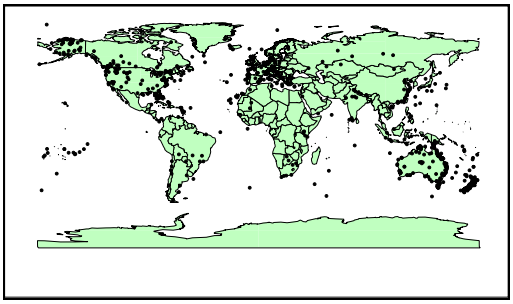
1.1 This document provides a status report on the Cospas-Sarsat System, including System operations, significant developments, space and ground segments, beacons, false alerts and results of MCC-SPOC communication tests.

2. DISCUSSION

System Operation

2.1 In 2013 Cospas-Sarsat alert data assisted in 720 distress incidents (634 in 2012) and 2,156 persons were rescued (2,029 in 2012). Since September 1982, the Cospas-Sarsat System has provided assistance in rescuing at least 37,211 persons in 10,385 SAR events. For aviation, Cospas-Sarsat assisted in 153 incidents, involving the rescue of 348 persons. Cospas-Sarsat provided the only alert in 23 aviation incidents, and the first alert in 65 incidents.

2.2 The geographic distribution of all reported SAR events for which Cospas-Sarsat alert data was used in 2013 is presented in **Figure 1** and the distribution of all SAR events (maritime, aviation and PLB) for the period from January to December 2013 is shown at **Figure 2**. Participants often provide recent SAR cases supported by Cospas-Sarsat for publication on the Cospas-Sarsat website and Facebook page. APSAR/TF participants are invited to contribute case stories and monitor this page.



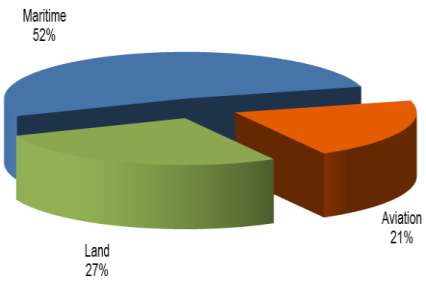


Figure 1: Geographic Distribution of SAR Events; **Figure 2**: Type of SAR Events (Jan – Dec 2013)

2.3 **Figure 3** shows the number of SAR events and persons rescued with the assistance of Cospas-Sarsat alert data for the period from January 1994 to December 2013.

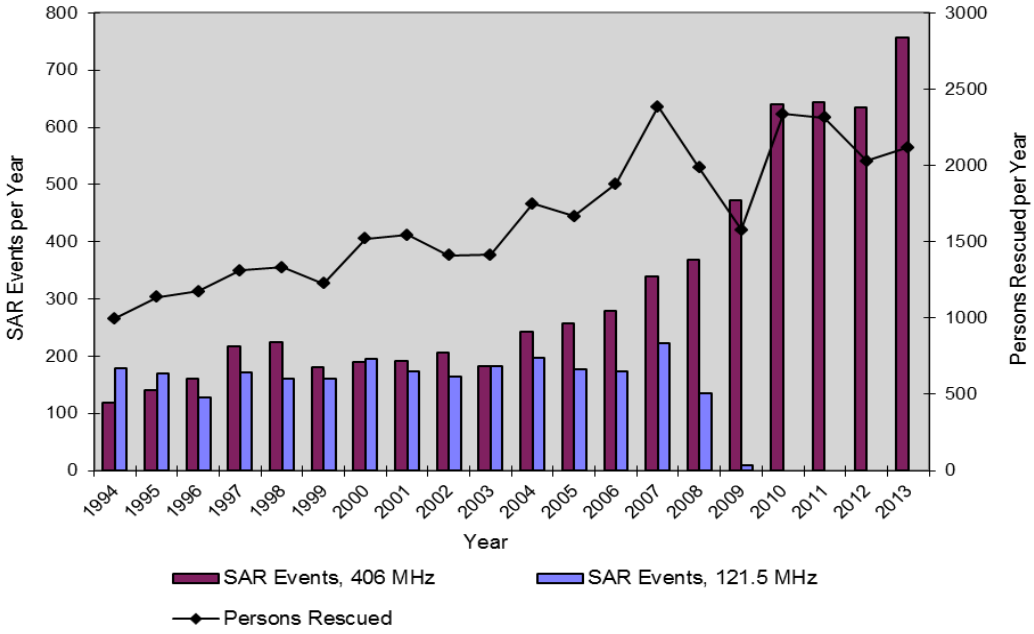


Figure 3: Number of SAR Events and Persons Rescued with the Assistance of Cospas-Sarsat Alert Data (January 1994 to December 2013)

False Alerts

2.4 Based on the data provided by Participants, Cospas-Sarsat calculates two false alert rates, identified as the "SAR false alert rate" and the "beacon false alert rate". The SAR false alert rate, characterising the impact of false alerts on SAR services, is the percentage of false alerts plus undetermined alerts (no person in distress found; no beacon found) over the total number of alerts transmitted to SAR authorities. Table 1 below shows the evolution of the false alert rate computed from a SAR perspective. Table 2 below shows the evolution of the 406 MHz beacon false alert rate (ratio of false plus undetermined alerts over the beacon population) since 2009. In 2013, the false alert rate was 95%, i.e. about one real alert in 20 alerts received.

Year	Rate
2009	96.7%
2010	95.3%
2011	96.3%
2012	96.0%
2013	95.0%

Year	EPIRBs	ELTs	PLBs
2009	1.2%	8.5%	0.6%
2010	1.2%	8.4%	0.6%
2011	1.1%	5.3%	0.6%
2012	0.9%	4.9%	0.4%
2013	0.9%	5.0%	0.4%

Table 1: SAR False Alert Rate; **Table 2**: 406 MHz Beacon False Alert Rate

2.5 Note that ELTs are a significantly disproportionate contributor to false alerts. This appears to be due to training and information issues for cockpit crews and maintenance personnel, who activate beacons for testing without realizing that all transmitted alert signals are treated as real. In part as a result of incidents where ELTs fail to transmit a burst before destruction in fire or submersion in water, the "wait" time for beacon first-burst transmission is being reduced from 50 seconds to 3 seconds in the next generation of beacons. Without proper training of cockpit crews and maintenance personnel, this could lead to an increase in false aviation-related alerts.

Analysis of Changes in System Statistics Affecting False Alert Statistics

2.6 In 2011 a new method of estimating total beacon population was adopted:

Registered beacon population / Registration rate (%) x 100 = Total Beacon Population, where Registration Rate = Number of Detections / Number of Detected Beacons that are Registered.

2.7 This new methodology particularly affected the ELT population, where division of the registered population by the low registration rate shown in some cases for ELTs resulted in a large increase in the beacon population. In 2012, very low registration rates (those calculated to be less than 40%) were replaced with a standard registration rate of 70%, when other data did not indicate the real registration rate was very low. These changes in calculation of ELT population had a significant impact on the ELT false alert rate; however, the ELT false alert rate remains much higher than that of other beacon types.

406-MHz Beacons

2.8 Based on information received from manufacturers on beacon production and a standard assumption made about beacons removed from the market at the end of an assumed ten-year service life, there were approximately 1,600,000 406-MHz beacons in use worldwide at the end of 2013, up 6.7% from 2012. The rate of beacon population growth in 2013 was lower than in 2012 (7.5%). The production of beacons capable of acquiring position data from radionavigation satellites (such as GPS and Glonass) and encoding this position information into the transmitted alert data ("location protocol beacons") increased marginally from 61.4% in 2012 to 67.7% in 2013. A performance measure instituted by Cospas-Sarsat in 2009 assesses "percentage of detected beacons that are registered". This data is shown in Table 3.

Year	EPIRB		ELT		PLB		Totals	
	Beacons registered / Number of detections	**Percent (%)**	**Beacons registered / Number of detections**	**Percent (%)**	**Beacons registered / Number of detections**	**Percent (%)**	**Beacons registered / Number of detections**	**Percent (%)**
2011	4,879 / 6,264	77.9	6,631 / 10,102	65.6	699 / 909	76.9	13,000 / 18,325	70.9
2012	5,383/ 6,699	80.4	6,616 / 10,056	65.8	952 / 1,242	76.6	13,957 / 18,003	72.0
2013	5,362 / 7,126	75.2	6,997 / 10,867	63.4	1,135 / 1,611	70.4	13,534 / 19,564	69.2

Table 3: Percentage of Detected Beacons that are Registered (2011 - 2013)

2.9 Cospas-Sarsat operates the International 406-MHz Beacon Registration Database (IBRD, www.406registration.com) which is freely available to users with no access to national registration facilities. By allowing their beacon users to register beacons in the IBRD, Administrations help to facilitate proper registration by beacon owners while avoiding administrative costs and inconvenience to their governments. Administrations may also avail themselves of the facility to upload their national beacon registration data to the IBRD to ensure that it is available 24/7 to other SAR services when they receive alerts from active beacons in their SAR area of responsibility. As at 1 December 2014, there were 48,341 beacons registered in the IBRD (38,991 at 1 August 2013) from 132 Administrations. On average 326 SAR users per month log into the IBRD to search for beacon registration information.

2.10 At the first meeting of the newly-formed IMO Sub-Committee on Navigation, Communications and Search and Rescue (NCSR 1), the Sub-Committee "having considered Cospas-Sarsat proposed draft amendments (NCSR 1/18/2) to MSC.1/Circ.1210 on Guidance on Cospas-Sarsat International 406 MHz Beacon Registration Database (IBRD), prepared [a] draft revised circular and invited the Sub-Committee to endorse it with a view to approval by the [Maritime Safety Committee (MSC)]."

2.11 At its Ninety-fourth Session (17-21 November 2014), the MSC [Section 9.32 of the MSC draft Report, MSC 94/WP.1] "approved MSC.1/Circ.[1210/Rev.1] on Guidance on the Cospas-Sarsat International 406 MHz Beacon Registration Database (IBRD)". This revised guidance is included as Attachment 1 to this document, and also is largely applicable to ICAO and the aviation community.

The LEOSAR and GEOSAR Systems

2.12 As of 1 December 2014, five LEOSAR spacecraft were in operation: Sarsat-7, Sarsat-10, Sarsat-11, Sarsat-12 and Sarsat-13. Sarsat-8 was decommissioned on 8 June 2014 after a spacecraft bus failure. Planned LEOSAR launches include the Russian Cospas-13 and Cospas-14 in 2016 and 2017 respectively, and the U.S. LEOSAR program in the process of planning and funding of a dedicated LEO satellite to be launched into an ascending early afternoon orbit, no earlier than 2019.

2.13 Seven satellites operating at full operational capability (FOC) comprise the GEOSAR space segment as at 1 December 2014: two Indian geostationary satellites, INSAT-3A at 93.5º E and INSAT-3D at 82º E; two U.S. geostationary satellites, GOES-15 (West) at 135º W and GOES-13 (East) at 75º W; two Eumetsat geostationary satellites, MSG-2 (9.5° E) and MSG-3 (0°); and one Russian geostationary satellite Electro-L1 operated at 76º E. Russia's Louch-5A remains under test at position 167ºE, with New Zealand, the United States and Australia supporting Russia in evaluating the Louch GEOSAR performance, with an aim of commissioning the satellite into the GEOSAR constellation. On 28 April 2014 Russia launched another Louch-series geostationary satellite (Louch-5V), which remains under IOV test. The GEOSAR constellation will be further maintained with the anticipated launch of MSG-4 (2015), GOES-R (2016) and GOES-S (2017).

2.14 As at 1 December 2014, 53 LEOLUTs, 23 GEOLUTs and 31 MCCs were in operation.

Performance Measurement: Cospas-Sarsat Assisted SAR Events

2.15 As part of its Quality Management System, and to meet the goals and objectives of its strategic plan, Cospas-Sarsat developed a set of performance measures. Because the purpose of Cospas-Sarsat is to assist in the saving of lives, a performance measure of the evolution of the number of SAR events annually where Cospas-Sarsat assisted and provided the only alert was developed to evaluate the relevance of the System. **Figure 4** provides twenty years of data and clearly indicates the continued relevance of the Cospas-Sarsat System.

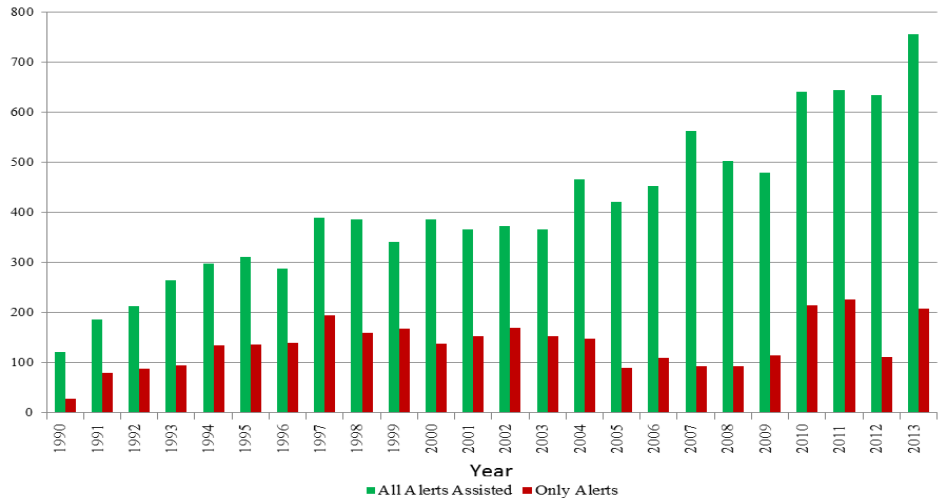


Figure 4: Annual Number of SAR Events where Cospas-Sarsat Assisted or Provided the Only Alert (1990 - 2013)

SPOC Communication Tests

2.16 As a result of actions taken to address the matter of non-responsive SPOCs, Cospas-Sarsat started in 2008 regular testing of MCC/SPOC communications. The following information in **Table 4** is a summary of results for the period October 2008 to December 2014. For that period, 22 of 31 operational MCCs reported results of MCC/SPOC communication tests results (some MCCs do not support SPOCs outside of their country and therefore are not required to conduct these tests). A total of 15,203 unique tests have been conducted to date.

	2014	2014	2013	2012	2011	2010
Number of SPOCs tested by MCCs	152/236	64.4%	68.2%			
Non-responsive SPOCs (no acknowledgements)	20	13.1%	8.7%	10.1%	10.0%	7.8%
SPOCs with less than 20% successful tests	6	3.9%	6.2%	4.7%	6.8%	10.3%
SPOCs with successful tests between 20% and 50%	13	8.6%	8.1%	9.5%	7.5%	7.2%

Table 4: SPOC Communication Test Results (2010 - December 2014)

2.17 For the purpose of these statistics, a success means that the requested positive feedback (not an automatic acknowledgement) was received from the SPOC. Non-responsive SPOCs were those SPOCs which did not provide any response. When available, several communication links (e.g., AFTN, Fax, Phone, E-mail, FTP, Telex, X.25) were tested each month. In many cases, each available link was tested separately and counted as a unique test. The list of non-responsive SPOCs is provided in **Table 5** below.

Non-Responsive SPOCs (No response to tests)	**Rarely Responsive SPOCs** (Less than 20% successful tests)	**SPOCs with Low Success Ratio** (Between 20 and 50% successful tests)
Benin, Cameroon, Central African Republic, Chad, Congo (Republic of the), Côte d'Ivoire, Djibouti, Equatorial Guinea, Gabonese Republic, Ghana, Guinea (Republic of), Guinea-Bissau, Liberia, Mali, Mozambique, Rwanda, Sao Tome and Principe, Sierra Leone, Tajikistan, Turkmenistan	Cape Verde	Angola

Table 5: 2014 List of Non-Responsive SPOCs (based on results until August 2014)

2.18 Available results clearly show that about 25% of all tested SPOCs remain insufficiently responsive or non-responsive. The majority of less responsive SPOCs are found in the African region. At the 2014 South Central Data Distribution Region Meeting, based on an input document from Spain, it was noted that only 6 of the 19 Spanish SPOCs, all located in northern Africa, had manually acknowledged receipt of test messages within 30 minutes, however 9 of the 19 SPOCs often acknowledged the test message outside of the required 30 minutes time frame.

2.19 Spain remarked that although monthly communication tests were a very useful tool to check the available links, the results obtained had been worse in 2013 than in previous years. Spain noted with gratitude the offer of ICAO to assist in determining the correct points of contact in those countries during the course of routine ICAO audits in the region.

2.20 For the Asia-Pacific region the good news is that the APSAR community has no Administrations on the Table 5 list of non-responsive SPOCs. The bad news, however, is that the SAR Compatibility Matrix shows that, in their own judgments, many Administrations view themselves as deficient with respect to their implementation of Cospas-Sarsat alert facilities and procedures. Cospas-Sarsat is inviting Administrations to share copies of any SPOC agreements that might be in place, with a view towards developing a "model" Memorandum of Agreement between MCCs and supported SPOCs to, among other things, assist in improving communications between MCCs and SPOCs.

Developments in the work of the Cospas-Sarsat Programme

2.21 Since the APSAR/TF/2 meeting, Cospas-Sarsat has held the following meetings:

- A Task Group Meeting on Second Generation 406 MHz Beacon Specifications, 10 - 14 February 2014;
- A Task Group Meeting on the MEOSAR Demonstration and Evaluation (D&E) Phase, 17 - 21 March 2014;
- The Fifty-Second Session of the Closed Council, 15 - 17 April 2014;
- The Twenty-Eighth Meeting of the Cospas-Sarsat Joint Committee, 16 - 25 June 2014;
- An Experts Working Group Meeting on the MEOSAR Demonstration and Evaluation (D&E) Test Results (EWG-1/2014), 8 - 12 September 2014;
- The Fifty-Third Session of the Closed Council, 23 - 24 October 2014; and
- The Fifty-Third Session of the Open Council, 27 - 30 October 2014.

2.22 Subsequent to the APSAR/TF/3 meeting, Cospas-Sarsat has a full calendar of seven meetings planned for 2015. In order to have sufficient time for completion and review of MEOSAR D&E work (see section 2.10, below) prior to declarations that the Cospas-Sarsat Council may make with respect to the operational availability of the MEOSAR system, the Council adopted an exceptional schedule for the Cospas-Sarsat Programme for the year 2015. This schedule is at **Attachment 2**.

System Enhancements

2.23 Future enhancements to System operations continued to focus primarily on development of technical specifications for second-generation beacons and the next-generation space system, MEOSAR. Highlights of developments of interest to SAR providers agreed at the Twenty-Eighth Meeting of the Cospas-Sarsat Joint Committee, which were reviewed and generally agreed at the Fifty-Third Session of the Open Council, including:

- Changes to document C/S T.001 (Specification for Cospas-Sarsat 406 MHz Distress Beacons) to require that location-protocol beacons (those with an available GNSS receiver) first submitted for type approval testing after 1 November 2015 provide GNSS position updates in the beacon message such that the navigation device shall make at least one attempt every 15 minutes to obtain an initial location; until an initial location is obtained or 2 hours has passed after beacon activation; and after an

initial location is obtained or 2 hours has passed after beacon activation without obtaining an initial location, the navigation device shall attempt location updates according to the following regime:

- In the first 6 hours after beacon activation the navigation device shall attempt at least one location update every 30 minutes.
- Between 6 hours after beacon activation and until the end of the declared operating lifetime (depending on beacon type) a location update shall be attempted at least every 60 minutes, after this time further location updates are not mandatory.

- Inclusion in the Handbook of Beacon Regulations (document C/S S.007) and on the Cospas-Sarsat website a table depicting allowed usage of PLBs in the terrestrial, maritime and aviation environments for each country.
- A request that the Cospas-Sarsat Secretariat transmit a liaison statement to IMO, in time for consideration by the ICAO/IMO JWG on SAR, regarding a modification to IMO Resolution A.810(19) that would allow the duty cycle of the 121.5 MHz homing signal to be reduced to that specified in ITU Recommendation ITU-R M.690-1, to enable the interleaving of other current- and emerging-technology signals and methodologies that offer the potential for a more capable and effective homing process, while concurrently preserving the 121.5-MHz legacy homing signal for those administrations that are currently dependent on that signal for homing and on-scene locating.
- A decision that future technical meetings on MEOSAR should review and evaluate the best procedures for merging MEOSAR data with the operational LEOSAR and GEOSAR data.
- Noting that the ICAO/IMO Joint Working Group on SAR had received the request from Cospas-Sarsat to indicate how long data should be kept available for the benefit of accident investigations in order for Cospas-Sarsat to plan for the storage of data for such an amount of time as might be needed, and the JWG's Recommendation 21/4 that ICAO and IMO provide the required period of time for storage of Cospas-Sarsat data related to accident investigations.
- Regarding liaison between IMO, ICAO and Cospas-Sarsat, the Fifty-Third Session of the Open Council, following consideration of recommendations of the Joint Committee, decided to:
  - authorize the Secretariat to provide each JWG meeting with the Report of the immediately previous Joint Committee meeting as a means to provide context for the work of the JWG and its recommendations to ICAO and IMO, with the Secretariat carefully labelling the document to indicate that it was for preliminary information and that the recommendations were subject to future Council consideration, and
  - authorize task group and experts working group chairs, together with the Secretariat, to, within available resources, provide to ICAO and IMO a summary of the group's work, which most simply might take the form of extracts of the meeting report that would be of relevance to ICAO and IMO, carefully labelling the document to indicate that it was for preliminary information and that the recommendations were subject to future Council consideration.

2.24 Again, it is important to emphasize that these decisions are subject to the availability of sufficient resources (for example in the preparation of summaries of conclusions from meetings).

Status of the MEOSAR System Development

2.25 MEOSAR development continues, following the January 2013 commencement of the technical tests of Phase I of the MEOSAR Demonstration and Evaluation (D&E). The JC-28 Meeting, EWG-1/2014 and the Fifty-Third Session of the Open Council discussed D&E test results available to date, including results from operational testing which commenced with Phase II of the D&E in April 2014. The Council decided to introduce into the MEOSAR implementation timeline a new, intermediate phase prior to the Initial Operational Capability (IOC), defined as the Early Operational Capability (EOC). The Council anticipates a decision during its last session of 2015 (planned for December) of whether and when to enter MEOSAR EOC, with a decision whether to enter IOC to be taken at the last Council session in 2016, with an effective date anticipated for January 2017.

2.26 The MEOSAR satellite constellation currently includes three operational L-band satellites (Glonass-K1, and Galileo IOV-3 and IOV-4 satellites) and 16 GPS II satellites carrying experimental DASS repeaters with an S-band downlink used by the Cospas-Sarsat Programme. The 16th DASS payload was launched aboard the GPS IIF-8 satellite on 29 October 2014. It is reported that Galileo IOV-4 has been taken out of service following a problem that rendered it unable to use two frequencies (that may have been caused by a defective antenna) and an investigation is continuing, with the future disposition of this spacecraft uncertain. The first two Galileo FOC satellites (carrying L-band SAR payloads) were launched on 22 August, however a launch anomaly occurred and the operational capability of these satellites remains uncertain. It is reported that early in December one of these satellites was successfully moved into a higher orbit with sufficient fuel to operate for 12 years. A similar orbital manoeuvre was planned for the second one by late December. The Galileo Programme intents to complete the in-orbit testing of the first two FOC satellites before launching additional ones. Between six and eight additional FOC satellites are expected to be launched in 2015. The USA plans to carry Canada-supplied L-band SAR repeaters on 24 GPS satellites beginning with the launch of the ninth GPS Block III satellite, anticipated for deployment as early as 2020.

2.27 The following have announced the planned implementation of an operational MEOSAR ground segment: Algeria, Argentina, Australia, Brazil1, Canada*, China, the European Commission* (Cyprus*, France (used for Galileo testing), Norway*, Spain*), France*, India, Japan*, New Zealand, Pakistan, Peru, Russia*, South Africa, Turkey*, UK*, UAE and USA*.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) discuss problems with SPOC communications and false alerts;

c) discuss 406-MHz Beacon Registration issues;

d) discuss the Cospas-Sarsat and MEOSAR development and how that relates to the SAR Plan; and

e) discuss any relevant matters as appropriate.

…….

[1] These Administrations are currently participating in the MEOSAR D&E Phase using MEOSAR experimental ground segment equipment (either a MEOLUT or a MEOSAR-ready MCC).

Attachment 1

The IMO Maritime Safety Committee approved *Guidance on the Cospas-Sarsat International 406 MHz Beacon Registration Database (IBRD)*, MSC.1/Circ.1210/Rev.1

GUIDANCE ON THE COSPAS-SARSAT INTERNATIONAL 406 MHz BEACON REGISTRATION DATABASE

Need for EPIRB Registration and Associated Databases

1 Emergency position-indicating radio beacons (EPIRBs) perform distress alerting and other functions to support search and rescue (SAR) services covered by the 1979 International Convention on Maritime Search and Rescue, as amended, for any person in distress at sea, and the 1974 International Convention on Safety of Life at Sea (SOLAS), as amended, requires EPIRB carriage (Chapter IV, regulation 7.6) and registration.

2 The provisions relevant to EPIRB registration in Chapter IV, regulation 5-1 apply to all ships on all voyages, and are as follows:

"Each Contracting Government undertakes to ensure that suitable arrangements are made for registering global maritime distress and safety system (GMDSS) identities and for making information on these identities available to rescue co-ordination centres on a 24-hour basis. Where appropriate, international organizations maintaining a registry of these identities shall be notified by the Contracting Government of these assignments."

3 It is crucial that 406 MHz EPIRBs be registered, and that the registration data be available to SAR authorities at all times. Experience has shown that EPIRB registration data is either critically important or otherwise often helpful in the majority of SAR cases involving an EPIRB alert.

4 406 MHz EPIRBs should be registered regardless of whether they are carried aboard ships or other marine craft, and registrations should be reinforced by national requirements.

5 It is essential that IMO Member States provide a readily-accessible mechanism (preferably one that is available by internet as well as other conventional means) to enable EPIRB owners to fulfill their obligation to register the beacons, and to make this data available for SAR authorities 24-hours-per-day, seven-days-per-week for use in an emergency. Such arrangements can be implemented nationally, on a regional basis in co-operation with other Administrations, or by other suitable means. The COSPAS-SARSAT International Beacon Registration Database is a facility available free of charge to enable beacon owners to directly register their beacons and/or to allow Administrations to upload their national registration data to ensure that it is available to SAR authorities worldwide on a 24-hours-per-day, seven-days-per-week basis.

International Beacon Registration Database

6 The International COSPAS-SARSAT Programme processes 406 MHz EPIRB alerts and routes them to the identified SAR authorities. It also operates the International Beacon Registration Database (IBRD) for 406 MHz beacons, operational since January 2006.

7 The IBRD is hosted on the Internet at www.406registration.com, with online help capabilities.

8 COSPAS-SARSAT provides the IBRD as a readily-available means for beacon owners to register their beacons unless an alternative method of registration is required by their national Administration. The registration information contained in the IBRD, whether directly entered by beacon owners or uploaded from national registration databases maintained by Administrations, is available 24-hours-per-day, seven-days-per-week for assisting SAR Services in SAR operations. The IBRD is available free of charge to individuals directly registering beacons and to Administrations uploading or retrieving registration data.

9 Administrations that maintain their own national registers are encouraged to upload their registration data to the IBRD to make their national beacon registration data available as quickly and easily as possible to SAR personnel on a 24-hour basis.

10 The IBRD can be used not only for registering 406 MHz EPIRBs, but also 406 MHz emergency locator transmitters (ELTs) carried on board aircraft, and personal locator beacons (PLBs) designed for personal use.

Background

11 The COSPAS-SARSAT 406 MHz System provides distress alerts that include the unique 15-character hexadecimal identification of the transmitting beacon. This beacon identification can be decoded to obtain information that includes:

.1 the type of beacon, i.e. ELT, EPIRB or PLB;
.2 the country code and identification data which form the unique beacon identification; and
.3 the type of auxiliary radio locating (homing) device, e.g., 121.5 MHz transmitter.

12 If a beacon is properly registered, the 15-character hexadecimal identification of the beacon can be used to access additional information. Beacon registration databases can provide information of great use to SAR personnel, including:

.1 specific owner identification information;
.2 the make/model and identification of aircraft or vessel in distress;
.3 communications equipment available;
.4 the total number of persons onboard; and
.5 emergency contact information.

13 To have this valuable information available to SAR authorities in an emergency, it must be available from either a national database available 24-hours-per-day, seven-days-per-week maintained by a national Administration and/or from the IBRD, provided that the national Administration allows direct registration in the IBRD by beacon owners or the Administration uploads its registration data to the IBRD for access by other SAR authorities.

14 Registration of 406 MHz beacons is required in accordance with international regulations on SAR established by the International Civil Aviation Organization (ICAO) and by the SOLAS Convention. In addition, some countries have made 406 MHz beacon registration mandatory.

IBRD Concept of Operations

15 The IBRD is designed to support:

.1 beacon owners who wish to directly register their beacons;
.2 Administrations to make their registration data easily available to other SAR authorities in an emergency by uploading that information to the IBRD; and
.3 SAR authorities that need to efficiently access beacon registration data to assist persons in distress.

16 COSPAS-SARSAT has configured the IBRD to accept by default beacon registrations from beacon owners, unless the Administration associated with the beacon's country code(s) has advised COSPAS-SARSAT that it:

.1 operates a national database with a 24-hour point of contact and does not want EPIRBs with its country code(s) included in the IBRD; or
.2 wishes to control the inclusion of beacons with its country code(s) in the IBRD.

Establishing an IBRD Point of Contact

17 Each Administration should provide COSPAS-SARSAT with a national IBRD Point of Contact for co-ordinating use of the IBRD. This Contact will decide the settings in the IBRD related to beacons with its country code and help to resolve problems arising with registration of beacons with that Administration's country code(s).

18 The national IBRD Point of Contact should be officially identified to the COSPAS-SARSAT Secretariat using a letter of the form that may be found at the Cospas-Sarsat website (www.cospas-sarsat.int – on the "Cospas-Sarsat Professionals" page choose the "Documents" tab, then "Document Templates, and select the "IBRD" tab). This letter must be signed by the Administration's IMO representative, or by its representative to COSPAS-SARSAT or to the International Civil Aviation Organization (ICAO), and sent to the COSPAS-SARSAT Secretariat. Based on the letter, the COSPAS-SARSAT Secretariat~~)~~ will allocate the requested user identifications and passwords to the Administration's national IBRD Point of Contact.

19 The request should specify whether user identification and passwords to be issued to the Administration's IBRD Point of Contact are required to:

.1 enable the Administration to upload registration data about its beacons to the IBRD;
.2 enable its SAR Services to access IBRD registration data in an emergency; and/or
.3 make IBRD registration data available to authorized shore-based service facilities and vessel inspectors.

20 Passwords and user identifications will be sent via post to the national IBRD Point of Contact. The national IBRD Point of Contact must then forward the user identifications and passwords to those entities authorized by its Administration to access the IBRD.

21 It is critical that, at a minimum, passwords be requested for SAR Services to access beacon registration information in the IBRD during an emergency.

Providing Details of Your National Beacon Registry

22 If an Administration maintains its own national beacon registry and decides not to allow beacons with its country code(s) to be registered in the IBRD, the Administration should review the information provided on the COSPAS-SARSAT website to the public (such as beacon owners) relating to its beacon-registration policies (please see the information contained on www.cospas-

sarsat.int on the "Cospas-Sarsat Professionals" page choose the "Contact Lists" tab and select "406 MHz Beacon Register"). Please provide the COSPAS-SARSAT Secretariat immediately with any updates, as appropriate. This is a source very commonly used by beacon owners to learn where to register their beacons and, therefore, it is critically important that accurate information is provided in order to keep these web pages up to date.

23 Based on the information that Administrations provide, a beacon owners who attempts to register a beacons on the IBRD will be advised through a "pop up" window on the IBRD website of how and/or where to register the beacon (based on the country code programmed into the beacon and the polices of that Administration reported to the Cospas-Sarsat Secretariat).

24 If no information is available regarding a national beacon registry for an Administration, COSPAS-SARSAT policy is to assume that no such registry exists and allow the direct registration in the IBRD by owners of beacons with that Administration's country code(s) (www.406registration.com).

National Administration Control of Beacon Registration in the IBRD

25 If an Administration has elected to prohibit direct registration by owners of their beacons in the IBRD, but wishes to upload to the IBRD some or all of its national beacon registration records, a national IBRD Point of Contact should be designated as described above so that the necessary arrangements can be made to enable the uploading of records.

26 The Administration will be able to upload in bulk its beacon registration data or, if desired, keep sole control of individual record inputs or updates. In that case, beacon owners who attempt to register beacons with that Administration's country code(s) will be directed by the IBRD website to the Administration's national website or point of contact for beacon registration.

Means of Registration

27 Beacon registrations allowed on the IBRD only will be accepted via the online facilities of www.406registration.com and, under no circumstances can registrations be accepted in paper format nor by telephone, facsimile or any other communication facilities.

Other Supported Beacon Types

28 In addition to EPIRBs, the IBRD supports two other types of beacons:

.1 Emergency Locator Transmitters (ELTs), for use in aircraft; and

.2 Personal Locator Beacons (PLBs), small beacons for individuals to carry or wear; these beacons sometimes may be used for purposes similar to an EPIRB or ELT, as allowed by local regulations and, therefore, sometimes may be coded to transmit distress messages that have the same content as an EPIRB or ELT, and/or registered as an EPIRB or ELT in the IBRD.

Further Information

29 Further information can be found at www.cospas-sarsat.int, or by e-mail at dbadmin@406registration.com .

Attachment 2