Chapter 1

Overview of the SAR system

Purpose

The purpose of the *International Aeronautical and Maritime Search and Rescue Manual for Mobile Facilities*, which is intended for carriage on board search and rescue units, and on board civil aircraft and vessels, is to provide guidance to those who:

- operate aircraft, vessels or other craft, and who may be called upon to use the facility to support SAR operations
- may need to perform on-scene coordinator functions for multiple facilities in the vicinity of a distress situation
- experience actual or potential emergencies, and may require SAR assistance.

Responsibilities and obligations to assist

Under long-standing traditions of the sea and various provisions of international law, ship masters are obligated to assist others in distress at sea whenever they can safely do so.

The responsibilities to render assistance to a distressed vessel or aircraft are based on humanitarian considerations and established international practice. Specific obligations can be found in several conventions, including the following:

- Annex 12 to the Convention on International Civil Aviation
- International Convention on Maritime Search and Rescue
- Regulation V/33 of the International Convention for the Safety of Life at Sea, 1974 (SOLAS 1974). (See appendix A).

SAR coordination

The SAR system has three general levels of coordination:

- On-scene coordinators (OSCs)
- SAR mission coordinators (SMCs) based at rescue coordination centres (RCCs)
- SAR coordinators (SCs) (national level).

On-scene coordinator

- When two or more SAR facilities are working together on the same mission, one person on scene may be needed to coordinate the activities of all participating facilities.
  - ☐ The SMC designates an OSC, who may be the person in charge of a:
    - – search and rescue unit (SRU), ship, or aircraft participating in a search; or
    - – nearby facility in a position to handle OSC duties.
  - ☐ The person in charge of the first facility to arrive at the scene will normally assume the OSC function until the SMC arranges for that person to be relieved.

SAR mission coordinator

- Each SAR operation is carried out under the guidance of an SMC. This function exists only for the duration of a specific SAR incident and is normally performed by the RCC chief or a designee. The SMC may have assisting staff.
- The SMC guides a SAR operation until a rescue has been effected or it becomes apparent that further efforts would be of no avail.
- The SMC should be well trained in all SAR processes, be thoroughly familiar with the applicable SAR plans, and:
  - ☐ gather information about distress situations
  - ☐ develop accurate and workable SAR action plans
  - ☐ dispatch and coordinate the resources to carry out SAR missions.
- SMC duties include:
  - ☐ obtain and evaluate all data on the emergency
  - ☐ ascertain the type of emergency equipment carried by the missing or distressed craft

- ☐ remain informed of prevailing environmental conditions
- ☐ if necessary, ascertain movements and locations of vessels and alert shipping in likely search areas for rescue, lookout and/or radio watch
- ☐ plot the areas to search and decide on methods and facilities to be used
- ☐ develop the search action plan and rescue action plan as appropriate
- ☐ coordinate the operation with adjacent RCCs when appropriate
- ☐ arrange briefing and debriefing of SAR personnel
- ☐ evaluate all reports and modify action plans as necessary
- ☐ arrange for refuelling of aircraft and, for prolonged search, make arrangements for the accommodation of SAR personnel
- ☐ arrange for delivery of supplies to sustain survivors
- ☐ maintain in chronological order an accurate and up-to-date record
- ☐ issue progress reports
- ☐ determine when to suspend or terminate the search
- ☐ release SAR facilities when assistance is no longer required
- ☐ notify accident investigation authorities
- ☐ if applicable, notify the State of registry of the missing or distressed craft
- ☐ prepare a final report.

SAR coordinator

- SCs are the top-level SAR managers; each State normally will have one or more persons or agencies for whom this designation may be appropriate.
- SCs have the overall responsibility for:
  - ☐ establishing, staffing, equipping and managing the SAR system
  - ☐ establishing RCCs and rescue sub-centres (RSCs)
  - ☐ providing or arranging for SAR facilities
  - ☐ coordinating SAR training
  - ☐ developing SAR policies.

National and regional SAR system organization

Many States have accepted the obligation to provide aeronautical and maritime SAR coordination and services on a 24-hour basis for their territories, territorial seas, and where appropriate, the high seas.

- To carry out these responsibilities, States have established national SAR organizations, or joined one or more other States to form a regional SAR organization associated with an ocean area or continent.
- A search and rescue region (SRR) is an area of defined dimensions associated with an RCC, within which SAR services are provided.
  - ☐ SRRs help to define who has primary responsibility for coordinating responses to distress situations in every area of the world, but they are not intended to restrict anyone from assisting persons in distress
  - ☐ the International Civil Aviation Organization (ICAO) regional air navigation plans (RANPs) depict aeronautical SRRs
  - ☐ the International Maritime Organization (IMO) Global SAR Plan depicts maritime SRRs.

Coordination by land-based authorities

SAR operations are normally coordinated from specially equipped operational centres or RCCs, staffed 24 hours a day with trained personnel. The working language for these centres should be English.

Each RCC has an associated SRR. The SRR might be divided into sub-regions with associated RSCs.

- Land-based communication facilities include:
  - ☐ land earth stations (LESs)
  - ☐ Cospas-Sarsat mission control centres with local user terminals (LUTs)
  - ☐ independent coast radio stations (CRSs) or CRSs associated with the RCCs
  - ☐ air traffic services (ATS) units
  - ☐ mobile phone networks
  - ☐ internet
  - ☐ public telephone alerting systems.

Ship reporting systems and vessel tracking

- Ship reporting systems have been established by several States.
- Ships at sea may be the only craft near the scene of a distressed aircraft or vessel.
- A ship reporting system enables the SMC to quickly:
  - ☐ identify vessels in the vicinity of a distress situation, along with their positions, courses, and speeds
  - ☐ be aware of other information about the vessels which may be valuable (whether a doctor is on board, etc.)
  - ☐ know how to contact the vessels
  - ☐ improve the likelihood of rapid aid during emergencies
  - ☐ reduce the number of calls for assistance to vessels unfavourably located to respond
  - ☐ reduce the response time to provide assistance.
- Masters of vessels are urged or *mandated* to send regular reports to the authority operating a ship reporting system for SAR *and other safety-related services*.
- Additional information on operators of ship reporting systems may be obtained from RCCs.
- Automatic identification system (AIS) and long-range identification and tracking (LRIT) transmissions are also important for providing shore authorities with real or near real time vessel tracking data to support search and rescue.

Amver

Amver is one of *many* ship reporting systems. It is a worldwide system operated exclusively to support SAR and make information available to all RCCs.

- There is no charge for vessels to participate in, nor for RCCs to use, Amver.
- Many land-based providers of communications services worldwide relay ship reports to Amver free of charge.
- Any merchant vessel of 1,000 gross tonnes or more on any voyage of greater than 24 hours is welcome to participate.