

Training on Search And Rescue (SAR) SAR system components

/ SAFEMED IV Project



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SAR Co-ordination

SAR Systems has 3 levels of coordination:

- **SAR Co-ordinator (S.C.)**
- **SAR Mission Co-ordinator (SMC)**
- **On Scene Co-ordinator (OSC)**

In addition to this we could have an AIRCRAFT Co-ordinator (A.C.O.) as well



System Management and Support

IAMSAR Manual - Vol. I para 1.5.1, 11 e 12 e 2.3.15

Levels and functions

General Levels	General Functions
SAR Co-ordination	Management
SAR Mission Co-ordination	Mission Planning
On-scene Co-ordination	Operational Oversight

IAMSAR Vol. I

IAMSAR Vol. II

IAMSAR Vol. III

RCC (rescue co-ordination centre) – SRR (search and rescue region)

RSC (rescue sub-centre) – SRS (search and rescue sub-region)



Search and Rescue Co-ordinator (S.C.)

Levels and functions

One or more persons or agencies within an Administration with overall responsibility for establishing and providing SAR services, and ensuring that planning for those services is properly co-ordinated



Search and Rescue Co-ordinator (S.C.)

IAMSAR Manual - Vol. II Glossary

The SC has the **general responsibility** to establish, equip and manage the SAR system, including legal and economic support.

The SC **identify and establishes the centers** for the SAR coordination and sub-centers (RCCs and SRCs), as well as provide the facilities (premises, Ops rooms, patrol boats) of assistance to the SAR, provides the guidelines for the training of staff and **establish the SAR policy.**

NORMALLY IS NOT INVOLVED IN SAR OPERATIONS



Search and Rescue Co-ordinator (S.C.)

An example: ITCG Model

Decree n° 662/1994

“Rules for implementation of Hamburg Convention '79”

ART. 2 The National Authority Responsible for the execution of the Convention is the Minister of Transport.

ART. 3 The ITCG HQs is the National body that ensures the general coordination of the Maritime Rescue services.

Search and Rescue Mission Co-ordinator (S.M.C.)

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The **official** temporarily assigned to **co-ordinate response** to an actual or apparent distress situation

For complex operations that last several days should be **replaced at regular intervals.**





On Scene Co-ordinator (O.S.C.)

IAMSAR Manual - Vol. II Glossary

A person designated to **co-ordinate search and rescue operations** within a specified area (2 or more SRUs in the same area)

In designating the OSC, the SMC must nevertheless evaluate:

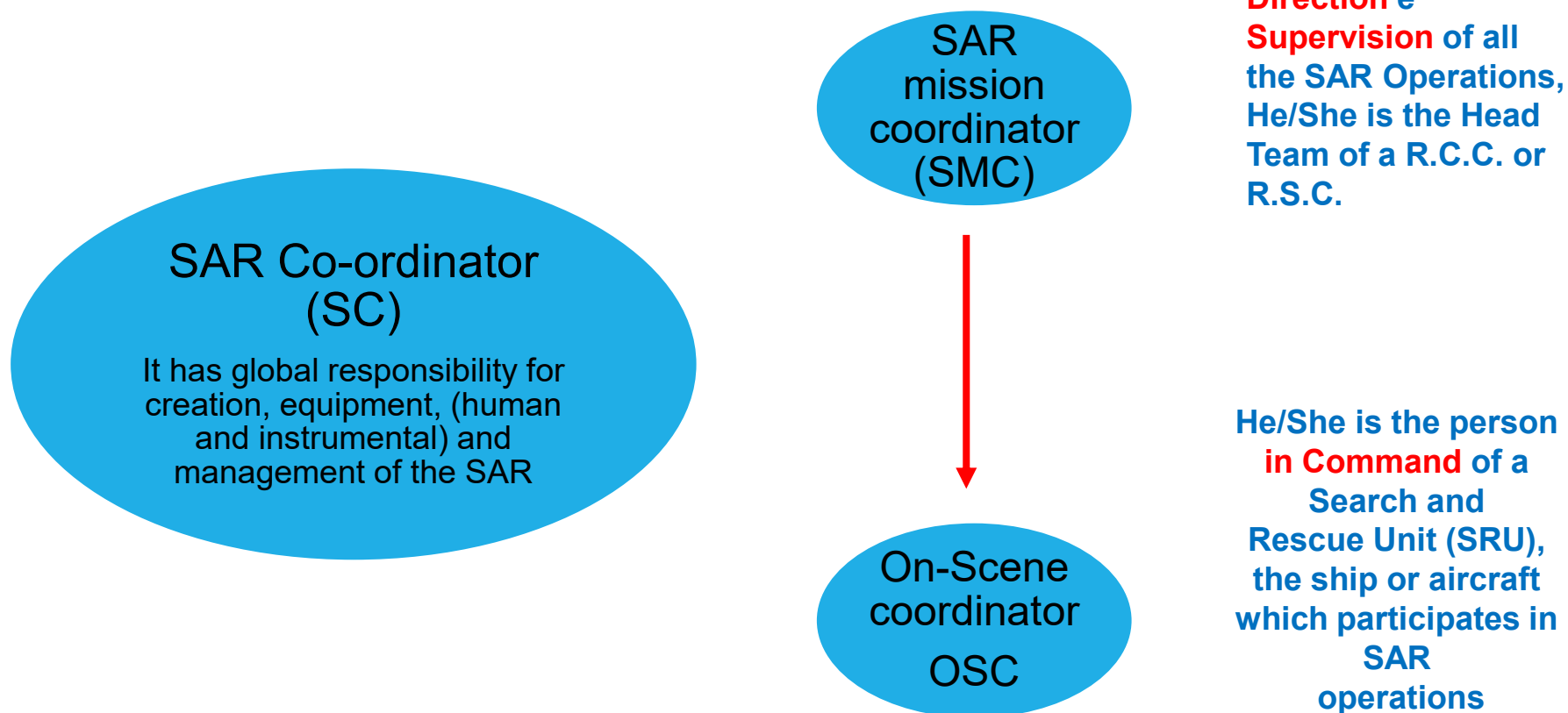
- The **person's SAR training**
- **Communication skills**
- The **autonomy** (both in terms of bunkers and logistics) of the unit in which OSC is embarked



ORGANIZATION

SAR CO-ORDINATION

IAMSAR Manual - Vol. II para 1.2



Aircraft Co-ordinator

IAMSAR Manual - Vol. II para 1.2.5

The purpose of the Aircraft Coordinator (ACO) is to keep **flight safety conditions** at their peak and to cooperate in rescue action to make it more effective.

The ACO is normally appointed by the SMC or, if this is not possible, from OSC





REQUIREMENTS

IAMSAR Manual - Vol. III para 9.1

The SMC will designate the OSC for on-site coordination, implementing planning to locate and rescue survivors.

If an OSC has not been designated or communications between SMC and OSC are lost, the OSC may need to perform some additional functions normally performed by a SMC.

The first unit that arrives in the vicinity of the SAR incidents, normally takes over the functions of OSC and, if necessary, those of SMC, until a SMC assumes the coordination (and it maintains the functions of OSC until the SMC does not designate other OSC).



ON SCENE CO-ORDINATION

IAMSAR Manual - Vol. III section 9.1

The types of means used in operations and the region in which the SAR event occurred influence on-site coordination.

They can include:

- SRU's designated;
- Aircraft and naval units, civil, military or other vehicles with SAR capacity.



DESIGNATION OF OSC

IAMSAR Manual - Vol. III section 9.2

When **two or more units** SAR conduct joint operations, the SMC must designate an OSC

Should this not be possible, the units involved should designate by mutual agreement an OSC

Until an OSC is designated, **the first unit to arrive at the scene should take over the task of OSC**

In deciding how many responsibilities to delegate to the OSC, the SMC normally considers the **communication and staff skills** of the units involved



DESIGNATION OF OSC

Designation is carried out according to the National SAR Plan and can be formalized with a specific message

An example of the message from SMC to OSC can be: according to SAR convention ship/captain..... has been designated as OSC from ____ in SAR ops concerning _____

Awaiting confirmation message of coordination assumption



OSC DUTIES

IAMSAR Manual - Vol. III section 9.3

- ☐ **Coordinate the operations of all the units of SAR present on the scene.**
- ☐ **Receive the search and rescue plan from the SMC or plan SAR operations, if a planning is not otherwise available**
- ☐ **Change the search modalities or the rescue planning as required by the situation on the scene, keeping it informed of the SMC**
- ☐ **Coordinate on-scene communications**
- ☐ **Check the operation of the other participating units**
- ☐ **Maintenance of safety distances between all units, both on the surface and in the air**



OSC DUTIES

IAMSAR Manual - Vol. III section 9.3

- ☐ Make **periodic situation report (SITREPs)** to the SMC (standard SITREP format in appendix D)
- ☐ Maintain a **detailed record of the operations**
- ☐ Inform the SMC for the release of vessels no longer needed
- ☐ Report the number and names of survivors to the SMC.
- ☐ Inform the SMC of the names and tasks assigned to the units with survivors on board
- ☐ Report which survivors are on each vessel

COORDINATION OF OPERATIONS





SAR OPERATION RISKS

IAMSAR Manual - Vol. III section 9.4

SAR operations normally involves SAR personnel in some risky situations. Saving distressed persons, and the safety of assisting personnel, should both be of concern to the OSC.

Make a risk assessment considering all the information available



ASSESSMENT

Some questions that shall be considered:

1. Is the distressed craft in immediate danger?
2. Can cause harm or placing the rescue facility in jeopardy?
3. Can the rescue facility handle the weather conditions?
4. Has the distressed craft given enough information to prepare the assisting vessel to aid in the rescue?
5. Can the assisting facility realistically be of assistance?
6. If recovery of a large number of survivors is a factor can the rescue facility accommodate them with regard to food, shelter, living space etc?



3 principles:

1. The SAR planning provided by the SMC is a guidance
2. The OSC shall re-evaluate the SAR planning and adapt it based on how the situation evolve.
3. He/she will inform the SMC and if possible it should change the plan consulting the SMC



ON-SCENE COMMUNICATIONS

The OSC should ensure that reliable communications are maintained on scene.

Normally, the SMC will select SAR-dedicated frequencies for use on scene, inform the OSC or SAR facilities, and establish communications with adjacent RCCs

- 1) the OSC should maintain communications with all SAR facilities and the SMC**
- 2) a primary and secondary frequency should be assigned for on-scene communications.**

ON-SCENE COMMUNICATIONS

Alerting, SAR operations, maritime safety,
distress and safety, and survival craft frequencies

Function	System	Frequency
Alerting	406 MHz distress beacon	406–406.1 MHz (earth-to-space)
	Inmarsat SES	1,544–1,545 MHz (space-to-earth) 1,626.5–1,646.5 MHz (earth-to-space) 1,645.6–1,645.8 MHz (earth-to-space)
	VHF DSC (channel 70)	1,56.525 MHz ¹
	MF/HF DSC ²	2,187.5 kHz ³ 4,207.5 kHz 6,312 kHz 8,414.5 kHz 12,577 kHz 16,804.5 kHz
	VHF AM	121.5 MHz
	VHF FM (channel 16)	156.8 MHz
On-scene communications	VHF channel 16	156.8 MHz
	VHF channel 06	156.3 MHz
	VHF AM	123.1 MHz
	MF radiotelephony	2,182 kHz
	MF NBDP	2,174.5 kHz
Communications involving aircraft	On scene, including SAR radiotelephony	156.8 MHz ⁴ 121.5 MHz ⁵ 123.1 MHz 156.3 MHz 2,182 kHz 3,023 kHz 4,125 kHz 5,680 kHz ⁶
Homing signals	406 MHz distress beacons	121.5 MHz and the 406 MHz signal
	9 GHz radar transponders (SART)	9,200–9,500 MHz
Maritime safety information (MSI)	NAVTEX Warnings	518 kHz ⁷
	NBDP	490 kHz 4,209.5 kHz ⁸ 4,210 kHz 6,314 kHz 8,416.5 kHz 12,579 kHz 16,806.5 kHz 19,680.5 kHz 22,376 kHz 26,100.5 kHz
	Satellite SafetyNET	1,530–1,545 MHz (space-to-earth)
Safety of navigation	VHF channel 13	156.650 MHz



CONCLUSION OF THE OPERATIONS

BRIEFING: SMC or the OSC should provide information to the SAR units on relevant details of the emergency and all necessary instructions prior to conduct the SAR operations.

DEBRIEFING: provides relevant information on the effectiveness of research and can influence the planning of subsequent research.



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