MEMORANDUM CIRCULAR NO. 006-2025

TO	:	ALL CONCERNED
FROM	:	DIRECTOR GENERAL
SUBJECT	:	SUPPLEMENTAL AMENDMENTS TO THE MANUAL OF STANDARDS FOR SEARCH AND RESCUE (MOS-SAR)

REFERENCES

1) Manual of Standards for Search and Rescue
2) ICAO Document 9731 IAMSAR Manual, Volume I, Organization and Management
3) ICAO Document 9731 IAMSAR Manual, Volume III, Mobile Facilities
4) CAAP Regulations Amendment Procedures
5) Board Resolution No. 2012-054 dated 28 September 2012

Pursuant to the powers vested in me under the Republic Act 9497, otherwise known as the Civil Aviation Authority Act of 2008, and in accordance with the Regulations Amendment Procedure with Board Resolution No. 2012-054 dated 28 September 2012, I hereby approve the adoption of Supplemental Amendments to the Manual of Standards for Search and Rescue (MOS-SAR).

ORIGINAL REGULATIONS SUBJECT FOR REVIEW AND REVISION:

MANUAL OF STANDARDS FOR SEARCH AND RESCUE (MOS-SAR)
...
ABBREVIATIONS

...
RULES OF CONSTRUCTION

Terminology

Through this regulation the following word usage applies:

a) *Shall* indicates a mandatory requirement.

b) *May* indicates that discretion can be used when performing an act described in a regulation.

c) *Will* indicates an action incumbent upon the Authority.

d) *Should* indicates a recommended practice.

Amendment/Revision to MOS-SAR

Proposals for any amendment or revision to MOS-SAR shall be submitted to the Technical Working Group (TWG) of the Air Traffic Management Safety Inspectorate Division (ATMSID). Any amendment or revision initiated by CAAP or by any other aviation stakeholders, the ATMSID TWG shall submit the deliberated proposal to the Regulations Review Committee (RRC) for furtherance.

The Chairman of the RRC shall be the Director General or his authorized representative and the Vice Chairman for MOS-SAR related matters shall be the Chief of AANSOO. The Secretariat of the RRC on matters concerning MOS-SAR shall be the current Chief of the Regulatory Safety Standards Division (RSSD) of AANSOO.

The RRC shall follow the procedures prescribed in the Regulations Amendment/ Revision Procedure (RAP) in deciding on the amendment or revision to or any other proposals associated with it. Once the amendment or revision is reviewed and endorsed by the RRC for the approval of the Director General, it shall have to be published in the Official Gazette of the Philippines or in a newspaper of general circulation. A copy of this published amendment/revision to regulations must be filed to the University of the Philippines Law Center - Office of the National Administrative Register (UP-ONAR).

The Chairman of the RRC shall convene the committee during regular meetings or at the instance of the Chairman or Vice-Chairmen and follow the Internal Rules of Procedures prescribed in the RAP.

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CHAPTER 3 – ORGANIZATION AND MANAGEMENT

3.1 System Organization

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3.1.8 Training, qualification, and certification

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3.1.8.4 The need for a working knowledge of the English language may be considered. RCCs must be able to communicate with other RCCs, as well as ship masters and aircraft commanders, who are required to be able to speak English. Air traffic services units also have requirements for English language speaking skills.

Note: - ATS units English proficiency requirements are specified in PCAR Part 2, 2.2.7.

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3.1.10 Exercises

3.1.10.1 Exercises test and improve operational plans, provide learning experience and improve liaison and coordination skills. Exercises, conducted on a realistic basis, help to demonstrate and assess the true effectiveness of training and the operational efficiency

and competence of the SAR service. Exercises will reveal deficiencies that may exist in SAR plans and enable them to be improved. It is safer to have shortcomings revealed by exercises rather than during actual operations. Attachment A of this Manual provides a sample template to serve as a guide to assist a State to develop a SAR exercise with its local SAR supporting agencies as well as with one or more neighboring States.

3.1.10.2 Types of exercises

3.1.10.2.1 Exercises can and should be conducted on three levels.

a) The most simple type of exercise, a *communications exercise*, requires the least planning. It consists of periodic use of all means of communications between all potential users to ensure capability for actual emergencies.

b) A *coordination exercise* involves simulated response to a crisis based on a series of scenarios. All levels of the SAR service are involved but do not deploy. This type of exercise requires considerable planning, and usually one to three days to execute.

c) The third type, a *full-scale exercise* or a *field exercise*, differs from the previous types in that actual SAR facilities are deployed. This increases the scope of SAR system-testing and adds realistic constraints due to times involved in launching, transit and activities of the SRUs.

3.1.10.3 Other considerations

3.1.10.3.1 The need for exercises varies. Having very few SAR operations each year, exercises will be critical to sustaining proficiency. Joint exercises among neighboring States or parties to SAR agreements will also be valuable. It may be necessary to assign persons full-time to planning and evaluating exercises. Success of an exercise is measured by:

a) how many problems are discovered;

b) how much is learned;

c) how much operating plans are improved; and

d) how few mistakes are repeated during the next exercise.

3.1.10.4 Exercise elements

3.1.10.4.1 Successful exercises require planning, execution and evaluation. Exercises are carried out for training, to evaluate established plans and procedures and to test new concepts. Exercises also offer experience in the management of risks and safety for SAR operations.

3.1.10.4.2 *Planning.* The typical exercise sequence involves: development of the concept (broad goals and objectives) of what is to be exercised; selection of participants (staff and facilities); detailed planning for how the exercise will be conducted; conduct of the exercise; and evaluation to determine lessons learned and to develop recommendations for improvement. It is essential to have a clear understanding of which plans and procedures are being exercised. Scenarios can then be developed that include specific situations to which personnel will react and respond. Response, or lack of response, to established policy and guidance, and need for additional policy guidance, is evaluated.

3.1.10.4.3 *Execution.* Those who plan exercises should not be the same ones who respond to the created scenarios. This avoids covering up known weaknesses to ensure ideal results, instead of revealing what would occur in an actual SAR situation.

a) Scenarios must be as realistic as possible. The decision as to how large and realistic exercises should be will depend on the extent of the SAR service, the demands expected to be made upon it and general considerations of economy. Since the primary responsibility for SAR has been delegated to military authorities or Government services, full-scale exercises involving as many units and facilities as possible may provide satisfactory means of implementing training programs. Where private concerns are relied upon to play a major part in SAR, the timing of major exercises should be arranged so as to minimize disruption to normal activities.

b) Opportunities should be taken to complement formal training programs with exercises conducted on a unit basis by combining them with normal activities during quiet periods. They should be carried out at regular intervals as determined by the SAR units and arranged so that all personnel participate. This is particularly important in respect of those facilities which seldom receive operational calls.

c) Exercises carried out separately by facilities will not be as valuable as combined operations, but they can ensure that the SAR service will function in an emergency.

d) As many facilities, including air and surface craft, should be exercised as possible. Communications between the SRUs is a vital test of coordination.

e) It is not always practicable for organizations to engage in formal SAR training programs. Whenever possible, personnel from these organizations should be invited to participate in or observe training exercises. They should be provided with documents, publications or other literature which describe the SAR policies and procedures used by the SAR service, showing the desired roles of the participating organizations in SAR operations.

f) Adjacent RCCs should periodically execute SAR exercises together to develop and maintain efficient cooperation and coordination between their services. These exercises need not always be on a large scale, but at least those SAR units which are likely to operate together should engage periodically in coordinating exercises. Much may be

learned by exchanging information on training methods (e.g. programs, literature, and films) and visits between staff of adjacent SRRs.

g) Safety requirements, particularly when using live "survivors", may impose significant constraints on the conduct of SAR exercises. SAR coordinating authorities should ensure that specific safety rules and limitations are issued for use during both the planning and conduct of SAR exercises.

3.1.10.4.4 *Evaluation*. The evaluation process is crucial. Inputs should come from a team of evaluation experts who observe the exercise, and from the people who actually participated in the exercise scenarios. Those observing and evaluating the response must have expertise in the areas they are evaluating, and clearly understand what is being evaluated. The evaluators should know the situations being posed and then record the participant's response to the objectives of the exercise. The final step is identification of weaknesses and development of recommendations for improvement. Subsequent exercises would emphasize these recommended changes as well as other concerns.

3.1.10.4.5 The RCC, RSC, and SAR units should determine the regularity and duration when to conduct the exercise for its personnel.

3.1.10.5 Reports

3.1.10.5.1 A permanent record of the exercise, addressing each element, is necessary to disseminate valuable information and to maintain a historic file for later case studies, analyses and system improvements. A system of indexing and filing the reports is recommended for later retrieval.

3.1.10.5.2 A copy of the report should be submitted to CAAP-AANSOO.

3.1.11 SAR Coordination

3.1.11.1 The SAR system has three levels of coordination associated with SAR coordinators (SCs), SAR mission coordinators (SMCs), and on-scene coordinators (OSCs).

3.1.11.2 *SAR coordinators*. SCs have the overall responsibility for establishing, staffing, equipping, and managing the SAR system, including providing appropriate legal and funding support, establishing RCCs and rescue sub-centers (RSCs), providing or arranging for SAR facilities, coordinating SAR training, and developing SAR policies. 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. More information on SAR management responsibilities may be found in the *International Aeronautical and Maritime Search and Rescue Manual on Organization and Management*. SCs are not normally involved in the conduct of SAR operations.

3.1.11.3 SAR operations are normally carried out under the direction and supervision of an SMC, who is usually the supervisor of the RCC or RSC watch team. In multiple-incident situations this officer could be SMC for all incidents, or, for some of those incidents, the SMC role could be delegated to another suitably qualified member of the watch team. The SMC should in all cases be supported by RCC watch team members to undertake functions in the coordinating process such as communications, plotting, logging and search planning. For complex cases or those of long duration, the assisting team as well as the SMC must be replaced at regular intervals. The SMC must be able to competently gather information about emergencies, transform emergency incident information into accurate and workable plans and dispatch and coordinate the facilities which will carry out the SAR missions.

a) The SMC is in charge of a SAR operation until a rescue has been effected or until it has become apparent that further efforts would be of no avail, or until responsibility is accepted by another RCC. The SMC should be able to use readily available facilities and to request additional ones during the operation. The SMC plans the search and rescue operations and coordinates the transit of SAR facilities to and from the scene.

b) The SMC should be well trained in all SAR processes and be thoroughly familiar with the applicable SAR plans. The SMC must competently gather information about distress situations, develop accurate and workable action plans, and dispatch and coordinate the resources which will carry out SAR missions. The plans of operation maintained by the RCC provide information to assist in these efforts. Guidelines for SMC duties include:

i) obtain and evaluate all data on the emergency;

ii) ascertain the type of emergency equipment carried by the missing or distressed craft;

iii) remain informed of prevailing environmental conditions;

iv) if necessary, ascertain movements and location of vessels and alert shipping in likely search areas for rescue, lookout (visual and electronic) and/or radio watch on appropriate frequencies to facilitate communications with SAR facilities;

v) plot the area to be searched and decide on the methods and facilities to be used;

vi) develop the search action plan (and rescue action plan as appropriate), i.e. allocate search areas, designate the OSC, dispatch SAR facilities and designate on-scene communications frequencies;

vii) inform the RCC chief of the search action plan;

viii) coordinate the operation with adjacent RCCs when appropriate;

ix) arrange briefing and debriefing of SAR personnel;

x) evaluate all reports from any source and modify the search action plan as necessary;

xi) arrange for the fueling of aircraft and, if necessary, rescue vessels and, for prolonged search, make arrangements for the accommodation of SAR personnel;

xii) arrange for delivery of supplies to sustain survivors;

xiii) maintain in chronological order an accurate and up-to-date record with a plot, where necessary, of all proceedings;

xix) issue progress reports;

xx) recommend to the RCC chief the abandoning or suspending of the search;

xxi) release SAR facilities when assistance is no longer required;

xxii) notify accident investigation authorities;

xxiii) notify police and other government authorities where relevant and necessary;

xxiv) if applicable, notify the State of registry of the aircraft or vessel in accordance with established arrangements; and

xxv) prepare a final report on the results of the operation.

3.1.11.4 *On-scene coordinator.* When two or more SAR units are working together on the same mission, there is sometimes an advantage if one person is assigned to coordinate the activities of all participating units. The SMC designates this on-scene coordinator (OSC), who may be the person in charge of a search and rescue unit (SRU), ship or aircraft participating in a search, or someone at another nearby facility in a position to handle OSC duties. The person in charge of the first SAR facility to arrive at the scene will normally assume the function of OSC until the SMC directs that the person be relieved. The OSC may have to assume SMC duties and actually plan the search and/or rescue if the OSC becomes aware of a distress situation directly and communications cannot be established with an RCC. The OSC should be the most capable person available, taking into consideration SAR training, communications capabilities, and the length of time that the unit the OSC is aboard can stay in the search area. Frequent changes in the OSC should be avoided. Duties which the SMC *may* assign to the OSC, depending on needs and qualification, include any of the following:

a) assume operational coordination of all SAR facilities on scene;

b) receive the search and/or rescue action plan from the SMC;

c) modify the action plan based on prevailing environmental conditions and keep the SMC advised of any changes to the plan (discuss proposed modifications with the SMC when practicable);

d) provide relevant information to the other SAR facilities;

e) implement the action plan;

f) monitor the performance of other units participating in the operation; and

g) make consolidated reports (SITREPs) to the SMC.

3.1.11.5 *Aircraft coordinator.* The purpose of the aircraft coordinator (ACO) function is to maintain high flight safety and cooperate in the rescue action to make it more effective. The ACO function should be seen as a cooperating, supporting and advisory service. The ACO should normally be designated by the SMC, or if that is not practicable, by the OSC. The ACO function will normally be performed by the facility with the most suitable mix of communication means, radar, GNSS (Global Navigation Satellite System) combined with trained personnel to effectively coordinate the involvement of multiple aircraft in SAR operations while maintaining flight safety. Generally, the ACO is responsible to the SMC; however, the ACO work on scene must be coordinated closely with the OSC, and if no SMC or OSC, as the case may be, the ACO would remain in overall charge of operations. Duties of the ACO can be carried out from a fixed-wing aircraft, helicopter, ship, a fixed structure such as an oil rig, or an appropriate land unit, such as an ATS unit or RCC. Depending on needs and qualifications, the ACO may be assigned duties that include the following:

a) coordinate the airborne resources in a defined geographical area;

b) assist in maintaining flight safety by issuing safety-related information;

c) practice flow planning (example: point of entry and point of exit);

d) prioritize and allocate tasks;

e) coordinate the coverage of search areas;

f) forward radio messages (can be the only duty);

g) make consolidated situation reports (SITREPs) to the SMC and the OSC, as appropriate; and work closely with the OSC; and

h) it is important that the ACO is aware of the fact that the participating airborne units, if possible, try to avoid disturbing other participating units with, for example, noise and rotor wind.

3.1.11.6 Airborne SRUs should make a standard joining entry report to the ACO when entering a search and rescue mission area, including:

a) call sign;

b) nationality;

c) type (specify fixed-wing or helicopter and type);

e) position;

f) altitude (on pressure setting used);

g) ETA (at relevant point or search area);

h) endurance on scene; and

i) remarks (specific equipment or limitations).

3.2 COORDINATION BETWEEN STATES

3.2.1 CAAP should make arrangements for joint training exercises involving PARCC, 505th SRG, PAF, the Naval Air Group-Philippine Fleet Philippine Navy, the PCG Aviation Group, local search and rescue organizations, aircraft operators, and RCCs of other States to promote search and rescue efficiency.

3.2.1a Until 25 November 2026, CAAP thru PARCC should make arrangements for joint training exercises involving their search and rescue units, those of other States and operators, in order to promote search and rescue efficiency.

3.2.1b As of 26 November 2026, CAAP thru PARCC should make arrangements for joint training exercises involving their RCCs, RSCs and search and rescue units, those of other States and operators, in order to promote search and rescue efficiency.

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3.3 SYSTEM MANAGEMENT

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3.3.3 SAR Plans

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3.3.3.3 Plans of Operation

3.3.3.3.1 Each RCC should prepare comprehensive plans of operation for its SRR, and take into account agreements with providers of facilities or other support for SAR operations. The plans of operation should be brought up to date whenever a change in conditions or experience in actual operations and exercises makes this necessary or advisable.

3.3.3.3.2 The location of the RCC and the description of its area of responsibility should be published in a national document (e.g. the Aeronautical Information Publication (AIP) or equivalent publication for maritime. The plans of operation should include information on the following general categories:

a) procedures for SAR coordination and types of SAR operations;

b) responsibilities of personnel assigned to SAR operations;

c) facilities;

d) communications;

e) operational information; and

f) training and discussion.

3.3.4 Establishment of RCCs and RSCs

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3.3.4.4 Each RCC is responsible for preparing comprehensive plans for the conduct of SAR in its SRR and for coordinated actions within adjacent SRRs. These plans must cover the whole SRR and be based on agreements between the SAR service and the providers of facilities or other support for SAR operations. Plans are intended to be valuable aids for time-critical search planning and SAR coordination processes. Each RCC and RSC should develop plans that:

a) meet the requirements of applicable international SAR manuals;

b) cover all the emergency scenarios likely to occur within the SRR;

c) are reviewed and updated regularly; and

e) are in a convenient form for quick and easy use.

3.3.4.5 The plans of operation set out the details for the conduct of SAR at operational levels. The IAMSAR Manual, volume II, *Mission Coordination* contains an outline of plans of operation.

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CHAPTER 4 – MISSION COORDINATION

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4.6 Purpose of an Aircraft coordinator (ACO)

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4.6.10 ACO duties

Duties for an ACO can include the following tasks:

4.6.10.1 Contributing to flight safety:

a) maintain a safe flow of aircraft;

b) ensure use of a common altimeter setting for all aircraft involved;

c) advise the SMC/OSC of on-scene weather implications;

d) determine a direction for entering and leaving an area of SAR action;

e) determine all points necessary for maintaining safe flow in an area of SAR action;

f) manage radio messages to and from SAR aircraft;

g) ensure frequencies are used in accordance with SMC directives; and

h) coordinate with adjacent ATS units.

4.6.10.2 Prioritizing and allocating tasks:

a) ensure SAR aircraft are aware of the SMC/OSC overall plan and their own tasks

b) monitor and report search area coverage and/or rescue action

c) with appropriate SMC/OSC, identify emerging tasks and direct SAR aircraft to meet them.

4.6.10.3 Coordinating aircraft operations:

a) respond to changing factors on scene and supervise effectiveness of operations

b) ensure the continuity of aircraft operations in coordination with SMC/OSC

c) monitor and keep SMC/OSC informed about the progress of tasks assigned to SAR aircraft.

4.6.10.4 Informing SAR aircraft:

a) assign tasks to aircraft

b) provide information about relevant air activity and dangers on scene;

c) provide information about search areas (if applicable), evacuation points (if applicable) and refueling facilities;

d) provide operational information about the ongoing SAR mission; and

e) provide relevant weather information.

4.6.10.5 Make periodic situation reports (SITREPs) of SAR aircraft operations to the SMC and the OSC, as appropriate. The standard SITREP format may be found in Attachment 3 of this manual.

4.6.10.6 Work closely with the OSC:

a) assist in the execution of SMC directives

b) maintain communications

c) advise on how the ACO can assist.

4.6.10.6.1 Coordinate aircraft refueling.

4.6.10.7 ACO call sign

4.6.10.7.1 In order to make the identity of an ACO clear to all participating units, the standard call sign "**Air coordinator**" should be used by all ACOs.

4.6.10.8 Information from SAR aircraft to the ACO

4.6.10.8.1 In order to enhance situational awareness for ACOs and other SAR aircraft and to assist with safety and the continuity of operations, participating aircraft should report as follows:

a) Entry report

b) Reaching assigned points

c) Leaving assigned points

d) Commencing operations (search, investigation during search, approach to the surface/ship, approach difficulties, hoist, landing, etc.)

e) Completing operations, including information regarding results

f) Leaving present altitude

g) Reaching new altitude

h) 30 minutes on-scene endurance, expecting fuel at (location)

i) 10 minutes to completing hoist operation

j) 10 minutes to completing search

k) Exit report.

4.6.10.9 Transfer of ACO tasks

4.6.10.9.1 Before accepting the task the new ACO should understand the details of the SAR operation and the SMC's plans. The details required may include the aim of the operation, the position of the missing object, number of persons in distress, other units involved, locations of participating aircraft, communications and any limitations to the operation. When possible, basic pre-flight information should be provided by an SMC in order to simplify the transfer to the new ACO.

4.6.10.10 Checklist and guides

4.6.10.10.1 ACOs and SAR aircraft are recommended to use checklists or guides containing relevant information. Units who are likely to be designated as ACOs or take part as airborne SRUs in the event of a multiple aircraft SAR operation, should always have ACO checklists or guides available whenever they are on duty.

4.6.10.10.2 An operational summary known as the pilot information file (PIF) contains useful in-flight information for all aircraft involved in multiple aircraft operations. The PIF, guides and checklists suitable for ACOs and SAR aircraft are contained in Attachment B of this Manual.

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4.15 Archiving case files

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4.15.2 Each rescue coordination center should prepare appraisals of actual search and rescue operations in its region. These appraisals should comprise any pertinent remarks on the procedures used and, on the emergency, and survival equipment, and any suggestions for improvement of those procedures and equipment. Those appraisals which are likely to be of interest to other States should be submitted to ICAO for information and dissemination as appropriate.

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CHAPTER 5 – MOBILE FACILITIES

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5.2 Multiple aircraft SAR operations

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5.2.4 Refueling facilities

5.2.4.1 The RCC/ACO/OSC is responsible for arranging refueling facilities in a SAR operation. The pilot-in-command is responsible for ensuring that the facilities available are suitable, taking into account endurance and all operational needs. The pilot-in-command should take appropriate actions to ensure required refueling and keep the RCC/ACO/OSC informed of changes to on-scene and overall endurance.

5.2.5 Area of SAR action

5.2.5.1 An area of SAR action is an area of defined dimensions that is established, notified or agreed for the purposes of protecting aircraft during SAR operations and within which SAR operations take place.

5.2.6 Entering areas of SAR action

5.2.6.1 SAR aircraft intending to enter an area of SAR action should normally first contact the relevant unit (RCC, ACO, OSC or responsible ATS unit). They should not enter the area until this unit gives them approval and provides them with sufficient information to safely join the flow of SAR aircraft involved in the operation (see also section 8 of ICAO Document 9731 Vol. III).

a) Aircraft should contact the ACO when at least ten minutes' flying time from the edge of an area of SAR action and pass entry information using the format in Appendix 4.

b) In the event that an area of SAR action has been established but an ACO is not yet available, SAR aircraft should receive information that they require primarily from the coordinating RCC or OSC.

5.2.7 Leaving areas of SAR action

5.2.7.1 Aircraft leaving areas of SAR action should contact the relevant unit before the area boundary and before changing to another frequency. Aircraft leaving should use the format described in Appendix 4 of this manual.

5.2.8 Flights in areas of SAR action by other aircraft

5.2.8.1 Aircraft that are not involved in a SAR operation should normally not fly within areas of SAR action. If such aircraft need to enter an area of SAR action, they should do so only with the approval of an SMC, ACO, OSC or coordinating ATS unit and are subject to the rules of the area or the relevant class of airspace. If an SMC or coordinating ATS unit is giving approval, the ACO or OSC should first be consulted.

5.2.9 Safety flow procedures

5.2.9.1 The main aim of on-scene procedures for SAR aircraft should be safety. In general, there are two methods that can be used to ensure a safe flow of multiple aircraft:

a) Horizontal spacing of aircraft operating visually should be the basic method used by SAR authorities and ACOs. It can be achieved by establishing coordinated specific routes to be flown by SAR aircraft to, from and within the area of SAR action.

b) Vertical spacing of aircraft can be used in combination with horizontal spacing for aircraft operating visually but is a key consideration for safety during poor weather conditions when more segregated operations are likely to be required.

5.2.9.2 In general, altitudes for RPAs should be kept apart from altitudes allocated for other SAR aircraft.

5.2.9.3 An effective method to ensure a safe flow of aircraft is by using a combination of both horizontal and vertical spacing. The best way to achieve this is through planning by the ACO, OSC or RCC and a clear understanding of procedures by all of the units and authorities involved.

5.2.9.4 The procedures used by SAR aircraft within an area of SAR action should be determined by the ACO in consultation with the SMC/OSC and pilots-in-command of the SAR aircraft. The use of assigned flight paths, coordinated timings and designated entry and exit procedures will help to ensure a safe flow of SAR aircraft. These can be determined by using bearings and distances from features such as the casualty location, or described using coordinates such as latitude and longitude. An effective way to organize multiple SAR aircraft engaged in an evacuation operation is to use procedures based on a central reference position (for example a vessel in distress).

5.2.10 Aircraft approach and departure flight paths

5.2.10.1 Approach and departure flight paths are usually influenced by the prevailing wind direction. Factors which might also have to be taken into account are:

a) Fumes directly downwind from burning structures may be unsafe – the direction of approach for aircraft might have to be off-set from the wind direction.

b) Geographic features or the design of the casualty location might compel aircraft to approach only from certain directions. Structures such as cranes, towers or vertical obstructions in line with the wind direction, might be dangerous as physical obstacles or due to mechanical turbulence created downwind.

5.2.11 Instrument-based procedures

5.2.11.1 When weather conditions are so poor that flying operations cannot effectively be carried out according to visual procedures and the procedures described earlier in this section, then it might be possible for an aircraft to operate under instrument-based procedures in an effort to establish visual conditions in the area of SAR action.

5.2.11.2 Unless operations are carried out in controlled airspace under the control of an ATS unit, aircraft pilots-in-command have full responsibility for avoiding other air traffic and surface obstructions in accordance with established regulations of their State for operations in instrument conditions and transitioning to visual conditions.

5.2.12 Approach fallback procedures

5.2.12.1 If on-scene conditions in an area of SAR action prevent a SAR aircraft from successfully completing an approach to the distress location, then an approach fallback procedure should be flown in order to safely rejoin the flow or depart from the area. Approach fallback procedures must be briefed to all SAR aircraft by an ACO.

5.3 Training

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5.3.6 Training of RCC and RSC personnel

5.3.6.1 The RCC and RSC have particularly important duties. Their personnel usually need formal SAR training. If unable to immediately attend formal training, they must receive a period of on-the-job training. Upon completion of training, the prospective RCC personnel should undergo qualification procedures. RCC staff should be fully qualified in SAR incident analysis, search planning, and SAR operations management.

5.3.6.2 One advantage of combining aeronautical and maritime RCCs into a joint RCC, and staffing the facility with both aviation and maritime specialists, is a synergistic approach to the solution of SAR incidents. RCC staff can share subject matter expertise and determine a more balanced and complete evaluation of each incident.

5.3.6.3 The formal training of RCC personnel should include:

a) organization:

i) knowledge of the SAR organization and its relationship to the air traffic services;

ii) knowledge of the SAR organization and its relationship to maritime safety and communication services;

iii) knowledge of agreements made with facilities, neighbouring SAR services, etc.;

iv) knowledge of capabilities and limitations of available facilities; and

v) knowledge of legal aspects, e.g. in a maritime incident, policies on towing and salvage;

b) procedures:

i) how to obtain and evaluate information and reports;

ii) alerting of facilities and commencement of SAR operations;

iii) interpretation of different systems of position reporting;

iv) determination of a search area;

v) search techniques and patterns for air, maritime and land facilities;

vi) plotting of search information;

vii) communications procedures;

viii) rescue procedures;

ix) supply-dropping procedures;

x) ditching assistance, interception and escort procedures; and

xi) briefing and questioning of SAR personnel;

c) administration:

i) routine administrative functions; and

d) information:

i) visits to SAR facilities and supply depots, and participation in exercises, including packing and loading of survival stores; and

ii) instruction through films, relevant journals, etc., on recent developments in the field of SAR.

5.3.6.4 *Other SAR facilities.* Training for mobile facilities is discussed in Appendix 5 of this manual. This would include aspects of training for support facilities for mobile units, such as depots.

CHAPTER 6 – FACILITY OPERATIONS MANUAL

6.1 Facility Manual of Operations

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6.1.2 The facility manual of operations may be prepared under the direction of the facility chief and must be issued under the authority of the service chief.

Note: - For ARCC, the MANOPs shall be issued under the authority of the Director General.

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Appendix 4

SAR Aircraft Entry and Exit Reports

1. Aircraft entry report

1.1 The entry report should be given to ACO/RCC before entering the area of SAR action (at least 20 NM/10 minutes' flight time to casualty).

1. Call sign

2. Nationality

3. Type (specify fixed-wing or helicopter and type)

4. Position

5. Altitude and altimeter setting

6. Estimated Time of Arrival

7. Endurance on scene

8. Remarks (specific equipment or limitations)

9. POB (crew, other personnel)

Example of entry report: *"Air coordinator, Lifeguard 901; one Swedish S-76 rescue helicopter; position 25 NM south of Ronneby; 1500 ft. on QNH 1013; ETA holding point North 1015Z; Endurance on scene 2 hours; no limitations, 4 crew on board"*

2. Aircraft exit report

2.1 The exit report should be given to the ACO/RCC before leaving the area of SAR action.

1. Call sign

2. Persons on Board (crew, other personnel, rescued)

3. Estimated Time of Arrival at destination

4. Requirements at destination (fuel, medical care, food, etc.)

5. Estimated Time of Arrival back in operations area

6. Remarks (e.g. Hoist position, weather, etc.)

Example of exit report: *"Air coordinator, Lifeguard 901; total POB 9, 4 crew and 5 rescued; ETA to EVAC 1230Z; Require fuel after landing; ETA back in area 1430Z; hoist position 5535.9N 01659E"*

Appendix 5

Training

1. Search and rescue personnel

1.1 Training of search and rescue personnel can include:

a) study of the application of SAR procedures, techniques, and equipment through lectures, practical demonstrations, films, SAR manuals, and journals

b) assisting in or observing actual operations

c) exercises in which personnel are trained to coordinate individual techniques and procedures in a simulated operation.

2. Air search and rescue facilities

2.1.1 In addition to normal flying programs, each crew member should be given specialized experience in SAR techniques for that member's particular function and the type of aircraft.

2.1.2 All crew members assigned to SAR duties should be familiar with the following:

a) air–surface coordination in SAR operations;

b) signal codes and signaling methods used by surface craft and survivors;

c) scanning and spotting techniques;

d) action to be taken when sighting a distress scene; and

e) first aid.

2.2. Pilots

2.2.1 Pilot training programs should be aimed at developing one or more of the following techniques as appropriate to the type of operation involved:

a) precision in flying search patterns, maintaining tracks and height;

b) flying at low levels as applicable to normal searches or to contour searches;

c) dropping of supplies (selection of approach heading and height, judgement of release point);

d) intercepting and escorting aircraft;

e) assistance to ditching aircraft;

f) landing and take-off from confined areas; and

g) winching by helicopters.

2.3. Navigators

2.3.1 Accurate navigation and continued knowledge of position within narrow limits is required, often in areas with no or few navigation aids.

2.4. Observers

2.4.1 The observer (or look-out) performs a very important function and should preferably have aircrew experience; an untrained observer seriously reduces the efficiency of an air search.

2.4.2 In addition to continued flight experience, personnel with observer duties should be given training on the following:

a) sufficient flying time for:

i) aircraft familiarization

ii) familiarity with the terrain of likely search areas

iii) knowledge of day and night scanning procedures

iv) acquiring the ability to detect objects from the air under monotonous conditions for prolonged periods of time

b) knowledge of the appearance from the air of:

i) aircraft wreckage and associated marks (e.g. slash marks in standing timber, burnt-out areas, skid marks, or scattered pieces of wreckage)

ii) life raft, lifeboat, dye marker trails, a person in the water

c) knowledge of supply dropping procedures.

2.4.3 If extensive flying training is not practicable, the use of films, photographs and information circulars describing general procedures for observers may prepare observers for their task.

2.4.4 Appendix C of ICAO Document 9371 Vol. III discusses factors affecting observer effectiveness.

2.5. Supply droppers

2.5.1 Personnel responsible for the dropping of supplies from aircraft should be familiar with:

a) stowage and handling of supply containers and parachutes;

b) safety precautions during dropping operations; and

c) dropping techniques.

3. Maritime search and rescue facilities

3.1 Crew members

3.1.1 Every opportunity should be taken to supplement training with SAR exercises as follows:

a) coordinated air–surface SAR operations;

b) provision of assistance to aircraft (homing, communication, ditching);

c) knowledge of signaling methods and codes;

d) handling of all types of survival craft and equipment;

e) storage and maintenance of special equipment;

f) removal of survivors from ships, other craft, survival craft, and the sea;

g) first aid, artificial respiration, general care of survivors and the injured; and

h) fire-fighting methods and associated equipment.

3.2 Deck officers

3.2.1 Training of deck officers should include all training required for crew members plus:

a) *Organization*

i) knowledge of the SAR organization

ii) knowledge of available SAR facilities, including those of adjacent SRRs

iii) knowledge of legal aspects, particularly as regards to towing and salvage, etc.

b) *Procedures*

i) search patterns and techniques for air and surface facilities

ii) communication procedures

iii) rescue procedures

iv) supply dropping procedures

v) ditching assistance, stand-by and escort procedures

vi) debriefing of survivors

c) *Seamanship*

i) navigation in difficult conditions close inshore or at sea and in close proximity to disabled vessels

ii) use and understanding of all electronic navigational equipment used on SAR craft, including their accuracy and limitations

iii) proper use of radar

iv) knowledge of charts, sailing directions, buoys, lights, and aids to navigation in the SRR

v) use of publications on tides and currents relating to the SRR and the calculations of tidal conditions, as applicable

vi) use of weather and wave charts, pilot charts

vii) estimating the drift of survival craft

viii) methods of calculating the point of interception

ix) methods of recovery of survivors both close inshore and in the open sea from all kinds of craft in adverse weather conditions

x) good seamanship

xi) methods of calculating search patterns.

3.3 Radio operators

3.3.1 All radio operators must be qualified in accordance with Article 55 of the ITU Radio Regulations for operating the specific equipment with which individual SAR craft are fitted.

3.3.2 Additional training should include:

a) SAR communications procedures and regional communications plans;

b) knowledge of communications facilities existing within the SRR and adjacent SRRs;

c) an understanding of the practical difficulties which may be associated with ship–aircraft communications and possible methods of overcoming these conditions;

d) knowledge of procedures for exchange of information with SAR surface craft and with the shore; and

e) knowledge of available operating frequencies for the SRR.

3.4 Look-outs

3.4.1 Keeping a good look-out is a most important function, given the limited range of vision from surface craft and difficulty in locating objects and persons in the sea.

3.4.2 Masters, commanding officers, and watch standing officers must be trained in properly briefing look-outs in their duties and the harmful effects of fatigue on the look-out.

3.4.3 Training should include:

a) knowledge of distress signals;

b) scanning methods and reporting sightings;

c) signs of sunken ship or aircraft; for example, oil slicks or wreckage; and

d) relative range of detection for various types of search objects.

3.4.4 Appendix C of ICAO Document 9731 Vol. III discusses factors affecting observer (look-out) effectiveness.

3.5 Crews of rescue boats

3.5.1 Rescue boat crews should be trained in all duties that they could be called upon to perform.

3.6 First aid

3.6.1 Regular training in first aid should consist of formal instruction, demonstration, and exercises, given by qualified emergency medical personnel.

3.6.2 Appropriate training aids should be used and copies of a first aid manual should be issued. The syllabus should include, as appropriate, depending on equipment available:

a) use of rescue lifting systems and other devices for removing survivors from water

b) fundamental first aid, with emphasis on revival of the partially drowned and treatment for shock, prolonged immersion, hypothermia, and burns

c) cardiopulmonary resuscitation (CPR)

d) use of automated external defibrillators (AEDs)

e) administration of oxygen.

3.6.3 Attention is also drawn to the guidance on first aid given in IMO's *Pocket Guide for Cold Water Survival.*

4. Masters and officers of merchant ships

4.1 The mandatory minimum requirements for the training of masters of merchant ships in SAR operations are contained in the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978.

5. Land search and rescue facilities

5.1 Land facilities are normally established from groups whose members have special qualifications for operating in the type of terrain prevalent in their area.

5.2 Additional training may be needed (such as search techniques, first aid, and radio communication procedures).

5.3 When staffed by volunteers whose only qualification is physical fitness, then training should be provided on:

a) familiarity with the terrain in which operations will be conducted and SAR methods and techniques to be employed;

b) map reading and the use of a magnetic compass;

c) ability to operate by day and night in all weather conditions with little outside help;

d) knowledge of supply-dropping techniques;

e) preparation of airstrips or clearings for helicopters;

f) air–surface coordination in SAR operations;

g) knowledge of fire prevention and fire-fighting methods in aircraft and aircraft wrecks;

h) knowledge of safety requirements for working around and within aircraft wreck sites;

i) knowledge of signaling methods and codes;

j) operation and maintenance of special equipment;

k) evacuation of survivors and injured; and

l) first aid and general care of survivors.

5.4 Land rescue personnel should be specially instructed concerning the removal of survivors and human remains from crashed aircraft.

a) knowledge of the position in the wreckage of both survivors and bodies may be of vital importance to the accident investigation; and

b) rescue personnel should be taught to make every effort to preserve such evidence to the maximum extent possible (such as photography).

5.5 Training in medical aspects should consist of formal instruction, demonstrations and exercises, given and supervised by a competent instructor, e.g. a doctor or qualified emergency medical personnel. Manuals on initial medical assistance should be issued to the trainees. Training should include fundamental first aid and general care of survivors, including treatment for exposure. It should be stressed that medical advice should be obtained before the evacuation of seriously injured survivors.

6. Pararescue and paramedical personnel

6.1 In addition to training in parachute-jumping techniques and procedures, pararescue and paramedical personnel should also be trained as members of a land facility.

6.2 Pararescue and paramedical units should be able to make precision landings with minimum dispersal of the group and without injuring themselves or damaging or losing equipment. They should develop skills in:

a) accurate estimation of exit points from various altitudes;

b) execution of jumps into various types of land and water areas in different weather conditions;

c) descent from trees with or without the aid of ropes or other let-down devices;

d) swimming and the use of one-person life rafts; and

e) diving equipment.

6.3 Practice jumps should be supervised by an experienced parachutist and the pilot of the aircraft should have experience as a pilot of an aircraft carrying parachutists. The following precautions should be observed:

a) the aircraft used should be approved for the carrying of parachutists

b) the supervisor should check that each person is correctly dressed and equipped:

i) proper parachute suits, jump-boots, and helmets are worn

ii) harnesses, parachutes, and (if carried) rescue packs are correctly fitted

iii) reserve chutes are worn

iv) rigid face guards are worn for jumps in timber or bush-land and sufficient rope is carried to permit descent from trees

v) lifejackets are worn for jumps near or into water

c) wind speed or wind gusts must not exceed the limits specified for the parachute

d) the jumping point should be determined by the supervisor after dropping a pilot chute or a streamer to determine drift

e) jumps should not be made in close proximity to runways or other hard surfaces

f) the jump height should not be less than the altitude required to effect a safe landing under a reserve parachute in the event the main parachute fails to properly open.

7. Depot personnel

a) At each depot, adequately trained personnel should be assigned to maintain, inspect, pack, and repack life rafts, parachutes, containers, and packs of survival stores and to carry out periodic inspections.

b) Depot personnel training should include, where necessary:

i) fitting parachutes to containers, life rafts, etc.

ii) joining containers and life rafts for combined drops

iii) loading and securing supplies on board aircraft and surface craft

iv) stocktaking and replenishing supplies

v) inspections.

Attachment 1

Sample Template for a Joint Search and Rescue Exercise

1. Objectives

State the objectives of the joint SAREX and what participants want to achieve from it. SAREX can be in different formats; for example, Table Top SAREX which involves discussion and assists in understanding and testing of a plan, Simulation SAREX where simulators are used to create realism without physically deploying assets, Live or Full Scale SAREX where there is actual deployment of assets to create realism in the testing of the plan, and Command Post SAREX where the decision-making process is tested.

For example:

1.1 The objectives of the joint SAREX are:

a) To provide improved search and rescue (SAR) cooperation between .... *(participating agencies or State RCC)* and .... *(participating agencies or State RCC)*.

b) To provide continuation training for personnel of SAR organizations from .... *(participating agencies or State RCC)* and .... *(participating agencies or State RCC)*.

c) To test the communication facilities and procedures between .... *(participating agencies or State RCC)* and .... *(participating agencies or State RCC)*.

d) To test and determine the effectiveness of the Search and Rescue Units (SRUs) of .... *(participating agencies)*.

2. Date and timing of SAREX

State the agreed date and time for the joint SAREX. Have alternate or contingency plans in the event that a full scale SAREX cannot be conducted due to bad weather or any

unforeseen circumstances. It is recommended that a pre-SAREX brief be conducted to ensure all participants understand their roles and the required actions to be taken. State the agreed time for a pre-SAREX brief to be carried out for all participants. States may conduct simultaneous pre-SAREX briefings at their own locations for their local participants. For standardization and to avoid confusion, it is recommended that all timing and dates used should be in UTC as there may be a difference in time and day for different States. After the SAREX, it is also recommended to conduct a de-brief for all participants.

For example:

2.1 Table Top SAREX or A Full Scale Exercise will be held between …………… *(participating agencies or State)* and …………… *(participating agencies or State)* on …………… *(day of the week, date/month/ year)* from …………… *(time in UTC)* to …………… *(time in UTC)*.

2.2 In the event of bad weather, the Full Scale SAREX will be converted into a Table Top SAREX. The cut off time will be at …………… *(time in UTC)*.

2.3 A Pre-SAREX brief will be held on …………… *(day of the week, day/month/year)* in ……………. *(location of the pre-SAREX brief)* commencing at ……………. *(time in UTC)*.

2.4 A Post-SAREX de-Brief will be held on ………… *(day of the week, day/month/year)* in …………. *(location of the de-brief)* commencing at …………. *(time in UTC)*.

3. Scenario

Discussion and development of exercise scenario with participating State or States and agencies involved. Scenario created should be as realistic as possible to simulate a real incident. A fictitious flight plan or ship's passage plan can be included to provide additional information pertaining to the distressed aircraft/ship. Using fictitious names and/or call signs for the distressed aircraft/ship and its airline/operator will avoid confusion on, for example, social media. Provide a fictitious manifest to indicate the number of people at risk.

For example:

3.1 At …………… *(time in UTC)*, a …………… *(type of aircraft/ship)*, …………… *(name/call sign of distressed aircraft/ship)*, departed from …………… *(point of departure)* to …………… *(destination)* with ………… *(persons on board)*. At …………… *(time in UTC)*, aircraft/ship declared "MAYDAY" due to …………… *(nature of emergency)* at …………. *(location in Lat and Long or with reference to a prominent location known to all)*. ……………… *(further details of the scenario, as required)*.

3.2 Other information, for example Pilot-in-command/Master's actions, …………… equipment carried on board ……………, description of aircraft/ship, etc.

4. Participating Organizations

Identify and list all participating agencies. As many responding agencies as possible should be included, both government and private. Air Navigation Service Provider, Aircraft Investigation Bureau, airlines, shipping companies, harbor authorities, etc. should be involved in a SAREX, as they would be directly involved in any real incident.

For example:

4.1 From .... *(State: list participating local agencies, for example, RCC, Civil Aviation Authority, Air Force, Navy, etc.)*

a) ....

b) ....

c) ....

d) ....

e) ....

From .... *(State: list participating local agencies)*

a) ....

b) ....

c) ....

d) ....

e) ....

5. Deployment of exercise search and rescue facilities and call signs

State all the SAR facilities that will take part in the SAREX. It is recommended that SRU call signs should be pre-fixed with the word "SAREX" to indicate that it is an exercise aircraft or surface vessel. This will help avoid confusion between a SAREX and a real incident. A call sign assigned to a particular SAR facility should not be changed and should be used throughout the exercise. Each SRU should have a unique call sign.

For example:

5.1 SRUs from .... *(participating State)* and their call signs are as follows:

Type of SRUs	Call sign	Remarks
Fokker 50	SAREX 01	Search
C130	SAREX 02	Search
Dolphin Helicopter	SAREX 03	Search and Rescue
....	SAREX........................	....
....	SAREX........................	....
....	SAREX........................	....

5.2 SRUs from .... *(participating State)* and their call signs are as follows:

Type of SRUs	Call sign	Remarks
(Helicopter)	SAREX 04	Search and Rescue
(Ship)	SAREX 05	Search and Rescue
....	SAREX........................	....

6. Communications

State the agreed radio frequencies and other communications facilities to be used in the SAREX. List communication arrangements between the RCCs involved and between the RCCs and the SRUs and other mobile SAR facilities. It is recommended that a communication check be conducted between all parties before the SAREX to ensure serviceability of communication equipment. A standby day may be necessary if the communication check is not satisfactory.

For example:

6.1 The communications arrangement will be as follows:

a) Between .... *(participating agency or State RCC)* and .... *(other agencies or participating State RCC)*

Primary communication *(radio frequencies, telephone numbers, etc.)*

Secondary communication   –   ....

Standby communication   –   ....

b) Between .... *(State RCC and SRUs)*

Primary communication   –   .... kHz or .... MHz

Secondary communication   –   .... kHz or .... MHz

Standby communication   –   .... kHz or .... MHz

6.2 A communication test between .... *(participating agency or State RCC)* and .... *(the other participating agencies or State RCC)* will be conducted prior to the SAREX. The test will be conducted on .... *(day of the week, date/month/year)* from .... *(time in UTC)* to .... *(time in UTC)*.

6.3 In the case of an unsatisfactory communication test, another test will be conducted on .... *(day of the week, date/month/year)* from .... *(time in UTC)* to .... *(time in UTC)*.

6.4 All messages pertaining to the exercise shall be prefixed and ended with the words "EXERCISE EXERCISE EXERCISE". Exercise participants **must not** use any internationally recognized Distress or Urgency Procedure words (for example, "MAYDAY", "PAN-PAN") on radio or telephone systems. Radio communications procedure words should be replaced as follows:

MAYDAY   – replace with "Mike Delta"

PAN-PAN   – replace with "Papa, Papa"

SÉCURITÉ   – replace with "Sierra, Sierra"

This will help to avoid confusion between a SAREX and an actual SAR incident.

7. Search object

In a Full Scale SAREX, States should consider the deployment of a search object (including a locator beacon) to add realism to the exercise. This will enable participating SRUs to practice visual and/or electronic search techniques. The search object can be deployed at the proposed distress location at the SAREX start time. Search objects should be clearly marked as being deployed for exercise purposes.

For example:

7.1 A .... *(description of the search object)* will be provided by .... *(one of the participating agencies)* and will be deployed at .... *(time in UTC)* on .... *(date of the SAREX)* at the distress position.

7.2 The search target is marked with .... *(for example, the word "SAREX")*.

8. Alerting and activation

State clearly the alert and activation processes for the SAREX, including which agency will initiate the distress phase and how the other participating agencies will be notified. In a joint SAREX, if the distress location is within the area of responsibility of a particular State, the State concerned should initiate the alerting and activation phase.

For example:

8.1 Since the distress location is within the area of responsibility of .... *(State)*, ... *(name)* RCC will notify .... *(participating agencies)* to initiate joint SAR operations.

9. Search area

Discuss how to determine the search area and which RCC will do so. In a joint SAR effort, the RCCs involved can determine their own search areas and agree an overall area.

For example:

9.1 The respective SAR mission coordinators (SMCs) will work out a search area upon receipt of the distress location.

9.2 The SMCs shall discuss with each other and agree on a common search area.

9.3 If there is a great difference between the two search areas, the coordinating RCC shall decide on the most probable area and take the necessary action to promulgate the area as a restricted area for SAR operations accordingly.

10. Diplomatic clearance

In a joint SAREX, make necessary arrangements for applying for diplomatic clearance if State assets may be or are required to enter another State's territorial airspace or waters. The application process should be made known to all relevant participating agencies. If there is an agreement in place between participating States, then the agreed procedure should be followed. Provide information regarding the SRUs and particulars of the personnel on board. It is recommended that particulars of the SRUs be provided to the State(s) concerned prior to the SAREX. This will assist in the diplomatic clearance process.

For example:

10.1 .... *(State)* RCC will send a request to .... *(State)* for diplomatic clearance to allow .... *(State's)* SRUs to enter .... *(State's)* territorial airspace/waters.

10.2 To obtain diplomatic clearance the RCC shall provide the following particulars:

a) unique identifier of the SRU as required by local authorities;

b) type of aircraft or vessel;

c) name of Pilot in Command/Master;

d) names of crew on board (not required for sea asset);

e) area of operation; and

f) date and time of operation.

10.3 The details of the SRUs concerned shall be provided .... *(days/weeks)* before the exercise. Application for diplomatic clearances should be made through the normal channels in order to accelerate the diplomatic clearance process.

11. Search operations

Ensure the safe conduct of the SAREX, especially as regards the air assets. It is recommended that there should be one coordinating RCC providing instructions to SRUs prior to entering the search area. It is also recommended that an aircraft coordinator be deployed to provide instructions to aircraft during transit to and from the search area as well as within the search area. Assign one of the SRUs as the on-scene coordinator, coordinating all the SAR facilities in the search area as well as providing an important communication link with the distressed aircraft/ship.

For example:

11.1 All SRUs shall report to the coordinating RCC or on-scene coordinator prior to entering the search area and while conducting SAR operations in the search area to ensure safety and efficiency in the joint SAR effort. All aircraft involved must adhere to ATC instructions.

11.2 Non-exercise aircraft/surface vessels shall keep clear of the search area unless clearance has been obtained for them to transit through.

12. Rescue operations

Discuss how the rescue operation is to be executed. Live rescue operations provide training and testing opportunities. If personnel are deployed at the scene to simulate a rescue operation, it is recommended to have a safety boat in the vicinity to ensure that the operation is closely monitored and all safety procedures are adhered to. Each SRU will report to the coordinating RCC or on-scene coordinator the number of survivors rescued and the state the survivors are in. This will assist in accounting for all at risk and whether immediate evacuation is required. If possible, recover the search object after

the exercise: this will help avoid unnecessary subsequent SAR action. If recovery is not possible, make general broadcasts to warn of the object's location.

For example:

12.1 When the search object is sighted, the SRU shall inform the coordinating RCC. The RCC will disseminate the information to all other participants.

12.2 Recovery of the search object after the exercise will be undertaken by .... *(agency responsible for recovering the search object).*

12.3 If the search object cannot be recovered, urgent safety information broadcast action will be taken by .... *(agency responsible).*

13. Emergency landing of participating aircraft

In a joint SAREX, make arrangements for participating aircraft to land in the event of an emergency.

For example:

13.1 .... *(State's)* aircraft participating in the SAREX will be given permission to land at .... *(name of airport or airfield)* if an emergency landing is required.

14. Termination or suspension of SAREX

State how and under what circumstances the SAREX will terminate. Make response arrangements in the event of a real incident occurring during the SAREX. Agree a code word or words which will be understood by all participating agencies and units. Once the code word is broadcast the SAREX will be converted into real SAR operations, at least for the duration of the real emergency.

For example:

14.1 The SAREX will be terminated when:

a) all the Search and Rescue Units have returned to base; or

b) the time for the SAREX has expired and no search object has been sighted.

The SAREX may be terminated or temporarily suspended when there is an actual emergency.

14.2 In the case of a real emergency, the exercise will be converted into a real SAR operation. The code words "NO DUFF NO DUFF" will be broadcast. All participating

agencies and units will cease the exercise immediately and await instructions from the coordinating RCC.

14.3 The exercise may be resumed when the real emergency has been resolved, if the participating agencies agree. Resumption of the exercise will be notified to all participants by the coordinating RCC. Alternatively, the real emergency may require the exercise to be terminated.

15. SAREX de-brief

Conduct of a SAREX de-brief is important as this is where the evaluation process of the exercise is presented by evaluation experts who observed the exercise, together with observations by people who actually participated in the exercise scenarios. This is the final step to identify weaknesses and good practices and development of recommendations for improvement. Agree on a date and venue to conduct a SAREX de-brief including all exercise participants.

For example:

15.1 SAREX de-brief will be held on .... *(day of the week, date/month/year)* commencing at .... *(time in UTC)*.

15.2 The venue for the SAREX de-brief will be .... *(name the venue and give its address)*.

16. SAREX Controllers/Evaluators/Observers

Name the personnel who will be involved in the SAREX as observers, evaluators and exercise controllers. Evaluators and controllers in particular must have SAR expertise so that they will understand what is to be evaluated and how to control the exercise to maximize its value.

For example:

16.1 Personnel involved in the SAREX as exercise controllers, evaluators and observers will be as follows:

.... *(Agency)* .... *(name and role in the exercise)*
.... *(Agency)* .... *(name and role in the exercise)*
.... *(Agency)* .... *(name and role in the exercise)*

17. Invitation to Observers

Agencies or States may consider inviting observers from other agencies or foreign countries or international organizations to attend and observe the SAREX. These

personnel can provide valuable feedback for improvement to the system. Agree which State will do the invitations and who should be invited to attend.

For example:

17.1 Invitations to observers to observe the SAREX will be provided by .... *(agency providing the invitation)*. Observers will be positioned at .... *(venue(s) for observation of the SAREX)* and will be escorted by officers of .... *(agency or agencies providing escorts)*.

a) .... *(name of country or organization)*

b) .... *(name of country or organization)*

c) .... *(name of country or organization)*

d) .... *(name of country or organization)*

18. News media coverage

If there is provision for news media coverage of the SAREX, agree the necessary arrangements (spokespeople, drafting of press releases, etc.). During a SAREX, it is recommended that a joint information center be set up as this will ease the burden on RCCs. Updates by RCCs are provided to one source thus ensuring the provision of timely, clear, accurate and consistent reports to the news media. This will provide a training opportunity in dissemination of **information in a real incident**.

For example:

18.1 Information updates will be provided by the RCC(s) to a Joint Information Centre for reports/updates/ press releases to the news media.

18.2 The Joint Information Centre will be established and staffed by the following agencies:

.... *(name of agency)*
.... *(name of agency)*
.... *(name of agency)*

18.3 If there is a requirement for a joint press release on the SAREX to be issued, ... *(agency that will produce the draft)* will draft the press release and forward it to .... *(other participating agencies, as agreed)* for concurrence before it is issued.

19. SAREX report

A SAREX report is important as it will serve as a permanent record of the exercise. Each element of the exercise should be recorded and lessons learnt during the exercise captured. Agree who should produce the SAREX report for dissemination to all participating agencies and other interested parties.

For example:

19.1 *(Insert Agency or State)* will produce the SAREX report with assistance from .... *(the other participating agencies or State(s))*. Photographs will be made available for the SAREX report.

19.2 A copy of the report will be sent to each of the following participating agencies, countries and international organizations.

a) .... *(agency or country or international organization)*

b) .... *(agency or country or international organization)*

c) .... *(agency or country or international organization)*

20. Venue for the next SAREX

It is good to plan for an annual joint SAREX with relevant agencies and/or neighboring States. State the date and venue if possible for the next SAREX coordination meeting and the proposed SAREX type and date.

For example:

20.1 The next SAREX Coordination Meeting will be held at .... *(venue)* on .... *(date/ month/year)*.

20.2 The next SAREX is scheduled to be held on .... *(date/month/year)*. It is proposed that this SAREX will be a .... *(type)* exercise.

Attachment 2

Checklist for Multiple Aircraft SAR Operations

The checklist below is for example purposes and for general guidance only. Each SAR operation is different therefore not all of the items below might be needed and additional ones might be required. Some items might also be carried out by different facilities and units from those indicated below.

Serial	Task	ACO	SMC	ATS	SRU
1	Declare emergency phase		X		
2	Identify requirement for ACO		X		X

3	Designate and notify ACO	X	X		
4	Inform ATS units and establish area of SAR action		X	X	
5	Identify aircraft and capabilities	X	X		
6	Develop and promulgate plan	X	X		X
7	Establish cooperation with OSC	X	X		
8	Coordination with ATS	X	X	X	X
9	Manage aircraft activities	X	X	X	
10	Call ACO before entering area	X			X
11	Call ACO when leaving area	X			X
12	Monitor and update on-scene plan	X	X		
13	Provide regular situation reports	X	X		
14	Manage fuel and numbers of airborne SRUs	X	X	X	X
15	Stand down or relieve the ACO	X	X		
16	Cancel/terminate the SAR operation	X	X	X	X
17	Cancel area of SAR action	X	X	X	X

Notes:

1. "X" signifies action required or the receipt of information.

2. For the purposes of this checklist, "SRU" refers to aircraft involved in the SAR operation.

Attachment 3

Standard Format for Search and Rescue Situation Report (SITREP)

Situation reports (SITREPs) should be compiled as follows:

3.1 Short form

To pass urgent essential details when requesting assistance, or to provide the earliest notice of a casualty.

Transmission priority (distress/urgency, etc.) _____

Date and time (UTC or local date time group) _____

From (originating RCC) _____

To _____

SAR SITREP (number) (to indicate nature of message and completeness of sequence of SITREPs concerning the casualty) _____
_____

Identity of casualty (name, call sign, flag State) _____

Position (latitude/longitude) _____

Situation (type of message, distress or urgency; date/time; nature of distress/ urgency, for example, fire, collision, medical) _____

Number of persons at risk _____

Assistance required _____

Coordinating RCC _____

3.2 Full form

To pass amplifying or updating information during SAR operations, the following additional sections should be used as required:

Description of casualty (physical description, owner/charterer, cargo carried, passage from/to, life-saving appliances carried, etc.) _____

Weather on scene (wind, sea/swell state, air/sea temperature, visibility, cloud cover/ceiling, barometric pressure) _____

Initial actions taken (by distressed craft and RCC) _____

Search area (as planned by RCC) _____

Coordinating instructions (OSC designated, units participating, communications, etc.) __

Future plans _____

Additional information/conclusion (include time SAR operation terminated) _____

Note 1: Each SITREP concerning the same casualty should be numbered sequentially.

Note 2: If help is required from the addressee, the first SITREP should be issued in short form if remaining information is not readily available.

Note 3: When time permits, the full form may be used for the first SITREP or to amplify it.

Note 4: Further SITREPs should be issued as soon as other relevant information has been obtained, particularly changes to on-scene weather. Information already passed should not need repetition.

Note 5: During prolonged operations "no change" SITREPs, when appropriate, should be issued at intervals of about three hours to reassure the recipients that nothing has been missed.

Note 6: When the incident has been concluded, a final SITREP should be issued as confirmation.

NEW / AMENDED REGULATIONS:

MANUAL OF STANDARDS FOR SEARCH AND RESCUE (MOS-SAR)

...

ABBREVIATIONS

...

RULES OF CONSTRUCTION

Terminology

Through this regulation the following word usage applies:

a) *Shall* indicates a mandatory requirement.

b) *May* indicates that discretion can be used when performing an act described in a regulation.

c) *Will* indicates an action incumbent upon the Authority.

d) *Should* indicates a recommended practice.

Amendment/Revision to MOS-SAR

Proposals for any amendment or revision to MOS-SAR shall be submitted to the Technical Working Group (TWG) of the Air Traffic Management Safety Inspectorate Division (ATMSID). Any amendment or revision initiated by CAAP or by any other aviation stakeholders, the ATMSID TWG shall submit the deliberated proposal to the Regulations Review Committee (RRC) for furtherance.

The Chairman of the RRC shall be the Director General or his authorized representative and the Vice Chairman for MOS-SAR related matters shall be the Chief of AANSOO. The Secretariat of the RRC on matters concerning MOS-SAR shall be the current Chief of the Regulatory Safety Standards Division (RSSD) of AANSOO.

The RRC shall follow the procedures prescribed in the Regulations Amendment/ Revision Procedure (RAP) in deciding on the amendment or revision to or any other proposals associated with it. Once the amendment or revision is reviewed and endorsed by the RRC for the approval of the Director General, it shall have to be published in the Official Gazette of the Philippines or in a newspaper of general circulation. A copy of this published amendment/revision to regulations must be filed to the University of the Philippines Law Center - Office of the National Administrative Register (UP-ONAR).

The Chairman of the RRC shall convene the committee during regular meetings or at the instance of the Chairman or Vice-Chairmen and follow the Internal Rules of Procedures prescribed in the RAP.

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CHAPTER 3 – ORGANIZATION AND MANAGEMENT

3.1 System Organization

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3.1.8 Training, qualification, and certification

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3.1.8.4 The need for a working knowledge of the English language may be considered. RCCs must be able to communicate with other RCCs, as well as ship masters and aircraft commanders, who are required to be able to speak English. Air traffic services units also have requirements for English language speaking skills.

Note: - ATS units English proficiency requirements are specified in PCAR Part 2, 2.2.7.

...

3.1.10 Exercises

3.1.10.1 Exercises test and improve operational plans, provide learning experience and improve liaison and coordination skills. Exercises, conducted on a realistic basis, help to demonstrate and assess the true effectiveness of training and the operational efficiency and competence of the SAR service. Exercises will reveal deficiencies that may exist in SAR plans and enable them to be improved. It is safer to have shortcomings revealed by exercises rather than during actual operations. Attachment A of this Manual provides a sample template to serve as a guide to assist a State to develop a SAR exercise with its local SAR supporting agencies as well as with one or more neighboring States.

3.1.10.2 Types of exercises

3.1.10.2.1 Exercises can and should be conducted on three levels.

a) The most simple type of exercise, a *communications exercise*, requires the least planning. It consists of periodic use of all means of communications between all potential users to ensure capability for actual emergencies.

b) A *coordination exercise* involves simulated response to a crisis based on a series of scenarios. All levels of the SAR service are involved but do not deploy. This type of exercise requires considerable planning, and usually one to three days to execute.

c) The third type, a *full-scale exercise* or a *field exercise*, differs from the previous types in that actual SAR facilities are deployed. This increases the scope of SAR system-testing and adds realistic constraints due to times involved in launching, transit and activities of the SRUs.

3.1.10.3 Other considerations

3.1.10.3.1The need for exercises varies. Having very few SAR operations each year, exercises will be critical to sustaining proficiency. Joint exercises among neighboring States or parties to SAR agreements will also be valuable. It may be necessary to assign persons full-time to planning and evaluating exercises. Success of an exercise is measured by:

a) how many problems are discovered;

b) how much is learned;

c) how much operating plans are improved; and

d) how few mistakes are repeated during the next exercise.

3.1.10.4 Exercise elements

3.1.10.4.1 Successful exercises require planning, execution and evaluation. Exercises are carried out for training, to evaluate established plans and procedures and to test new concepts. Exercises also offer experience in the management of risks and safety for SAR operations.

3.1.10.4.2 *Planning*. The typical exercise sequence involves: development of the concept (broad goals and objectives) of what is to be exercised; selection of participants (staff and facilities); detailed planning for how the exercise will be conducted; conduct of the exercise; and evaluation to determine lessons learned and to develop recommendations for improvement. It is essential to have a clear understanding of which plans and procedures are being exercised. Scenarios can then be developed that include specific situations to which personnel will react and respond. Response, or lack of response, to established policy and guidance, and need for additional policy guidance, is evaluated.

3.1.10.4.3 *Execution*. Those who plan exercises should not be the same ones who respond to the created scenarios. This avoids covering up known weaknesses to ensure ideal results, instead of revealing what would occur in an actual SAR situation.

a) Scenarios must be as realistic as possible. The decision as to how large and realistic exercises should be will depend on the extent of the SAR service, the demands expected to be made upon it and general considerations of economy. Since the primary responsibility for SAR has been delegated to military authorities or Government services, full-scale exercises involving as many units and facilities as possible may provide satisfactory means of implementing training programs. Where private concerns are relied upon to play a major part in SAR, the timing of major exercises should be arranged so as to minimize disruption to normal activities.

b) Opportunities should be taken to complement formal training programs with exercises conducted on a unit basis by combining them with normal activities during quiet periods. They should be carried out at regular intervals as determined by the SAR units and arranged so that all personnel participate. This is particularly important in respect of those facilities which seldom receive operational calls.

c) Exercises carried out separately by facilities will not be as valuable as combined operations, but they can ensure that the SAR service will function in an emergency.

d) As many facilities, including air and surface craft, should be exercised as possible. Communications between the SRUs is a vital test of coordination.

e) It is not always practicable for organizations to engage in formal SAR training programs. Whenever possible, personnel from these organizations should be invited to participate in or observe training exercises. They should be provided with documents, publications or other literature which describe the SAR policies and procedures used by the SAR service, showing the desired roles of the participating organizations in SAR operations.

f) Adjacent RCCs should periodically execute SAR exercises together to develop and maintain efficient cooperation and coordination between their services. These exercises need not always be on a large scale, but at least those SAR units which are likely to operate together should engage periodically in coordinating exercises. Much may be learned by exchanging information on training methods (e.g. programs, literature, and films) and visits between staff of adjacent SRRs.

g) Safety requirements, particularly when using live "survivors", may impose significant constraints on the conduct of SAR exercises. SAR coordinating authorities should ensure that specific safety rules and limitations are issued for use during both the planning and conduct of SAR exercises.

3.1.10.4.4 *Evaluation*. The evaluation process is crucial. Inputs should come from a team of evaluation experts who observe the exercise, and from the people who actually

participated in the exercise scenarios. Those observing and evaluating the response must have expertise in the areas they are evaluating, and clearly understand what is being evaluated. The evaluators should know the situations being posed and then record the participant's response to the objectives of the exercise. The final step is identification of weaknesses and development of recommendations for improvement. Subsequent exercises would emphasize these recommended changes as well as other concerns.

3.1.10.4.5 The RCC, RSC, and SAR units should determine the regularity and duration when to conduct the exercise for its personnel.

3.1.10.5 Reports

3.1.10.5.1 A permanent record of the exercise, addressing each element, is necessary to disseminate valuable information and to maintain a historic file for later case studies, analyses and system improvements. A system of indexing and filing the reports is recommended for later retrieval.

3.1.10.5.2 A copy of the report should be submitted to CAAP-AANSOO.

3.1.11 SAR Coordination

3.1.11.1 The SAR system has three levels of coordination associated with SAR coordinators (SCs), SAR mission coordinators (SMCs), and on-scene coordinators (OSCs).

3.1.11.2 *SAR coordinators.* SCs have the overall responsibility for establishing, staffing, equipping, and managing the SAR system, including providing appropriate legal and funding support, establishing RCCs and rescue sub-centers (RSCs), providing or arranging for SAR facilities, coordinating SAR training, and developing SAR policies. 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. More information on SAR management responsibilities may be found in the *International Aeronautical and Maritime Search and Rescue Manual on Organization and Management.* SCs are not normally involved in the conduct of SAR operations.

3.1.11.3 SAR operations are normally carried out under the direction and supervision of an SMC, who is usually the supervisor of the RCC or RSC watch team. In multiple-incident situations this officer could be SMC for all incidents, or, for some of those incidents, the SMC role could be delegated to another suitably qualified member of the watch team. The SMC should in all cases be supported by RCC watch team members to undertake functions in the coordinating process such as communications, plotting, logging and search planning. For complex cases or those of long duration, the assisting team as well as the SMC must be replaced at regular intervals. The SMC must be able to competently gather information about emergencies, transform emergency incident information into accurate and workable plans and dispatch and coordinate the facilities which will carry out the SAR missions.

a) The SMC is in charge of a SAR operation until a rescue has been effected or until it has become apparent that further efforts would be of no avail, or until responsibility is accepted by another RCC. The SMC should be able to use readily available facilities and to request additional ones during the operation. The SMC plans the search and rescue operations and coordinates the transit of SAR facilities to and from the scene.

b) The SMC should be well trained in all SAR processes and be thoroughly familiar with the applicable SAR plans. The SMC must competently gather information about distress situations, develop accurate and workable action plans, and dispatch and coordinate the resources which will carry out SAR missions. The plans of operation maintained by the RCC provide information to assist in these efforts. Guidelines for SMC duties include:

i) obtain and evaluate all data on the emergency;

ii) ascertain the type of emergency equipment carried by the missing or distressed craft;

iii) remain informed of prevailing environmental conditions;

iv) if necessary, ascertain movements and location of vessels and alert shipping in likely search areas for rescue, lookout (visual and electronic) and/or radio watch on appropriate frequencies to facilitate communications with SAR facilities;

v) plot the area to be searched and decide on the methods and facilities to be used;

vi) develop the search action plan (and rescue action plan as appropriate), i.e. allocate search areas, designate the OSC, dispatch SAR facilities and designate on-scene communications frequencies;

vii) inform the RCC chief of the search action plan;

viii) coordinate the operation with adjacent RCCs when appropriate;

ix) arrange briefing and debriefing of SAR personnel;

x) evaluate all reports from any source and modify the search action plan as necessary;

xi) arrange for the fueling of aircraft and, if necessary, rescue vessels and, for prolonged search, make arrangements for the accommodation of SAR personnel;

xii) arrange for delivery of supplies to sustain survivors;

xiii) maintain in chronological order an accurate and up-to-date record with a plot, where necessary, of all proceedings;

xix) issue progress reports;

xx) recommend to the RCC chief the abandoning or suspending of the search;

xxi) release SAR facilities when assistance is no longer required;

xxii) notify accident investigation authorities;

xxiii) notify police and other government authorities where relevant and necessary;

xxiv) if applicable, notify the State of registry of the aircraft or vessel in accordance with established arrangements; and

xxv) prepare a final report on the results of the operation.

3.1.11.4 *On-scene coordinator.* When two or more SAR units are working together on the same mission, there is sometimes an advantage if one person is assigned to coordinate the activities of all participating units. The SMC designates this on-scene coordinator (OSC), who may be the person in charge of a search and rescue unit (SRU), ship or aircraft participating in a search, or someone at another nearby facility in a position to handle OSC duties. The person in charge of the first SAR facility to arrive at the scene will normally assume the function of OSC until the SMC directs that the person be relieved. The OSC may have to assume SMC duties and actually plan the search and/or rescue if the OSC becomes aware of a distress situation directly and communications cannot be established with an RCC. The OSC should be the most capable person available, taking into consideration SAR training, communications capabilities, and the length of time that the unit the OSC is aboard can stay in the search area. Frequent changes in the OSC should be avoided. Duties which the SMC *may* assign to the OSC, depending on needs and qualification, include any of the following:

a) assume operational coordination of all SAR facilities on scene;

b) receive the search and/or rescue action plan from the SMC;

c) modify the action plan based on prevailing environmental conditions and keep the SMC advised of any changes to the plan (discuss proposed modifications with the SMC when practicable);

d) provide relevant information to the other SAR facilities;

e) implement the action plan;

f) monitor the performance of other units participating in the operation; and

g) make consolidated reports (SITREPs) to the SMC.

3.1.11.5 *Aircraft coordinator.* The purpose of the aircraft coordinator (ACO) function is to maintain high flight safety and cooperate in the rescue action to make it more effective. The ACO function should be seen as a cooperating, supporting and advisory service. The ACO should normally be designated by the SMC, or if that is not practicable, by the OSC. The ACO function will normally be performed by the facility with the most suitable mix of communication means, radar, GNSS (Global Navigation Satellite System) combined with trained personnel to effectively coordinate the involvement of multiple aircraft in SAR operations while maintaining flight safety. Generally, the ACO is responsible to the SMC; however, the ACO work on scene must be coordinated closely with the OSC, and if no SMC or OSC, as the case may be, the ACO would remain in overall charge of operations. Duties of the ACO can be carried out from a fixed-wing aircraft, helicopter, ship, a fixed structure such as an oil rig, or an appropriate land unit, such as an ATS unit or RCC. Depending on needs and qualifications, the ACO may be assigned duties that include the following:

a) coordinate the airborne resources in a defined geographical area;

b) assist in maintaining flight safety by issuing safety-related information;

c) practice flow planning (example: point of entry and point of exit);

d) prioritize and allocate tasks;

e) coordinate the coverage of search areas;

f) forward radio messages (can be the only duty);

g) make consolidated situation reports (SITREPs) to the SMC and the OSC, as appropriate; and work closely with the OSC; and

h) it is important that the ACO is aware of the fact that the participating airborne units, if possible, try to avoid disturbing other participating units with, for example, noise and rotor wind.

3.1.11.6 Airborne SRUs should make a standard joining entry report to the ACO when entering a search and rescue mission area, including:

a) call sign;

b) nationality;

c) type (specify fixed-wing or helicopter and type);

e) position;

f) altitude (on pressure setting used);

g) ETA (at relevant point or search area);

h) endurance on scene; and

i) remarks (specific equipment or limitations).

3.2 COORDINATION BETWEEN STATES

3.2.1a Until 25 November 2026, CAAP thru PARCC should make arrangements for joint training exercises involving their search and rescue units, those of other States and operators, in order to promote search and rescue efficiency.

3.2.1b As of 26 November 2026, CAAP thru PARCC should make arrangements for joint training exercises involving their RCCs, RSCs and search and rescue units, those of other States and operators, in order to promote search and rescue efficiency.

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3.3 SYSTEM MANAGEMENT

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3.3.3 SAR Plans

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3.3.3.3 Plans of Operation

3.3.3.3.1 Each RCC should prepare comprehensive plans of operation for its SRR, and take into account agreements with providers of facilities or other support for SAR operations. The plans of operation should be brought up to date whenever a change in conditions or experience in actual operations and exercises makes this necessary or advisable.

3.3.3.3.2 The location of the RCC and the description of its area of responsibility should be published in a national document (e.g. the Aeronautical Information Publication (AIP) or equivalent publication for maritime. The plans of operation should include information on the following general categories:

a) procedures for SAR coordination and types of SAR operations;

b) responsibilities of personnel assigned to SAR operations;

c) facilities;

d) communications;

e) operational information; and

f) training and discussion.

3.3.4 Establishment of RCCs and RSCs

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3.3.4.4 Each RCC is responsible for preparing comprehensive plans for the conduct of SAR in its SRR and for coordinated actions within adjacent SRRs. These plans must cover the whole SRR and be based on agreements between the SAR service and the providers of facilities or other support for SAR operations. Plans are intended to be valuable aids for time-critical search planning and SAR coordination processes. Each RCC and RSC should develop plans that:

a) meet the requirements of applicable international SAR manuals;

b) cover all the emergency scenarios likely to occur within the SRR;

c) are reviewed and updated regularly; and

e) are in a convenient form for quick and easy use.

3.3.4.5 The plans of operation set out the details for the conduct of SAR at operational levels. The IAMSAR Manual, volume II, *Mission Coordination* contains an outline of plans of operation.

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CHAPTER 4 – MISSION COORDINATION

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4.6 Purpose of an Aircraft coordinator (ACO)

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4.6.10 ACO duties

Duties for an ACO can include the following tasks:

4.6.10.1 Contributing to flight safety:

a) maintain a safe flow of aircraft;

b) ensure use of a common altimeter setting for all aircraft involved;

c) advise the SMC/OSC of on-scene weather implications;

d) determine a direction for entering and leaving an area of SAR action;

e) determine all points necessary for maintaining safe flow in an area of SAR action;

f) manage radio messages to and from SAR aircraft;

g) ensure frequencies are used in accordance with SMC directives; and

h) coordinate with adjacent ATS units.

4.6.10.2 Prioritizing and allocating tasks:

a) ensure SAR aircraft are aware of the SMC/OSC overall plan and their own tasks

b) monitor and report search area coverage and/or rescue action

c) with appropriate SMC/OSC, identify emerging tasks and direct SAR aircraft to meet them.

4.6.10.3 Coordinating aircraft operations:

a) respond to changing factors on scene and supervise effectiveness of operations

b) ensure the continuity of aircraft operations in coordination with SMC/OSC

c) monitor and keep SMC/OSC informed about the progress of tasks assigned to SAR aircraft.

4.6.10.4 Informing SAR aircraft:

a) assign tasks to aircraft

b) provide information about relevant air activity and dangers on scene;

c) provide information about search areas (if applicable), evacuation points (if applicable) and refueling facilities;

d) provide operational information about the ongoing SAR mission; and

e) provide relevant weather information.

4.6.10.5 Make periodic situation reports (SITREPs) of SAR aircraft operations to the SMC and the OSC, as appropriate. The standard SITREP format may be found in Attachment 3 of this manual.

4.6.10.6 Work closely with the OSC:

a) assist in the execution of SMC directives

b) maintain communications

c) advise on how the ACO can assist.

4.6.10.6.1 Coordinate aircraft refueling.

4.6.10.7 ACO call sign

4.6.10.7.1 In order to make the identity of an ACO clear to all participating units, the standard call sign "**Air coordinator**" should be used by all ACOs.

4.6.10.8 Information from SAR aircraft to the ACO

4.6.10.8.1 In order to enhance situational awareness for ACOs and other SAR aircraft and to assist with safety and the continuity of operations, participating aircraft should report as follows:

a) Entry report

b) Reaching assigned points

c) Leaving assigned points

d) Commencing operations (search, investigation during search, approach to the surface/ship, approach difficulties, hoist, landing, etc.)

e) Completing operations, including information regarding results

f) Leaving present altitude

g) Reaching new altitude

h) 30 minutes on-scene endurance, expecting fuel at (location)

i) 10 minutes to completing hoist operation

j) 10 minutes to completing search

k) Exit report.

4.6.10.9 Transfer of ACO tasks

4.6.10.9.1 Before accepting the task the new ACO should understand the details of the SAR operation and the SMC's plans. The details required may include the aim of the operation, the position of the missing object, number of persons in distress, other units involved, locations of participating aircraft, communications and any limitations to the operation. When possible, basic pre-flight information should be provided by an SMC in order to simplify the transfer to the new ACO.

4.6.10.10 Checklist and guides

4.6.10.10.1 ACOs and SAR aircraft are recommended to use checklists or guides containing relevant information. Units who are likely to be designated as ACOs or take part as airborne SRUs in the event of a multiple aircraft SAR operation, should always have ACO checklists or guides available whenever they are on duty.

4.6.10.10.2 An operational summary known as the pilot information file (PIF) contains useful in-flight information for all aircraft involved in multiple aircraft operations. The PIF, guides and checklists suitable for ACOs and SAR aircraft are contained in Attachment B of this Manual.

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4.15 Archiving case files

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4.15.2 Each rescue coordination center should prepare appraisals of actual search and rescue operations in its region. These appraisals should comprise any pertinent remarks on the procedures used and, on the emergency, and survival equipment, and any suggestions for improvement of those procedures and equipment. Those appraisals which are likely to be of interest to other States should be submitted to ICAO for information and dissemination as appropriate.

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CHAPTER 5 – MOBILE FACILITIES

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5.2 Multiple aircraft SAR operations

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5.2.4 Refueling facilities

5.2.4.1 The RCC/ACO/OSC is responsible for arranging refueling facilities in a SAR operation. The pilot-in-command is responsible for ensuring that the facilities available are suitable, taking into account endurance and all operational needs. The pilot-in-command should take appropriate actions to ensure required refueling and keep the RCC/ACO/OSC informed of changes to on-scene and overall endurance.

5.2.5 Area of SAR action

5.2.5.1 An area of SAR action is an area of defined dimensions that is established, notified or agreed for the purposes of protecting aircraft during SAR operations and within which SAR operations take place.

5.2.6 Entering areas of SAR action

5.2.6.1 SAR aircraft intending to enter an area of SAR action should normally first contact the relevant unit (RCC, ACO, OSC or responsible ATS unit). They should not enter the area until this unit gives them approval and provides them with sufficient information to safely join the flow of SAR aircraft involved in the operation (see also section 8 of ICAO Document 9731 Vol. III).

a) Aircraft should contact the ACO when at least ten minutes' flying time from the edge of an area of SAR action and pass entry information using the format in Appendix 4.

b) In the event that an area of SAR action has been established but an ACO is not yet available, SAR aircraft should receive information that they require primarily from the coordinating RCC or OSC.

5.2.7 Leaving areas of SAR action

5.2.7.1 Aircraft leaving areas of SAR action should contact the relevant unit before the area boundary and before changing to another frequency. Aircraft leaving should use the format described in Appendix 4 of this manual.

5.2.8 Flights in areas of SAR action by other aircraft

5.2.8.1 Aircraft that are not involved in a SAR operation should normally not fly within areas of SAR action. If such aircraft need to enter an area of SAR action, they should do so only with the approval of an SMC, ACO, OSC or coordinating ATS unit and are subject to the rules of the area or the relevant class of airspace. If an SMC or coordinating ATS unit is giving approval, the ACO or OSC should first be consulted.

5.2.9 Safety flow procedures

5.2.9.1 The main aim of on-scene procedures for SAR aircraft should be safety. In general, there are two methods that can be used to ensure a safe flow of multiple aircraft:

a) Horizontal spacing of aircraft operating visually should be the basic method used by SAR authorities and ACOs. It can be achieved by establishing coordinated specific routes to be flown by SAR aircraft to, from and within the area of SAR action.

b) Vertical spacing of aircraft can be used in combination with horizontal spacing for aircraft operating visually but is a key consideration for safety during poor weather conditions when more segregated operations are likely to be required.

5.2.9.2 In general, altitudes for RPAs should be kept apart from altitudes allocated for other SAR aircraft.

5.2.9.3 An effective method to ensure a safe flow of aircraft is by using a combination of both horizontal and vertical spacing. The best way to achieve this is through planning by the ACO, OSC or RCC and a clear understanding of procedures by all of the units and authorities involved.

5.2.9.4 The procedures used by SAR aircraft within an area of SAR action should be determined by the ACO in consultation with the SMC/OSC and pilots-in-command of the SAR aircraft. The use of assigned flight paths, coordinated timings and designated entry

and exit procedures will help to ensure a safe flow of SAR aircraft. These can be determined by using bearings and distances from features such as the casualty location, or described using coordinates such as latitude and longitude. An effective way to organize multiple SAR aircraft engaged in an evacuation operation is to use procedures based on a central reference position (for example a vessel in distress).

5.2.10 Aircraft approach and departure flight paths

5.2.10.1 Approach and departure flight paths are usually influenced by the prevailing wind direction. Factors which might also have to be taken into account are:

a) Fumes directly downwind from burning structures may be unsafe – the direction of approach for aircraft might have to be off-set from the wind direction.

b) Geographic features or the design of the casualty location might compel aircraft to approach only from certain directions. Structures such as cranes, towers or vertical obstructions in line with the wind direction, might be dangerous as physical obstacles or due to mechanical turbulence created downwind.

5.2.11 Instrument-based procedures

5.2.11.1 When weather conditions are so poor that flying operations cannot effectively be carried out according to visual procedures and the procedures described earlier in this section, then it might be possible for an aircraft to operate under instrument-based procedures in an effort to establish visual conditions in the area of SAR action.

5.2.11.2 Unless operations are carried out in controlled airspace under the control of an ATS unit, aircraft pilots-in-command have full responsibility for avoiding other air traffic and surface obstructions in accordance with established regulations of their State for operations in instrument conditions and transitioning to visual conditions.

5.2.12 Approach fallback procedures

5.2.12.1 If on-scene conditions in an area of SAR action prevent a SAR aircraft from successfully completing an approach to the distress location, then an approach fallback procedure should be flown in order to safely rejoin the flow or depart from the area. Approach fallback procedures must be briefed to all SAR aircraft by an ACO.

5.3 Training

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5.3.6 Training of RCC and RSC personnel

5.3.6.1 The RCC and RSC have particularly important duties. Their personnel usually need formal SAR training. If unable to immediately attend formal training, they must receive a period of on-the-job training. Upon completion of training, the prospective

RCC personnel should undergo qualification procedures. RCC staff should be fully qualified in SAR incident analysis, search planning, and SAR operations management.

5.3.6.2 One advantage of combining aeronautical and maritime RCCs into a joint RCC, and staffing the facility with both aviation and maritime specialists, is a synergistic approach to the solution of SAR incidents. RCC staff can share subject matter expertise and determine a more balanced and complete evaluation of each incident.

5.3.6.3 The formal training of RCC personnel should include:

a) organization:

i) knowledge of the SAR organization and its relationship to the air traffic services;

ii) knowledge of the SAR organization and its relationship to maritime safety and communication services;

iii) knowledge of agreements made with facilities, neighboring SAR services, etc.;

iv) knowledge of capabilities and limitations of available facilities; and

v) knowledge of legal aspects, e.g. in a maritime incident, policies on towing and salvage;

b) procedures:

i) how to obtain and evaluate information and reports;

ii) alerting of facilities and commencement of SAR operations;

iii) interpretation of different systems of position reporting;

iv) determination of a search area;

v) search techniques and patterns for air, maritime and land facilities;

vi) plotting of search information;

vii) communications procedures;

viii) rescue procedures;

ix) supply-dropping procedures;

x) ditching assistance, interception and escort procedures; and

xi) briefing and questioning of SAR personnel;

c) administration:

i) routine administrative functions; and

d) information:

i) visits to SAR facilities and supply depots, and participation in exercises, including packing and loading of survival stores; and

ii) instruction through films, relevant journals, etc., on recent developments in the field of SAR.

5.3.6.4 *Other SAR facilities.* Training for mobile facilities is discussed in Appendix 5 of this manual. This would include aspects of training for support facilities for mobile units, such as depots.

CHAPTER 6 – FACILITY OPERATIONS MANUAL

6.1 Facility Manual of Operations
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6.1.2 The facility manual of operations may be prepared under the direction of the facility chief and must be issued under the authority of the service chief.
...
Appendix 4

SAR Aircraft Entry and Exit Reports

1. Aircraft entry report

1.1 The entry report should be given to ACO/RCC before entering the area of SAR action (at least 20 NM/10 minutes' flight time to casualty).

1. Call sign

2. Nationality

3. Type (specify fixed-wing or helicopter and type)

4. Position

5. Altitude and altimeter setting

6. Estimated Time of Arrival

7. Endurance on scene

8. Remarks (specific equipment or limitations)

9. POB (crew, other personnel)

Example of entry report: *"Air coordinator, Lifeguard 901; one Swedish S-76 rescue helicopter; position 25 NM south of Ronneby; 1500 ft. on QNH 1013; ETA holding point North 1015Z; Endurance on scene 2 hours; no limitations, 4 crew on board"*

2. Aircraft exit report

2.1 The exit report should be given to the ACO/RCC before leaving the area of SAR action.

1. Call sign

2. Persons on Board (crew, other personnel, rescued)

3. Estimated Time of Arrival at destination

4. Requirements at destination (fuel, medical care, food, etc.)

5. Estimated Time of Arrival back in operations area

6. Remarks (e.g. Hoist position, weather, etc.)

Example of exit report: *"Air coordinator, Lifeguard 901; total POB 9, 4 crew and 5 rescued; ETA to EVAC 1230Z; Require fuel after landing; ETA back in area 1430Z; hoist position 5535.9N 01659E"*

Appendix 5

Training

1. Search and rescue personnel

1.1 Training of search and rescue personnel can include:

a) study of the application of SAR procedures, techniques, and equipment through lectures, practical demonstrations, films, SAR manuals, and journals

b) assisting in or observing actual operations

c) exercises in which personnel are trained to coordinate individual techniques and procedures in a simulated operation.

2. Air search and rescue facilities

2.1.1 In addition to normal flying programs, each crew member should be given specialized experience in SAR techniques for that member's particular function and the type of aircraft.

2.1.2 All crew members assigned to SAR duties should be familiar with the following:

a) air–surface coordination in SAR operations;

b) signal codes and signaling methods used by surface craft and survivors;

c) scanning and spotting techniques;

d) action to be taken when sighting a distress scene; and

e) first aid.

2.2. Pilots

2.2.1 Pilot training programs should be aimed at developing one or more of the following techniques as appropriate to the type of operation involved:

a) precision in flying search patterns, maintaining tracks and height;

b) flying at low levels as applicable to normal searches or to contour searches;

c) dropping of supplies (selection of approach heading and height, judgement of release point);

d) intercepting and escorting aircraft;

e) assistance to ditching aircraft;

f) landing and take-off from confined areas; and

g) winching by helicopters.

2.3. Navigators

2.3.1 Accurate navigation and continued knowledge of position within narrow limits is required, often in areas with no or few navigation aids.

2.4. Observers

2.4.1 The observer (or look-out) performs a very important function and should preferably have aircrew experience; an untrained observer seriously reduces the efficiency of an air search.

2.4.2 In addition to continued flight experience, personnel with observer duties should be given training on the following:

a) sufficient flying time for:

i) aircraft familiarization

ii) familiarity with the terrain of likely search areas

iii) knowledge of day and night scanning procedures

iv) acquiring the ability to detect objects from the air under
monotonous conditions for prolonged periods of time

b) knowledge of the appearance from the air of:

i) aircraft wreckage and associated marks (e.g. slash marks in standing timber, burnt-out areas, skid marks, or scattered pieces of wreckage)

ii) life raft, lifeboat, dye marker trails, a person in the water

c) knowledge of supply dropping procedures.

2.4.3 If extensive flying training is not practicable, the use of films, photographs and information circulars describing general procedures for observers may prepare observers for their task.

2.4.4 Appendix C of ICAO Document 9371 Vol. III discusses factors affecting observer effectiveness.

2.5. Supply droppers

2.5.1 Personnel responsible for the dropping of supplies from aircraft should be familiar with:

a) stowage and handling of supply containers and parachutes;

b) safety precautions during dropping operations; and

c) dropping techniques.

3. Maritime search and rescue facilities

3.1 Crew members

3.1.1 Every opportunity should be taken to supplement training with SAR exercises as follows:

a) coordinated air–surface SAR operations;

b) provision of assistance to aircraft (homing, communication, ditching);

c) knowledge of signaling methods and codes;

d) handling of all types of survival craft and equipment;

e) storage and maintenance of special equipment;

f) removal of survivors from ships, other craft, survival craft, and the sea;

g) first aid, artificial respiration, general care of survivors and the injured; and

h) fire-fighting methods and associated equipment.

3.2 Deck officers

3.2.1 Training of deck officers should include all training required for crew members plus:

a) *Organization*

i) knowledge of the SAR organization

ii) knowledge of available SAR facilities, including those of adjacent SRRs

iii) knowledge of legal aspects, particularly as regards to towing and salvage, etc.

b) *Procedures*

i) search patterns and techniques for air and surface facilities

ii) communication procedures

iii) rescue procedures

iv) supply dropping procedures

v) ditching assistance, stand-by and escort procedures

vi) debriefing of survivors

c) *Seamanship*

i) navigation in difficult conditions close inshore or at sea and in close proximity to disabled vessels

ii) use and understanding of all electronic navigational equipment used on SAR craft, including their accuracy and limitations

iii) proper use of radar

iv) knowledge of charts, sailing directions, buoys, lights, and aids to navigation in the SRR

v) use of publications on tides and currents relating to the SRR and the calculations of tidal conditions, as applicable

vi) use of weather and wave charts, pilot charts

vii) estimating the drift of survival craft

viii) methods of calculating the point of interception

ix) methods of recovery of survivors both close inshore and in the open sea from all kinds of craft in adverse weather conditions

x) good seamanship

xi) methods of calculating search patterns.

3.3 Radio operators

3.3.1 All radio operators must be qualified in accordance with Article 55 of the ITU Radio Regulations for operating the specific equipment with which individual SAR craft are fitted.

3.3.2 Additional training should include:

a) SAR communications procedures and regional communications plans;

b) knowledge of communications facilities existing within the SRR and adjacent SRRs;

c) an understanding of the practical difficulties which may be associated with ship–aircraft communications and possible methods of overcoming these conditions;

d) knowledge of procedures for exchange of information with SAR surface craft and with the shore; and

e) knowledge of available operating frequencies for the SRR.

3.4 Look-outs

3.4.1 Keeping a good look-out is a most important function, given the limited range of vision from surface craft and difficulty in locating objects and persons in the sea.

3.4.2 Masters, commanding officers, and watch standing officers must be trained in properly briefing look-outs in their duties and the harmful effects of fatigue on the look-out.

3.4.3 Training should include:

a) knowledge of distress signals;

b) scanning methods and reporting sightings;

c) signs of sunken ship or aircraft; for example, oil slicks or wreckage; and

d) relative range of detection for various types of search objects.

3.4.4 Appendix C of ICAO Document 9731 Vol. III discusses factors affecting observer (look-out) effectiveness.

3.5 Crews of rescue boats

3.5.1 Rescue boat crews should be trained in all duties that they could be called upon to perform.

3.6 First aid

3.6.1 Regular training in first aid should consist of formal instruction, demonstration, and exercises, given by qualified emergency medical personnel.

3.6.2 Appropriate training aids should be used and copies of a first aid manual should be issued. The syllabus should include, as appropriate, depending on equipment available:

a) use of rescue lifting systems and other devices for removing survivors from water

b) fundamental first aid, with emphasis on revival of the partially drowned and treatment for shock, prolonged immersion, hypothermia, and burns

c) cardiopulmonary resuscitation (CPR)

d) use of automated external defibrillators (AEDs)

e) administration of oxygen.

3.6.3 Attention is also drawn to the guidance on first aid given in IMO's *Pocket Guide for Cold Water Survival.*

4. Masters and officers of merchant ships

4.1 The mandatory minimum requirements for the training of masters of merchant ships in SAR operations are contained in the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978.

5. Land search and rescue facilities

5.1 Land facilities are normally established from groups whose members have special qualifications for operating in the type of terrain prevalent in their area.

5.2 Additional training may be needed (such as search techniques, first aid, and radio communication procedures).

5.3 When staffed by volunteers whose only qualification is physical fitness, then training should be provided on:

a) familiarity with the terrain in which operations will be conducted and SAR methods and techniques to be employed;

b) map reading and the use of a magnetic compass;

c) ability to operate by day and night in all weather conditions with little outside help;

d) knowledge of supply-dropping techniques;

e) preparation of airstrips or clearings for helicopters;

f) air–surface coordination in SAR operations;

g) knowledge of fire prevention and fire-fighting methods in aircraft and aircraft wrecks;

h) knowledge of safety requirements for working around and within aircraft wreck sites;

i) knowledge of signaling methods and codes;

j) operation and maintenance of special equipment;

k) evacuation of survivors and injured; and

l) first aid and general care of survivors.

5.4 Land rescue personnel should be specially instructed concerning the removal of survivors and human remains from crashed aircraft.

a) knowledge of the position in the wreckage of both survivors and bodies may be of vital importance to the accident investigation; and

b) rescue personnel should be taught to make every effort to preserve such evidence to the maximum extent possible (such as photography).

5.5 Training in medical aspects should consist of formal instruction, demonstrations and exercises, given and supervised by a competent instructor, e.g. a doctor or qualified emergency medical personnel. Manuals on initial medical assistance should be issued to the trainees. Training should include fundamental first aid and general care of survivors, including treatment for exposure. It should be stressed that medical advice should be obtained before the evacuation of seriously injured survivors.

6. Pararescue and paramedical personnel

6.1 In addition to training in parachute-jumping techniques and procedures, pararescue and paramedical personnel should also be trained as members of a land facility.

6.2 Pararescue and paramedical units should be able to make precision landings with minimum dispersal of the group and without injuring themselves or damaging or losing equipment. They should develop skills in:

a) accurate estimation of exit points from various altitudes;

b) execution of jumps into various types of land and water areas in different weather conditions;

c) descent from trees with or without the aid of ropes or other let-down devices;

d) swimming and the use of one-person life rafts; and

e) diving equipment.

6.3 Practice jumps should be supervised by an experienced parachutist and the pilot of the aircraft should have experience as a pilot of an aircraft carrying parachutists. The following precautions should be observed:

a) the aircraft used should be approved for the carrying of parachutists

b) the supervisor should check that each person is correctly dressed and equipped:

i) proper parachute suits, jump-boots, and helmets are worn

ii) harnesses, parachutes, and (if carried) rescue packs are correctly fitted

iii) reserve chutes are worn

iv) rigid face guards are worn for jumps in timber or bush-land and sufficient rope is carried to permit descent from trees

v) lifejackets are worn for jumps near or into water

c) wind speed or wind gusts must not exceed the limits specified for the parachute

d) the jumping point should be determined by the supervisor after dropping a pilot chute or a streamer to determine drift

e) jumps should not be made in close proximity to runways or other hard surfaces

f) the jump height should not be less than the altitude required to effect a safe landing under a reserve parachute in the event the main parachute fails to properly open.

7. Depot personnel

a) At each depot, adequately trained personnel should be assigned to maintain, inspect, pack, and repack life rafts, parachutes, containers, and packs of survival stores and to carry out periodic inspections.

b) Depot personnel training should include, where necessary:

i) fitting parachutes to containers, life rafts, etc.

ii) joining containers and life rafts for combined drops

iii) loading and securing supplies on board aircraft and surface craft

iv) stocktaking and replenishing supplies

v) inspections.

Attachment 1

Sample Template for a Joint Search and Rescue Exercise

1. Objectives

State the objectives of the joint SAREX and what participants want to achieve from it. SAREX can be in different formats; for example, Table Top SAREX which involves discussion and assists in understanding and testing of a plan, Simulation SAREX where simulators are used to create realism without physically deploying assets, Live or Full Scale SAREX where there is actual deployment of assets to create realism in the testing of the plan, and Command Post SAREX where the decision-making process is tested.

For example:

1.2 The objectives of the joint SAREX are:

a) To provide improved search and rescue (SAR) cooperation between .... *(participating agencies or State RCC)* and .... *(participating agencies or State RCC)*.

b) To provide continuation training for personnel of SAR organizations from .... *(participating agencies or State RCC)* and .... *(participating agencies or State RCC)*.

c) To test the communication facilities and procedures between .... *(participating agencies or State RCC)* and .... *(participating agencies or State RCC)*.

d) To test and determine the effectiveness of the Search and Rescue Units (SRUs) of .... *(participating agencies)*.

2. Date and timing of SAREX

State the agreed date and time for the joint SAREX. Have alternate or contingency plans in the event that a full scale SAREX cannot be conducted due to bad weather or any unforeseen circumstances. It is recommended that a pre-SAREX brief be conducted to ensure all participants understand their roles and the required actions to be taken. State the agreed time for a pre-SAREX brief to be carried out for all participants. States may conduct simultaneous pre-SAREX briefings at their own locations for their local participants. For standardization and to avoid confusion, it is recommended that all timing and dates used should be in UTC as there may be a difference in time and day for different States. After the SAREX, it is also recommended to conduct a de-brief for all participants.

For example:

2.1 Table Top SAREX or A Full Scale Exercise will be held between .... *(participating agencies or State)* and .... *(participating agencies or State)* on .... *(day of the week, date/month/ year)* from .... *(time in UTC)* to .... *(time in UTC)*.

2.2 In the event of bad weather, the Full Scale SAREX will be converted into a Table Top SAREX. The cut off time will be at .... *(time in UTC)*.

2.3 A Pre-SAREX brief will be held on .... *(day of the week, day/month/year)* in .... *(location of the pre-SAREX brief)* commencing at .... *(time in UTC)*.

2.4 A Post-SAREX de-Brief will be held on .... *(day of the week, day/month/year)* in .... *(location of the de-brief)* commencing at .... *(time in UTC)*.

3. Scenario

Discussion and development of exercise scenario with participating State or States and agencies involved. Scenario created should be as realistic as possible to simulate a real incident. A fictitious flight plan or ship's passage plan can be included to provide additional information pertaining to the distressed aircraft/ship. Using fictitious names and/or call signs for the distressed aircraft/ship and its airline/operator will avoid confusion on, for example, social media. Provide a fictitious manifest to indicate the number of people at risk.

For example:

3.1 At .... *(time in UTC)*, a .... *(type of aircraft/ship)*, ... *(name/call sign of distressed aircraft/ship)*, departed from .... *(point of departure)* to .... *(destination)* with .... *(persons on board)*. At .... *(time in UTC)*, aircraft/ship declared "MAYDAY" due to .... *(nature of emergency)* at .... *(location in Lat and Long or with reference to a prominent location known to all)*. .... *(further details of the scenario, as required)*.

3.2 Other information, for example Pilot-in-command/Master's actions, ... equipment carried on board ...., description of aircraft/ship, etc.

4. Participating Organizations

Identify and list all participating agencies. As many responding agencies as possible should be included, both government and private. Air Navigation Service Provider, Aircraft Investigation Bureau, airlines, shipping companies, harbor authorities, etc. should be involved in a SAREX, as they would be directly involved in any real incident.

For example:

4.1 From .... *(State: list participating local agencies, for example, RCC, Civil Aviation Authority, Air Force, Navy, etc.)*

a) ....

b) ....

c) ....

d) ....

e) ....

From .... *(State: list participating local agencies)*

a) ....

b) ....

c) ....

d) ....

e) ....

5. Deployment of exercise search and rescue facilities and call signs

State all the SAR facilities that will take part in the SAREX. It is recommended that SRU call signs should be pre-fixed with the word "SAREX" to indicate that it is an exercise aircraft or surface vessel. This will help avoid confusion between a SAREX and a real incident. A call sign assigned to a particular SAR facility should not be changed and should be used throughout the exercise. Each SRU should have a unique call sign.

For example:

5.1 SRUs from .... *(participating State)* and their call signs are as follows:

Type of SRUs	Call sign	Remarks
Fokker 50	SAREX 01	Search
C130	SAREX 02	Search
Dolphin Helicopter	SAREX 03	Search and Rescue
....	SAREX........................	....
....	SAREX........................	....
....	SAREX........................	....

5.2 SRUs from .... *(participating State)* and their call signs are as follows:

Type of SRUs	Call sign	Remarks
(Helicopter)	SAREX 04	Search and Rescue
(Ship)	SAREX 05	Search and Rescue
....	SAREX.........................	....

6. Communications

State the agreed radio frequencies and other communications facilities to be used in the SAREX. List communication arrangements between the RCCs involved and between the RCCs and the SRUs and other mobile SAR facilities. It is recommended that a communication check be conducted between all parties before the SAREX to ensure serviceability of communication equipment. A standby day may be necessary if the communication check is not satisfactory.

For example:

6.1 The communications arrangement will be as follows:

a) Between .... *(participating agency or State RCC)* and .... *(other agencies or participating State RCC)*

Primary communication *(radio frequencies, telephone numbers, etc.)*

Secondary communication   –   ....

Standby communication   –   ....

b) Between .... *(State RCC and SRUs)*

Primary communication   –   .... kHz or .... MHz

Secondary communication   –   .... kHz or .... MHz

Standby communication   –   .... kHz or .... MHz

6.2 A communication test between .... *(participating agency or State RCC)* and .... *(the other participating agencies or State RCC)* will be conducted prior to the SAREX. The test will be conducted on .... *(day of the week, date/month/year)* from .... *(time in UTC)* to .... *(time in UTC)*.

6.3 In the case of an unsatisfactory communication test, another test will be conducted on .... *(day of the week, date/month/year)* from .... *(time in UTC)* to .... *(time in UTC)*.

6.4 All messages pertaining to the exercise shall be prefixed and ended with the words "EXERCISE EXERCISE EXERCISE". Exercise participants **must not** use any internationally recognized Distress or Urgency Procedure words (for example, "MAYDAY", "PAN-PAN") on radio or telephone systems. Radio communications procedure words should be replaced as follows:

MAYDAY – replace with "Mike Delta"

PAN-PAN – replace with "Papa, Papa"

SÉCURITÉ – replace with "Sierra, Sierra"

This will help to avoid confusion between a SAREX and an actual SAR incident.

7. Search object

In a Full Scale SAREX, States should consider the deployment of a search object (including a locator beacon) to add realism to the exercise. This will enable participating SRUs to practice visual and/or electronic search techniques. The search object can be deployed at the proposed distress location at the SAREX start time. Search objects should be clearly marked as being deployed for exercise purposes.

For example:

7.1 A .... *(description of the search object)* will be provided by .... *(one of the participating agencies)* and will be deployed at .... *(time in UTC)* on .... *(date of the SAREX)* at the distress position.

7.2 The search target is marked with .... *(for example, the word "SAREX")*.

8. Alerting and activation

State clearly the alert and activation processes for the SAREX, including which agency will initiate the distress phase and how the other participating agencies will be notified. In a joint SAREX, if the distress location is within the area of responsibility of a particular State, the State concerned should initiate the alerting and activation phase.

For example:

8.1 Since the distress location is within the area of responsibility of .... *(State)*, ... *(name)* RCC will notify .... *(participating agencies)* to initiate joint SAR operations.

9. Search area

Discuss how to determine the search area and which RCC will do so. In a joint SAR effort, the RCCs involved can determine their own search areas and agree an overall area.

For example:

9.1 The respective SAR mission coordinators (SMCs) will work out a search area upon receipt of the distress location.

9.2 The SMCs shall discuss with each other and agree on a common search area.

9.3 If there is a great difference between the two search areas, the coordinating RCC shall decide on the most probable area and take the necessary action to promulgate the area as a restricted area for SAR operations accordingly.

10. Diplomatic clearance

In a joint SAREX, make necessary arrangements for applying for diplomatic clearance if State assets may be or are required to enter another State's territorial airspace or waters. The application process should be made known to all relevant participating agencies. If there is an agreement in place between participating States, then the agreed procedure should be followed. Provide information regarding the SRUs and particulars of the personnel on board. It is recommended that particulars of the SRUs be provided to the State(s) concerned prior to the SAREX. This will assist in the diplomatic clearance process.

For example:

10.1 .... (State) RCC will send a request to .... (State) for diplomatic clearance to allow .... (State's) SRUs to enter .... (State's) territorial airspace/waters.

10.2 To obtain diplomatic clearance the RCC shall provide the following particulars:

a) unique identifier of the SRU as required by local authorities;

b) type of aircraft or vessel;

c) name of Pilot in Command/Master;

d) names of crew on board (not required for sea asset);

e) area of operation; and

f) date and time of operation.

10.3 The details of the SRUs concerned shall be provided .... *(days/weeks)* before the exercise. Application for diplomatic clearances should be made through the normal channels in order to accelerate the diplomatic clearance process.

11. Search operations

Ensure the safe conduct of the SAREX, especially as regards the air assets. It is recommended that there should be one coordinating RCC providing instructions to SRUs prior to entering the search area. It is also recommended that an aircraft coordinator be deployed to provide instructions to aircraft during transit to and from the search area as well as within the search area. Assign one of the SRUs as the on-scene coordinator, coordinating all the SAR facilities in the search area as well as providing an important communication link with the distressed aircraft/ship.

For example:

11.1 All SRUs shall report to the coordinating RCC or on-scene coordinator prior to entering the search area and while conducting SAR operations in the search area to ensure safety and efficiency in the joint SAR effort. All aircraft involved must adhere to ATC instructions.

11.2 Non-exercise aircraft/surface vessels shall keep clear of the search area unless clearance has been obtained for them to transit through.

12. Rescue operations

Discuss how the rescue operation is to be executed. Live rescue operations provide training and testing opportunities. If personnel are deployed at the scene to simulate a rescue operation, it is recommended to have a safety boat in the vicinity to ensure that the operation is closely monitored and all safety procedures are adhered to. Each SRU will report to the coordinating RCC or on-scene coordinator the number of survivors rescued and the state the survivors are in. This will assist in accounting for all at risk and whether immediate evacuation is required. If possible, recover the search object after the exercise: this will help avoid unnecessary subsequent SAR action. If recovery is not possible, make general broadcasts to warn of the object's location.

For example:

12.1 When the search object is sighted, the SRU shall inform the coordinating RCC. The RCC will disseminate the information to all other participants.

12.2 Recovery of the search object after the exercise will be undertaken by .... *(agency responsible for recovering the search object)*.

12.3 If the search object cannot be recovered, urgent safety information broadcast action will be taken by .... *(agency responsible)*.

13. Emergency landing of participating aircraft

In a joint SAREX, make arrangements for participating aircraft to land in the event of an emergency.

For example:

13.1 .... *(State's)* aircraft participating in the SAREX will be given permission to land at .... *(name of airport or airfield)* if an emergency landing is required.

14. Termination or suspension of SAREX

State how and under what circumstances the SAREX will terminate. Make response arrangements in the event of a real incident occurring during the SAREX. Agree a code word or words which will be understood by all participating agencies and units. Once the code word is broadcast the SAREX will be converted into real SAR operations, at least for the duration of the real emergency.

For example:

14.1 The SAREX will be terminated when:

a) all the Search and Rescue Units have returned to base; or

b) the time for the SAREX has expired and no search object has been sighted.

The SAREX may be terminated or temporarily suspended when there is an actual emergency.

14.2 In the case of a real emergency, the exercise will be converted into a real SAR operation. The code words "NO DUFF NO DUFF" will be broadcast. All participating agencies and units will cease the exercise immediately and await instructions from the coordinating RCC.

14.3 The exercise may be resumed when the real emergency has been resolved, if the participating agencies agree. Resumption of the exercise will be notified to all participants by the coordinating RCC. Alternatively, the real emergency may require the exercise to be terminated.

15. SAREX de-brief

Conduct of a SAREX de-brief is important as this is where the evaluation process of the exercise is presented by evaluation experts who observed the exercise, together with observations by people who actually participated in the exercise scenarios. This is the final step to identify weaknesses and good practices and development of

recommendations for improvement. Agree on a date and venue to conduct a SAREX de-brief including all exercise participants.

For example:

15.1 SAREX de-brief will be held on .... *(day of the week, date/month/year)* commencing at .... *(time in UTC)*.

15.2 The venue for the SAREX de-brief will be .... *(name the venue and give its address)*.

16. SAREX Controllers/Evaluators/Observers

Name the personnel who will be involved in the SAREX as observers, evaluators and exercise controllers. Evaluators and controllers in particular must have SAR expertise so that they will understand what is to be evaluated and how to control the exercise to maximize its value.

For example:

16.1 Personnel involved in the SAREX as exercise controllers, evaluators and observers will be as follows:

.... *(Agency)* .... *(name and role in the exercise)*
.... *(Agency)* .... *(name and role in the exercise)*
.... *(Agency)* .... *(name and role in the exercise)*

17. Invitation to Observers

Agencies or States may consider inviting observers from other agencies or foreign countries or international organizations to attend and observe the SAREX. These personnel can provide valuable feedback for improvement to the system. Agree which State will do the invitations and who should be invited to attend.

For example:

17.1 Invitations to observers to observe the SAREX will be provided by .... *(agency providing the invitation)*. Observers will be positioned at .... *(venue(s) for observation of the SAREX)* and will be escorted by officers of .... *(agency or agencies providing escorts)*.

a) .... *(name of country or organization)*

b) .... *(name of country or organization)*

c) .... *(name of country or organization)*

d) .... *(name of country or organization)*

18. News media coverage

If there is provision for news media coverage of the SAREX, agree the necessary arrangements (spokespeople, drafting of press releases, etc.). During a SAREX, it is recommended that a joint information center be set up as this will ease the burden on RCCs. Updates by RCCs are provided to one source thus ensuring the provision of timely, clear, accurate and consistent reports to the news media. This will provide a training opportunity in dissemination of **information in a real incident.**

For example:

18.1 Information updates will be provided by the RCC(s) to a Joint Information Centre for reports/updates/ press releases to the news media.

18.2 The Joint Information Centre will be established and staffed by the following agencies:

.... *(name of agency)*
.... *(name of agency)*
.... *(name of agency)*

18.3 If there is a requirement for a joint press release on the SAREX to be issued, ... (agency that will produce the draft) will draft the press release and forward it to .... (other participating agencies, as agreed) for concurrence before it is issued.

19. SAREX report

A SAREX report is important as it will serve as a permanent record of the exercise. Each element of the exercise should be recorded and lessons learnt during the exercise captured. Agree who should produce the SAREX report for dissemination to all participating agencies and other interested parties.

For example:

19.1 *(Insert Agency or State)* will produce the SAREX report with assistance from .... *(the other participating agencies or State(s))*. Photographs will be made available for the SAREX report.

19.2 A copy of the report will be sent to each of the following participating agencies, countries and international organizations.

a) .... *(agency or country or international organization)*

b) .... (agency or country or international organization)

c) .... (agency or country or international organization)

20. Venue for the next SAREX

It is good to plan for an annual joint SAREX with relevant agencies and/or neighboring States. State the date and venue if possible for the next SAREX coordination meeting and the proposed SAREX type and date.

For example:

20.1 The next SAREX Coordination Meeting will be held at .... (venue) on .... (date/ month/year).

20.2 The next SAREX is scheduled to be held on .... (date/month/year). It is proposed that this SAREX will be a .... (type) exercise.

Attachment 2

Checklist for Multiple Aircraft SAR Operations

The checklist below is for example purposes and for general guidance only. Each SAR operation is different therefore not all of the items below might be needed and additional ones might be required. Some items might also be carried out by different facilities and units from those indicated below.

Serial	Task	ACO	SMC	ATS	SRU
1	Declare emergency phase		X		
2	Identify requirement for ACO		X		X
3	Designate and notify ACO	X	X		
4	Inform ATS units and establish area of SAR action		X	X	
5	Identify aircraft and capabilities	X	X		
6	Develop and promulgate plan	X	X		X
7	Establish cooperation with OSC	X	X		
8	Coordination with ATS	X	X	X	X
9	Manage aircraft activities	X	X	X	
10	Call ACO before entering area	X			X
11	Call ACO when leaving area	X			X
12	Monitor and update on-scene plan	X	X		
13	Provide regular situation reports	X	X		
14	Manage fuel and numbers of airborne SRUs	X	X	X	X
15	Stand down or relieve the ACO	X	X		
16	Cancel/terminate the SAR operation	X	X	X	X
17	Cancel area of SAR action	X	X	X	X

Notes:

1. "X" signifies action required or the receipt of information.

2. For the purposes of this checklist, "SRU" refers to aircraft involved in the SAR operation.

Attachment 3

Standard Format for Search and Rescue Situation Report (SITREP)

Situation reports (SITREPs) should be compiled as follows:

3.1 Short form

To pass urgent essential details when requesting assistance, or to provide the earliest notice of a casualty.

Transmission priority (distress/urgency, etc.) _____

Date and time (UTC or local date time group) _____

From (originating RCC) _____

To _____

SAR SITREP (number) (to indicate nature of message and completeness of sequence of SITREPs concerning the casualty) _____
_____

Identity of casualty (name, call sign, flag State) _____
_____

Position (latitude/longitude) _____
_____

Situation (type of message, distress or urgency; date/time; nature of distress/ urgency, for example, fire, collision, medical) _____
_____

Number of persons at risk _____

Assistance required _____

Coordinating RCC _____

3.2 Full form

To pass amplifying or updating information during SAR operations, the following additional sections should be used as required:

Description of casualty (physical description, owner/charterer, cargo carried, passage from/to, life-saving appliances carried, etc.) _____
_____

Weather on scene (wind, sea/swell state, air/sea temperature, visibility, cloud cover/ceiling, barometric pressure) _____
_____

Initial actions taken (by distressed craft and RCC) _____
_____

Search area (as planned by RCC) _____
_____

Coordinating instructions (OSC designated, units participating, communications, etc.) __
_____

Future plans _____
_____

Additional information/conclusion (include time SAR operation terminated) _____
_____

Note 1: Each SITREP concerning the same casualty should be numbered sequentially.

Note 2: If help is required from the addressee, the first SITREP should be issued in short form if remaining information is not readily available.

Note 3: When time permits, the full form may be used for the first SITREP or to amplify it.

Note 4: Further SITREPs should be issued as soon as other relevant information has been obtained, particularly changes to on-scene weather. Information already passed should not need repetition.

Note 5: During prolonged operations "no change" SITREPs, when appropriate, should be issued at intervals of about three hours to reassure the recipients that nothing has been missed.

Note 6: When the incident has been concluded, a final SITREP should be issued as confirmation.

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Separability Clause. - If for any reason, any provision of this Memorandum Circular is declared invalid or unconstitutional, the other part or parts thereof which are not affected thereby shall continue to be in full force and effect.

Repealing Clause. - All orders, rules, regulations, and issuances, or parts thereof which are inconsistent with this Memorandum Circular are hereby repealed, superseded, or modified accordingly.

Determination of changes. – To highlight the amendments and/or revisions in the Memorandum Circular, the deleted text shall be shown with strikethrough and the newly inserted text shall be highlighted with grey shading, as illustrated below:

1. Text deleted: ~~Text to be deleted is shown with a line through it~~.
2. New text inserted: New text is highlighted with grey shading.
3. New text replacing existing text: ~~Text to be deleted is shown with a line through it~~ followed by the replacement text which is highlighted with grey shading.

Effectivity Clause. - This Memorandum Circular shall take effect fifteen (15) days following completion of its publication in a newspaper of general circulation or the Official Gazette and a copy filed with the U.P. Law Center - Office of the National Administrative Register. These amendments shall be incorporated into the Manual of Standards for Search and Rescue (MOS-SAR).

Signed this __03__ day of ____FEB____ 2025, at the Civil Aviation Authority of the Philippines, MIA Road, Pasay City.

CAPTAIN MANUEL ANTONIO L. TAMAYO
Director General