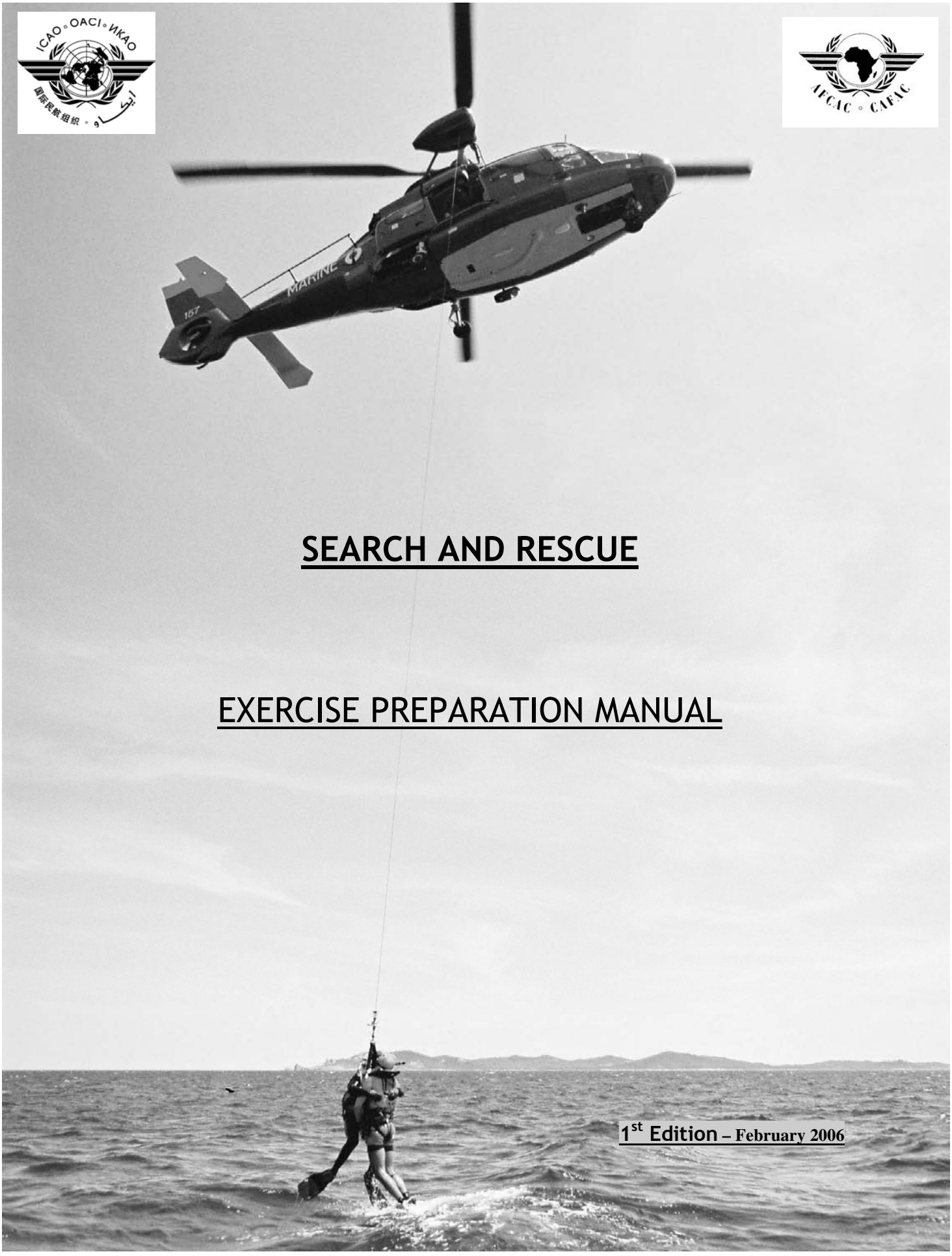

SEARCH AND RESCUE

EXERCISE PREPARATION MANUAL

1st Edition – February 2006

ICAO / AFCAC – SAR PROJECT

PREPARING A SAR EXERCISE

1. CONTENTS

1. CONTENTS 1

2. INTRODUCTION 3

3. PREPARING A SAR EXERCISE: TIME LINE 4

4. IDENTIFY THE FUNCTIONS TO BE EVALUATED AND CHOOSE THE TYPE OF EXERCISE 6

4.1. PRINCIPAL FUNCTIONS OF A SAR SYSTEM 6
4.2. DEFINE THE FUNCTIONAL BLOCK TO BE TESTED AND CHOOSE THE TYPE OF EXERCISE (STEPS 1 AND 2) 13
4.2.1. Three types of SAR exercises 13
4.2.2. Example of a Communications Exercise 13
4.2.3. Example of a Co-ordination Exercise 14
4.2.4. Example of a Full-Scale Exercise 15

5. CHOOSE THE EXERCISE AREA (STEP 3) 16

5.1. PLAN THE EXERCISE AND SELECT THE AREA 16
5.2. CHOICE OF AREA 16

6. PLAN INTERMINISTERIAL CO-ORDINATION (STEP 4) 17

7. SET UP THE EXERCISE PREPARATION TEAM (STEP 5) 17

7.1. EXERCISE DIRECTOR 18
7.2. SCENARIO TEAM 18
7.3. LOGISTICAL SUPPORT TEAM 19

8. DRAFT THE EXERCISE SCENARIO (STEP 6) 19

9. FUNDING FOR THE EXERCISE (STEP 7) 20

10. PERSONNEL PARTICIPATING IN THE EXERCISE 20

10.1. EXERCISE CO-ORDINATORS 21
10.2. OBSERVERS 21
10.3. ACTORS 21
10.4. OFFICIALS AND VISITORS 22
10.5. MEDIA 22
10.6. VIDEO OPERATORS 22
10.7. DUMMY OBJECT 23

11. WRITE THE EXERCISE MATERIAL (STEP 8) 23

11.1. EXERCISE DOCUMENTS 23
11.2. DOCUMENT COLOUR CODING 23
11.3. GENERAL INSTRUCTIONS (WHITE) 24

Draft version

11.4. MEETING SCHEDULE (WHITE) 24
11.5. STORYLINE (WHITE) 25
11.6. SPECIFIC NARRATIONS (BLUE) 25
11.7. SPECIFIC MESSAGES (PINK) 25
11.8. INSTRUCTIONS FOR CONTROL PERSONNEL (GREEN) 26
11.8.1. Sequence of events (GREEN) *26*
11.8.2. Chronology of specific messages (GREEN) *27*
11.8.3. Evaluation forms (GREEN) *27*
11.9. DISTRIBUTION OF EXERCISE DOCUMENTS 27

12. EMERGENCY PROCEDURES 27

13. EXERCISE EVALUATION (STEPS 11, 12) 29

13.1. PRINCIPLE 29
13.2. EXERCISE EVALUATION PROCESS 29
13.3. EVALUATION ACTORS 29
13.3.1. Exercise Director *29*
13.3.2. Observers *30*
13.4. EVALUATION FORMS 30
13.4.1. Purpose of the evaluation forms *30*
13.4.2. Evaluation form content *31*
13.5. MEETINGS 31
13.5.1. Immediate meeting *31*
13.5.2. Mid-evaluation meeting(s) *31*
13.5.3. Final meeting *32*

14. POST-EXERCISE ACTIVITIES 33

14.1. FINAL REPORT ON THE EXERCISE (STEP 12) 33
14.2. ACTION PLAN TO CORRECT DEFICIENCIES (STEP 13) 33

15. APPENDIXES 34

ANNEXE 1. EXCERPT FROM ANNEX 12, SECTION 4.4 35

ANNEXE 2. EXAMPLE OF GENERAL INSTRUCTIONS 36

ANNEXE 3. EXAMPLES OF STORYLINES 43

ANNEXE 4. EXAMPLES OF NARRATIONS / SPECIFIC MESSAGES 44

ANNEXE 5. EXAMPLE OF EXCERPTS FROM SEQUENCE OF EVENTS 45

ANNEXE 6. EXAMPLE OF EVALUATION FORMS 46

ANNEXE 7. EXAMPLE OF PLAN FOR FINAL REPORT ON EXERCISE 48

Draft version

2. INTRODUCTION

States who are party to the Chicago Convention are obliged to provide assistance to any aircraft in distress and to its occupants. Article 25 and Annex 12 of the Convention set out the nature and scope of this obligation. Annex 12 in particular states, in section 4 – '*Training and exercises,'* Chapter 4 – '*Preparatory Measures'* – that 'to achieve and maintain maximum efficiency in search and rescue, Contracting States shall provide for regular training of their search and rescue personnel and arrange appropriate search and rescue exercises.'

Each of the 188 Contracting States in the International Civil Aviation Organization (ICAO) who has not advised the ICAO Council of a difference between its national practices and the provisions of this standard has undertaken to comply with this obligation.

However, it is rare for States in the Africa-Indian Ocean (AFI) region to regularly organize SAR exercises, as has been shown by the SAR evaluations conducted as part of the technical cooperation project between ICAO and the African Civil Aviation Commission (AFCAC) since March 2003. There are a number of reasons for this situation (absence of a rescue co-ordination centre, funding problems, lack of political will…), on which the development of this manual will unfortunately have no direct impact.

However, a number of States do not organize SAR exercises because they lack the necessary technical expertise, despite a real political will to comply with standard 4.4 of Annex 12, as well as sufficient financial, material and human resources to organize SAR exercises in good conditions. For the civil aviation officers of these States and those in charge of their SAR operations, this manual provides specific technical instructions for conducting SAR exercises that can significantly improve the performance of the national SAR system.

When better prepared and better trained, the SAR personnel of these States will be better equipped to cope with an eventual air disaster. Statistics show that, although air traffic is increasing steadily, accident rates are tending to stabilize. It is therefore, unfortunately, statistically probable that international air transport will continue to generate accidents in Africa and elsewhere. Yet in Africa, more than in other areas, the need for training and exercises is crucial given the insufficient training of many SAR personnel on the one hand (basically due to a chronic lack of funding) and, on the other, the relatively low number of accidents (given the very low levels of traffic in the region, about 2% of world traffic – source: Doc. 9851 / Annual Report of the Council of ICAO – 2004). In this context it is vital to arrange regular SAR exercises of all types to ensure that SAR personnel maintain a minimum level of expertise, as they are expected to respond professionally and effectively in the event of an accident. Tragic events in recent years have cruelly pointed out that this has, unfortunately, not always been the case.

Personnel who use this manual regularly are invited to contact ICAO or AFCAC if they have questions about the content, or to make suggestions to improve the relevance of the manual and ensure that it is well adapted to the needs of SAR personnel in the AFI region States.

Draft version

3. PREPARING A SAR EXERCISE: TIME LINE

Step 1

Identify the functions to be evaluated

↓

Step 2

Define the appropriate types of exercise

↓

Step 3

Choose the exercise area

↓

Step 4

Plan interministerial co-ordination:
define resources, date, time frame and location

↓

Step 5

Set up the exercise preparation team

↓

Step 6

Draft the exercise scenario

↓

Step 7

Funding for the exercise

↓

Step 8

Write exercise material

↓

Step 9

Brief operational partners

↓

Step 10

CONDUCT THE EXERCISE

↓

Step 11

'Hot' debriefing

↓

Step 12

Draft version

Write a final report on the exercise, and send it to partners involved

↓

Step 13

Hold follow-up meetings to correct the deficiencies identified

Draft version

4. IDENTIFY THE FUNCTIONS TO BE EVALUATED AND CHOOSE THE TYPE OF EXERCISE

4.1. Principal Functions of a SAR System

The purpose of the SAR exercise is to evaluate the effectiveness of a functional element of the SAR system. Thus, before one defines the type of exercise to be organized, one must identify the functions that will be tested during the exercise. This first step will determine the subsequent preparations for exercise. Each exercise should be part of a yearly or even multi-year program of exercises which, when completed, will have tested the entire system. Ideally, several partial exercises should be organized each year and a full national or international exercise should be organized at least every two years. Lastly, at a later stage in the service quality control process, a set of procedures, based specifically but not exclusively on the exercises, will make it possible to control system quality and adapt the timing and nature of the exercises based on feedback from real cases, previous exercises, international documentation, the experience of neighbouring States, etc.

The table below shows the principal SAR system functions, set out in chronological order and by player. To simplify things, only the three main players are represented:

- Rescue co-ordination centre (RCC)
- Air traffic control (ATC) services
- SAR units (SRU)

No distinction is made, at this point, between sea, land or air units, nor on the status of these units (military, public safety, private…).

Draft version

SAR SYSTEM FUNCTIONS

PREPARATORY MEASURES	→	**AWARENESS**			
Update control lists and operational plans	RCC		Receive SAR phase initiation (from ATC)	Record information	Understand / analyze information
Update SRU inventory	RCC		Receive information regarding a distress event (witnesses or other alerting post…)		
Update quick reference forms	ATC	Emergency classification	Initiate SAR phase and transmit information regarding the distress event to RCC		
Update in-flight emergency assistance procedures	ATC				
Maintain operational monitoring	SRU				

RCC Functions	ATC Services Functions	SRU Functions

INITIAL ACTION					
Determine which RCC will co-ordinate	Appoint an SMC and staff to provide assistance	Evaluate emergency level	Verify, gather information, initiate communication search	Mark the aircraft's trajectory on a map (known track + expected / estimated track)	Estimate time when aircraft would normally run out of fuel, check aircraft performance in hazardous flight conditions
			Re-evaluate emergency level		
Record information					
Notify parties concerned					
Transmit information about the distress event to the RCC (flight plan, eye-witness accounts, reported reception of a beacon signal by a pilot…)					

Draft version

PLANNING STAGE									
Estimate incident / accident area	Assess situation (weather conditions, topography…)	Estimate survivor motion after the accident (drift)	Estimate search conditions	Chart search areas	Identify, select and alert SAR units	Prepare search patterns	Assign search areas / search plans to SAR units	Organise coordination in the field	Develop and communicate search plans
Record information									
Re-evaluate level of emergency									
Inform appropriate parties (services)									
Manage media									
Transmit distress event information (witnesses, pilot reporting reception of a beacon signal) to the RCC – continual updates									
					Receive information from RCC		Evaluate the situation, prepare the mission	Organise coordination in the field working closely with RCC	

Draft version

OPERATIONAL STAGE						
Operations Stage – Search						
Develop search plans	Assign search areas to SAR units / Brief SAR units	Coordinate search	Conduct and analyse personnel debriefings	Re-evaluate location of accident	Re-evaluate situation	Update search plans
				Select rescue method and choose resources to be used		
Record information						
Re evaluate emergency level						
Inform appropriate parties (services)						
Provide assistance at sea, if necessary						
Manage media						
Control SAR air traffic flying in controlled airspace						
	Receive detailed briefing from RCC		Debrief RCC (search results for assigned areas)			
		Coordinate operations in the field, if necessary, and as arranged with the RCC				
		Provide assistance at sea, if necessary				
		Remain in continual contact with RCC				
				Select rescue method and resources to be used, working closely with the RCC		

RCC Functions	ATC Services Functions	SRU Functions

OPERATIONAL STAGE		
Operational Stage – Rescue		
Activate emergency plans and delegate eventual direction of rescue operations to competent authorities		
If no delegation, plan for accounting for survivors	If no delegation, activate appropriate medical units (fixed and mobile)	If no delegation, coordinate evacuation operations
Decide whether and what kind of survival equipment to drop		
Record information		
Re-evaluate emergency level		
Inform appropriate parties (services) (accident investigations, police / coast guard…)		
Provide assistance at sea, if necessary		
Manage media		
Control SAR air traffic flying in controlled airspace		
Drop survival equipment, in accordance with orders from RCC	Provide rescue personnel and equipment, in accordance with RCC instructions	
Coordinate operations in the field, if necessary, and as arranged with the RCC		
Provide assistance at sea, if necessary		

RCC Functions	ATC Services Functions	SRU Functions

CONCLUSION				
Cancel emergency phases	Decide to stop searches	Stop rescue operations	Suspend or close SAR operation	Produce report
				Produce report, if necessary (may not be necessary in case of Incerfa / Alerfa)
	Stop search operations	Stop rescue operations		Produce report

Draft Version

4.2. Define the Functional Block to be Tested and Choose the Type of Exercise (Steps 1 and 2)

The purpose of an exercise is to evaluate the effectiveness of a functional element of the SAR system or the entire SAR chain. The type of SAR exercise is thus determined by the functions of the system to be tested.

Based on the exercise objectives, the preparation team chooses the type of exercise. This decision has an impact on which parties will be involved, how long it will take to prepare the exercise and the cost of the exercise.

The choice of exercise may also be determined by regulatory requirements, which may specify a minimal frequency for conducting each type of exercise.

The very first step in preparing a SAR exercise involves defining the purpose and objectives as precisely as possible. Then, in addition to choosing the functional element to be tested, the exercise director will have answered certain vital questions in the very first phases of the preparations, such as: will the exercise be held during the day or night? Will searches be held on land or on water (for the States concerned)? In the case of full-scale exercises, should certain specific types of SAR units be involved?

4.2.1. Three types of SAR exercises

The IAMSAR manual defines three levels of SAR exercises:

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 Co-ordination 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 Co-ordination Exercise in that actual SAR facilities are deployed. This increases the scope of SAR system testing and adds realistic constraints due to the times involved in launching, transit, and activities of the SAR units (international abbreviation: SRU).

These exercises may be national or international.

4.2.2. Example of a Communications Exercise

In the following example, the functions being tested are “Receive information” and “Record information” from the RCC. The goal of the exercise is to test the RCC’s capability to receive information (test various communication circuits, verify the 24-hour operability of the RCC, check whether RCC personnel can correctly use the existing communication receiving equipment…) and check whether the information received is systematically and correctly

Draft version

recorded (in a register, rough book or daybook). This type of exercise can be repeated regularly, without advance notice, at minimal cost.

The exercise proceeds as follows: information is injected, via several channels, to the RCC. For example: the area control centre (ACC) may announce that it has lost a plane from its screens. This type of exercise should be conducted periodically, at different times of the day.

From the moment the first communication is received, the RCC's actions are evaluated: ability to properly use the centre's communication resources; ability to get the maximum amount of information from each critical report; systematic recording of all information in the register, rough book or daybook kept for that purpose.

As soon as the information is received and recorded by the RCC, the exercise director terminates the exercise.

Note: the exercise could be based on other assumptions, such as an airline pilot announcing that she has received a distress signal at a given altitude and area; or the officers of a flying club calling to report that one of their planes is "failing to respond"; or a person calling to say they have seen a plane in difficulty; or an alert is received from Cospas-Sarsat… etc.

AWARENESS			
	Receive SAR phase initiation (ATC)	Record information	Understand / analyse information
	Receive information about a distress event (from witnesses or another alerting post…)		
Emergency classification	Initiate SAR phase and transmit information regarding distress event to RCC		

4.2.3. Example of a Co-ordination Exercise

An exercise may also test a more complex "functional block," with interfaces among the various parties, as in the following example.

To return to the previous example (the ACC announces that it has lost a plane from its screens), the exercise now focuses on testing the interface between air traffic control (ATC) and the RCC.

In addition to monitoring the information being received from the ATC at the RCC, the goal of the exercise is to monitor how the RCC understands and analyses the information, and to monitor the information exchanges between the RCC and ATC.

The exercise director terminates the exercise before the initial action stage is engaged.

AWARENESS			
	Receive SAR phase initiation (ATC)	Record information	Understand / analyse information
	Receive information about a distress event (from witnesses or another alerting post…)		
Emergency classification	Initiate SAR phase and transmit information regarding distress event to RCC		

Draft

4.2.4. Example of a Full-Scale Exercise

A Full-Scale exercise tests the functionality of the entire SAR system. Such an exercise is very complex. The goal is to test the efficiency of all players in the SAR chain in a given service and its interconnections, for all services, but also to test the functioning of the interfaces between all the services in the system.

First, the various RCC operators are tested, then the connection between the RCC and the air search crews. This is followed by verification of the teams' operationality: the time it takes them to respond to the alert, their performance in the field, transmissions between the RCC and the land or sea operations command post, the work in the land or sea command posts, etc.

The exercise may also test the coordination between the RCC and the various units at the crash scene (on-scene medical teams, fire fighters, police …) or the on-scene co-ordinator (OSC), as applicable.

Other aspects that are evaluated include triage and evacuation of the injured, their assignment to the hospitals in the region, their reception and care at these hospitals, identification of victims, etc.

Obviously, such an exercise is very complete and, as a result, very complex. It requires detailed preparation, a large number of participants and a fairly significant budget.

On the other hand, it makes it possible to increase the scope of the SAR system verifications and add realistic constraints related to the time it takes the SAR units to get moving, get where they need to go and do their work.

5. CHOOSE THE EXERCISE AREA (STEP 3)

5.1. Plan the Exercise and Select the Area

The national SAR co-ordinator or the SAR Co-ordinating Committee determine, on a long-term basis, the areas where exercises will be organized. Normally, the SAR system should be tested by means of a full-scale exercise at least every two years.

5.2. Choice of Area

It is the responsibility of the exercise director to choose the exercise area, based on directives from the national SAR co-ordinator or the SAR Co-ordinating Committee, and, eventually, in conjunction with the local authorities concerned.

Selection of an exercise area is guided by whether the site engages the SAR system functionalities the organizers wish to test (limited accessibility, topography, inhospitable or sparsely populated area, sea or desert, tropical forest, swamps…). The director is, however, responsible for site safety, and will review the exercise area to identify specific features or aspects with a view to adequately evaluating and preventing risks.

Once the area is chosen, the exercise director drafts a request for a message of flight restriction in the related portion of airspace, namely a notice to airmen (NOTAM).

Draft version

6. PLAN INTERMINISTERIAL CO-ORDINATION (STEP 4)

It is the responsibility of the National SAR Committee to define, on an annual basis, the calendar for full-scale exercises. Note that under the terms of Annex 12 of the Chicago Convention and the International Aeronautical and Maritime Search and Rescue (IAMSAR) manual, this committee normally includes high-level representatives from all departments involved in the national SAR system.

However, in States where the national SAR committee is not functional, it may be desirable to institute, for full-scale exercises that require the deployment of operational units, an Exercise Commission, headed by the national SAR co-ordinator, with representation from the authority that has the power to engage all parties that could be solicited during the exercise. The advantage of such a commission is that it would involve, from the very start, the parties who can make a technical, financial or administrative contribution.

This commission could include local authorities, as well as senior-level health, public safety, police or customs authorities, as well as national or international funders.

Such a commission validates the nature, scope and goals of the exercise and ensures that financial and logistical support is always available.

However, to maintain confidentiality, some or all of these prerogatives may be delegated to the exercise director.

No matter what the exercise scope and type, one of the first and most important actions, even before planning begins, is to assign responsibility for exercise planning to a competent person or group. To control events during the exercise, advance planning is required. Without such control, the exercise quickly becomes chaotic, with very little usefulness.

There are two categories of persons who work on preparing an exercise (except for a Communications Exercise):

- the exercise preparation team (EPT);
- the persons responsible for the operational side of the exercise. This second category, which cannot be fully known until after the scenario has been written, is further sub-divided into personnel responsible for supervising the exercise, and personnel in an operational role.

7. SET UP THE EXERCISE PREPARATION TEAM (STEP 5)

Defining and setting up the team responsible for preparing a SAR exercise can have a critical impact on the success of the operation. The process should fufill two objectives:

- Obtain the agreement of all departments likely to be involved in the activities related to the exercise.

Draft version

- Involve professionals to capitalize on their expertise throughout the process of organising a SAR exercise.

Members of the exercise preparation team must therefore be available and present for the entire period of the preparation, organisation, conduct and evaluation of the exercise. A typical EPT is usually comprised of the following:

- Exercise director
- Scenario team
- Logistical support team

7.1. Exercise Director

The exercise director is appointed by national authorities to assume responsibility for the exercise from start to finish.

He or she:

- directs and approves the work of the scenario team during the planning stage, in accordance with the purpose and objectives of the exercise, as defined by the committee or the National SAR Co-ordinator;
- directs the information meetings;
- performs the duties of chief controller during the exercise;
- when so delegated by the National SAR Co-ordinator, plans and conducts evaluation meetings;
- drafts the report at the end of the exercise.

The person appointed to this position is usually a fairly high-level representative of the main agency involved in the exercise, or a representative of the National SAR Co-ordinator (SC). He or she may also be the head of the RCC/RSC or an officer of the National SAR Co-ordinator or one of its collaborators.

Assistant directors may also be appointed. It is important to note that the presence and availability of this authority should be guaranteed throughout the preparation, enactment and evaluation of the exercise.

7.2. Scenario Team

Members of the scenario team should be selected based on their personal qualifications (ability to write, for example) and/or professional qualifications (knowledge of airspace and air operations, the State's airports, the RCC, procedures to be evaluated, etc.) so that most of the fields related to the exercise can be covered.

The writing team must be made aware of the importance of keeping all of their preparatory work strictly confidential. To this end, it is desirable to keep the team as small as possible given the scope of the exercise.

Draft version

The team's critical mission is to assist the exercise director in drafting the exercise scenario, based on the goals of the exercise and taking into account the identified resources. Once the scenario has been approved, the team must organise the logistics and prepare all the documents required for the exercise.

7.3. Logistical Support Team

Reporting directly to the exercise director and carrying out actions based on the scenario, the logistical support team is responsible for organising the logistics required for the exercise to run smoothly.

This team's mission is twofold: on the one hand it helps execute the scenario (e.g.: placing of dummy objects, wreckage, a beacon, preparing victim identification cards …); on the other it is responsible for background logistics of the exercise (meals, transportation, accommodation – as applicable), in accordance with the administrative and financial decisions made previously by the SAR Co-ordinator or the National SAR Co-ordinating Committee.

Note: The team providing logistical support for the exercise must be careful to interfere as little as possible with the teams providing logistical support to the operational services involved in the exercise, which are also monitored during the exercise.

Like the members on the scenario team, the logistical support team must be made aware of the importance of keeping all of their work strictly confidential.

Note: Access to persons involved in the exercise in certain restricted areas (e.g.: RCC) must be arranged before the exercise is conducted (appropriate accreditations must be provided by the competent authority).

8. DRAFT THE EXERCISE SCENARIO (STEP 6)

The scenario is based on the purpose and objectives of the exercise (cf. 4.2 – Define the Functional Block to be Tested and Choose the Type of Exercise (Steps 1 and 2)).

When the exercise goals, objectives, type and area (cf. 5.2 – 5.2 Choice of Area) have been decided, the EPT writes the scenario for the exercise.

It is at this stage that the EPT decides on the operational difficulties to be encountered. For instance, it could write the following difficulties into the scenario:

- bad weather conditions;
- inaccurate eye-witness accounts;
- no flight plan;
- pilot navigation error;
- critical period or time frame (night, weekend, holidays / statutory holidays);
- critical location (sea, mountain, desert, swamp);
- technical communication problems.

Draft version

9. FUNDING FOR THE EXERCISE (STEP 7)

The financial requirements for holding the exercise depend largely on the type of exercise, and more particularly on whether or not operational resources are deployed.

For communication and co-ordination exercises, the costs, given the fact that no resources are deployed, are minimal or nonexistent.

However, for a full-scale exercise, a number of expenses must be taken into account:

- operations cost of resources deployed;
- insurance for volunteers;
- transportation (dummy objects, participants, visitors…);
- acquisition of mannequin(s);
- video equipment and operators;
- overhead (office equipment, telecommunications…);
- meals for participants;
- compensation for ham radio associations.

Usually, these costs (including operational unit costs) are assumed by the departments responsible for the resources deployed. However, in some States, provisions related to funding the operational costs of SAR units are set out in specific texts.

In addition, during the preparatory meetings, provisions for the funding of certain exercise costs may have been made based on the specific constraints of the exercise.

Repairing damage that occurs during an exercise is, unless otherwise stipulated, normally assumed by the author of the damage, the administration the author belongs to or its insurance.

10. PERSONNEL PARTICIPATING IN THE EXERCISE

There are eight types of participants:

1) Exercise director and exercise preparation team (EPT)
2) Co-ordinators
3) Observers
4) Actors
5) Visitors
6) Media
7) Video operators
8) Dummy objects

The functions of the exercise director and EPT were discussed in section 7.1 - Exercise Director.

Draft version

10.1. Exercise Co-ordinators

The co-ordinators determine and control the pacing and direction of the exercise by transmitting messages to participants and observing their reactions. They work in the exercise control room and the field, under the orders of the exercise director, with whom they are in constant contact.

The co-ordinators help maintain a safe exercise area and inform the exercise director of any incidents or accidents that occur during the exercise. They enter information in the registers opened for the exercise.

They do not play an active operational role in the exercise scenario, but may, as much as possible, assist observers.

One coordinator is specifically assigned to assist the exercise director in the control room. This person is chosen from the exercise preparation team and must be completely familiar with the organisation of the exercise.

10.2. Observers

Observers must be present at the various locations where the operational actors are engaged. They observe and assess the conduct of the exercise, the transmission of messages and the reactions of the various actors. Observers fill in the evaluation forms developed during the preparation phase and are a key source of information at evaluation meetings and for the final exercise report.

Like co-ordinators, observers do not play a role in the scenario. They report any incident or accident that occurs during the exercise to the exercise director, with whom they are in constant contact. The number of control personnel (co-ordinators and observers) assigned to observe is not governed by set rules; it depends on the scope of the exercise, the number of participants, and the locations and agencies involved.

Ordinarily, the core group of control personnel is the exercise preparation team (EPT), because they developed the exercise and know every detail. The EPT may be reinforced by additional co-ordinators and observers, if warranted by the nature and scope of the exercise.

In a medium or full-scale exercise, the control staff should include at least one exercise director, three to five co-ordinators and as many observers. The same person may sometimes be both a co-ordinator and an observer.

10.3. Actors

There are two types of actors:

- actors who generate events based on specific instructions and who play a role according to the scenario: witnesses, dummies, victims, passengers, etc.;

- operational actors reacting to events, who are not, in principle, given any instructions beforehand (with some exceptions). They carry out their ordinary roles (air traffic controllers, police, SAR mission co-ordinators …). They act in accordance with the operational procedures of the different services to which they belong.

Draft version

The sequence of events must be followed and co-ordinators must verify that actors ("players") are reacting realistically, that is, as if they were involved in a real incident. Control personnel must be aware of safety aspects during the exercise and the need to avoid damage to equipment.

10.4. Officials and Visitors

It is important to prepare for the presence of certain officials (ministers, department heads, other dignitaries) who will wish to attend all or part of the exercise. All officials / visitors must:

- give the exercise director advance notice of their plans to attend, so that the exercise director can take appropriate measures;
- be welcomed and escorted at all times by a designated co-ordinator;
- wear exercise identifying items (badge, armband, scarf or jacket);
- have attended a specific information meeting before the exercise.

Officials / visitors should not:

- be left in the exercise area without an escort;
- interfere in the scenario;
- make contact with or talk with actors;
- be in possession of confidential exercise documents before or during the exercise.

Some officials may wish to move about during the exercise. The organisation and conditions of such movements must be carefully planned and prepared in advance.

10.5. Media

Any exercise of this type may, wittingly or unwittingly, attract media attention. As during a real rescue effort, a plan and methods for dealing with media pressure must be prepared in advance, so that all contacts with the media are managed appropriately.

In preparation for the exercise, a media/press resource person may be designated from the exercise preparation team to promote the event to certain invited media.

10.6. Video Operators

The organisers may wish to video the exercise so that they have a teaching aid for further training by the various departments involved. To that end, cameras may be placed in the accident area, in the RCC, at the control centre, etc.

However, it is important to carefully prepare and monitor this activity (specific schedule, special information meeting, mandatory accompaniment, specific identifying markers and advance information to all actors) so that the filming does not interfere with the exercise. In particular, a specific time schedule should be drawn up.

Draft version

It must also be ensured, before videoing starts, that the legal provisions regarding image copyright are respected.

Lastly, video operators must maintain strict confidentiality.

10.7. Dummy Object

A dummy is used to simulate wreckage or survivors, as realistically as possible. For example, during a search for survivors at sea, a buoy can be used to simulate an individual or a barrel to simulate a life boat. During an air-land rescue exercise, a scrapped bus or car can be used to represent aircraft wreckage.

The dummy object plays a critical role in the success of the exercise. It should be correctly placed, marked and protected so that it:

- does not impede, wherever possible, normal activities in the area;
- is not subject to vandalism by people who are not involved in the exercise.

11. WRITE THE EXERCISE MATERIAL (STEP 8)

11.1. Exercise Documents

To be effective and achieve its purpose and objectives, an exercise must prepared and directed with care. The idea is not to simply simulate an incident to see how people react. The direction and pace of the exercise must be controlled by following the scenario.

The content of the exercise materials changes with each exercise, but for full-scale exercises it usually includes the following:

- general instructions and appendixes;
- storyline;
- specific narrations;
- specific messages
- sequence of events;
- evaluation forms;
- instructions to control personnel (chronology of specific messages and sequence of events);
- meeting schedule.

11.2. Document Colour Coding

The different types of documents have different functions and are aimed at different persons or agencies. To eliminate any confusion and avoid the risk of a participant receiving too much information by accidentally seeing documents for controllers, material is usually printed on different colours of paper and documents are usually designated by their colour.

Although the choice of colours is not standardized, the following codes are provided as a guideline:

Draft version

- general instructions and appendixes – WHITE
- meeting schedule – WHITE
- storyline – WHITE
- specific narrations – BLUE
- specific messages – PINK
- instructions to control personnel – GREEN
  - sequence of events;
  - chronology of specific messages;
  - evaluation forms.

The GREEN, PINK and BLUE documents are classified "EXERCISE - CONFIDENTIAL."

11.3. General Instructions (WHITE)

This is the reference document for the exercise. It contains everything that participants must know (type, theme, objectives, participants, safety guidelines, logistics, limits of the exercise….). It usually contains the following sections:

- Introduction (conventional exercise name, time frame, type of exercise, references, intended recipients…)
- Purpose and objectives
- Storyline
- Participants in the exercise (EPT, actors, co-ordinators, observers, video operators, dummy object)
- Conducting of the exercise (exercise perimeter, possible damage, visitors, identification signs / dress code, transportation, meal services, restrictions, aeronautical information, working language of exercise)
- Exercise conventions (specific provisions)
- Meetings (co-ordinators, observers, actors generating events / reacting to events, video operators)
- Instructions about protecting documents (exercise documents, secret documents)
- Communication methods specific to the exercise
- Safety rules
- Relations with the media
- Reports by parties involved and final report
- End of exercise
- Appendixes

See Annexe 2 for an example of general instructions for a SAR exercise.

11.4. Meeting Schedule (WHITE)

A schedule of the various meetings (WHITE) must be drawn up so that participants have sufficient advance notice of meeting times. The schedule should state the dates, locations, target audience, parties attending and documentation required.

Draft version

11.5. Storyline (WHITE)

Issued along with the general instructions, the storyline (WHITE) describes the situation that frames the exercise.

There are no special rules or principles for writing scenarios. However, it is strongly recommended that the names of real people or groups not be used, to avoid any confusion with real events.

It is also recommended that the exercise be given an explicit name, to distinguish it from any other activity or national exercise that could be held at the same time. For example, an exercise could be called SAREX, followed by an exercise week and year code: SAREX 50-05.

It is also important to define a code for the downed aircraft that will not create confusion. Note that in the event of a simulated collision between two aircraft, a second code must also be defined.

The EPT writes the storyline after it has established the purpose and goals of the exercise. The text must give participants enough information so that they can interpret exercise messages correctly and react appropriately.

It is important to ensure that the "white notes" do not give too much information to participants. The white notes will be distributed to all participants before the exercise starts. If they contain too much information, actors will be able to act in advance of the messages and push the pace of the exercise faster that the EPT intends.

See Annexe 3 for an example of a storyline.

11.6. Specific Narrations (BLUE)

Specific narrations are texts that contain information prepared by the EPT and are issued to certain actors at the start of the exercise, which they will disclose during the exercise, either when asked, or at a predefined time, or after a sequence of events that concerns them.

At the start of the exercise, each actor is given their specific narrations. The specific narrations are not included in the storyline.

See Annexe 4 for examples of specific narrations.

11.7. Specific Messages (PINK)

Specific messages are used to control the pace of the exercise by providing information as the exercise progresses. The content of specific messages is similar to that of specific narrations, except that they are not given out at the start of the exercise.

Specific messages generate actions. Thus, the actors to whom the messages are issued are event generators.

Draft version

Some of the messages are drafted during the preparatory phase and the EPT knows when they will be disclosed; others are not planned nor even foreseeable at the start of the exercise, and are written and distributed by co-ordinators during the exercise (e.g.: the RCC goes in the wrong direction based on information from a witness; a specific message to the mission control centre (MCC) can generate a message from the MCC to the RCC based on Cospas-Sarsat information that "redirects" the search).

The timing of the transmission of the messages must be planned in advance to ensure the smooth and regular unfolding of events. In general, the messages are issued one after another in order to make it easier to analyse reactions during the subsequent evaluation of the exercise.

However, the co-ordinators, with the agreement of or on the initiative of the exercise director, can alter the timing of the messages to intensify the stress and tension of key actors, particularly the SAR mission co-ordinator (SMC).

In most cases, the messages will be written information transmitted by co-ordinators. But they could also be radio or telephone messages. In all cases the messages must be preceded by the wording EXERCISE – EXERCISE – EXERCISE to prevent any confusion about it being a real event; there is always a possibility that a real event will occur while an exercise is being conducted.

When the messages are written and analysed, they are each assigned an ID number. The EPT prepares the messages following a standard format, which includes the following elements:

- Message number
- Date and time
- Recipient
- Mode of transmission
- The words EXERCISE – EXERCISE – EXERCISE at the start and end of the text
- Body of the message
- Possible notes from control personnel

See Annexe 4 for examples of specific messages.

11.8. Instructions for Control Personnel (GREEN)

Control personnel (co-ordinators and observers) must be given precise and detailed information in order to control and direct the exercise in close coordination with the exercise director. They must therefore have a complete set of all documentation for the exercise, including the confidential green documents reserved specifically for them (sequence of events, chronology of specific messages and evaluation forms).

11.8.1. Sequence of events (GREEN)

The sequence of events sets out the basic plan for the exercise and provides details on the various events, execution times and expected reaction of participants. It is an important green paper

Draft version

document that may only be read by control personnel (exercise director, co-ordinators and observers).

The sequence of events is presented in a slightly different format than the specific messages; the messages are briefly described with the expected events and their possible repercussions (cf. 11.8.2). Control personnel can thus determine whether participants are reacting as expected.

See Annexe 5 for an excerpt of a sequence of events.

11.8.2. Chronology of specific messages (GREEN)

When all the planned specific messages (PINK) have been prepared and approved, they are arranged in chronological order to form the chronological set (GREEN) of specific messages.

It is important to distinguish between the PINK specific messages, distributed to actors, from the GREEN chronological set of messages which may only be read by exercise control personnel (controllers and observers).

11.8.3. Evaluation forms (GREEN)

Evaluation forms, as detailed in section 13.4, are prepared by the EPT and distributed to observers. These forms are tools used by observers to determine if the objectives of the exercise are being met.

See Annexe 6 for an example of an evaluation form.

11.9. Distribution of Exercise Documents

Once the exercise documents are prepared and printed, they must be kept secure until the time for the exercise approaches. The general instructions and storyline (WHITE) are issued to all participants on the day of the general information meeting that precedes the exercise. The instructions for control personnel, as well as the sequence of events (GREEN), are issued to the appropriate participants at their final information meeting before the exercise begins.

It is always preferable to limit to the absolute minimum the number of people who are aware that the exercise will be held, to achieve a situation as close to real conditions as possible. However, administrative constraints sometimes require that authorities who will be involved in the exercise be notified several months in advance.

12. EMERGENCY PROCEDURES

It is always possible for a real incident to occur during an exercise. The exercise must then be interrupted (suspended or stopped completely) in accordance with a predetermined emergency procedure.

Draft version

The accident or incident information will be received at the RCC. Given the exercise, a controller and / or an observer will be positioned at the RCC and will immediately inform the exercise director who, based on the information received and in cooperation with the competent authorities, will decide whether to stop or suspend the exercise.

The following are examples of messages to stop or suspend the exercise:

EXERCISE – EXERCISE – EXERCISE
FINEX SAREX 50-05
REAL ACCIDENT.

EXERCISE – EXERCISE – EXERCISE
TEMPORARY SUSPENSION OF SAREX 50-05 EXERCISE
REMAIN IN POSITION AND AWAIT FURTHER INSTRUCTIONS.

Draft version

13. EXERCISE EVALUATION (STEPS 11, 12)

13.1. Principle

Evaluation is an integral part of any exercise and the EPT must take it into account when choosing the site and drafting the scenario.

The purpose and objectives of the exercise should be prepared keeping the evaluation phase in mind. The objectives are usually "observable actions" that can be reported on by observers.

When the EPT prepares the exercise documents, it must also prepare observers' evaluation forms, to standardize the evaluation process. There is a standard method for preparing evaluation forms.

The quality of the valuation is largely dependent on having competent and well-informed evaluators.

13.2. Exercise Evaluation Process

The evaluation process is divided into three stages:

- ***Before the exercise***
  - Select the evaluation team (observers)
  - Establish the evaluation methodology
  - Inform and assign tasks to evaluation team (observers)

- ***During the exercise***
  - Observe the actions of participants
  - Record activities in registers and documents
  - Analyse the actions of participants

- ***After the exercise***
  - Hold a meeting of control personnel
  - Compile reports
  - Conduct preliminary analysis of the exercise (objectives met?)
  - Hold other evaluation meetings
  - Conduct final analysis of the exercise
  - Plan corrective actions
  - Determine the real cost of the exercise

The committee that prepares the evaluation report is supervised by the exercise director. The exercise director can therefore carry out all the tasks related to the evaluation. Depending on the exercise, the observations can be complied by a chief observer for analysis and summary.

13.3. Evaluation Actors

13.3.1. Exercise Director

The exercise director is responsible for:

- ***Before the exercise***

Draft version

- Finalizing the evaluation methodology
- Selecting observers
- Informing observers and assigning them their tasks

- ***During the exercise***, making sure that observers:
  - Are deployed to the designated locations
  - Have the appropriate documents and equipments
  - Observe and record the actions of participants, without intervening in or disturbing the conduct of the operations
  - If necessary, are supported by additional observers.

- ***After the exercise***:
  - Ensuring that control personnel evaluate the achievement of objectives
  - Co-ordinating the participation of observers at evaluation meetings
  - Co-ordinating and reviewing reports from control personnel
  - Compiling all reports and accounts in order to prepare the final report on the exercise

13.3.2. Observers

The evaluation process is based primarily on the work of the observers. It is essential that they be properly aware and informed, and that their actions be purposefully oriented. To achieve this, the following issues are addressed at the observer information meetings:

- Precautions for minimizing observer errors and influence
- Safety rules
- Familiarization with the forms
- Non-interference

The main function of the observer is to complete the evaluation form. However, the observer can also add comments and other items that clarify the smooth or dysfunctional response of the system.

13.4. Evaluation Forms

13.4.1. Purpose of the evaluation forms

Evaluation forms play a key role in the quality of the evaluation. The purpose of the forms is to:

- Guide observers during the information-gathering process
- Help observers gather specific information in an organized manner
- Provide written data for efficient analysis and evaluation

The evaluation forms are use to evaluate objectives; they are designed to closely reflect the objectives of the exercise. This means that when the EPT sets those objectives, it must also take the evaluation process into account.

Draft version

The forms cannot, however, compensate for lack of observer skill or information, nor do they eliminate the need for information meetings. The success of an evaluation is basically dependent on the level of observer skills and information.

13.4.2. Evaluation form content

The form must provide certain information, including the following:

- Observer identification
- Observation location
- Observation time frame
- An assessment framework that shows, for each event (from the sequence of events), the time and nature of the event, the expected action, the action observed and the time it took
- A blank box where the observer can write observations / comments / suggestions.

See Annexe 6 for an example of an evaluation form.

13.5. Meetings

In the post-exercise phase, the information gathered by observers is analysed and the evaluation meetings are held. This information will be used to prepare the final report.

It is recommend that three evaluation meetings be held:

- Immediate meeting
- Mid-evaluation meeting
- Final meeting

13.5.1. Immediate meeting

By holding a meeting right after the exercise with all participants (EPT, co-ordinators, actors and others), information can be obtained while it is still fresh in the memory of actors and control personnel. This is not a meeting where observers present their specific observations on the achievement of the exercise objectives or areas that could be improved. It is intended to give actors an opportunity to describe their perceptions of the exercise and their personal sense of how things went. The exercise preparation team notes the comments, which could provide supplementary information for their own reports.

The immediate meeting is organized as scheduled and held in a location selected during the preparatory phase and identified in the general instructions. The meeting can be taped so that no information is lost or omitted.

13.5.2. Mid-evaluation meeting(s)

Draft version

A mid-evaluation meeting should be organized, as scheduled, shortly after the exercise. It includes the EPT, co-ordinators and observers, who present their observations. The purpose of this meeting is to identify the extent to which the objectives of the exercise were met.

Note: At the discretion of the Exercise Director, other persons may be invited to attend the mid-evaluation meeting.

In addition, other participants usually organize debriefing meetings within their departments and the reports from these meetings are sent to the exercise director before the final meeting.

13.5.3. Final meeting

The exercise director uses the reports received to organise a formal debriefing session with all participants, in which all of the objectives of the exercise are analysed in depth.

The sequence of events is used to review the highlights of the exercise and the reasons for success or failure. The exercise director also reviews the conclusions of the evaluation team (observers), based on their reports. The proceedings are taped to assist the exercise director in writing the final report on the exercise.

Draft version

14. POST-EXERCISE ACTIVITIES

14.1. Final Report on the Exercise (Step 12)

The final report on the exercise analyses the extent to which each objective was achieved.

It identifies the strengths and weaknesses revealed by the exercise and contains recommendations to improve the operational procedures of the various actors in the SAR system as well as the National SAR plan.

It can also be used to improve the organisation of future exercises and the evaluation method.

See Annexe 7 for an example of a plan for a final exercise report.

The recommendations in the final report can be used by the national SAR co-ordinator to suggest a plan for corrective action to the SAR Co-ordinating Committee.

14.2. Action Plan to Correct Deficiencies (Step 13)

This plan contains the following elements:

- Findings (strengths, weaknesses)
- Proposed corrective measures
- Time lines
- Authorities responsible for implementation

Draft version

15. APPENDIXES

Annexe 1. Excerpt from Annex 12, Section 4.4 ____ 35
Annexe 2. Example of General Instructions ____ 36
Annexe 3. Examples of Storylines ____ 43
Annexe 4. Examples of Narrations / Specific Messages ____ 44
Annexe 5. Example of Excerpts from Sequence of Events ____ 45
Annexe 6. Example of Evaluation Forms ____ 46
Annexe 7. Example of Plan for Final Report on Exercise ____ 48

Draft version

Annexe 1. EXCERPT FROM ANNEX 12, SECTION 4.4

4.4 Training and exercises

To achieve and maintain efficiency in search and rescue, Contracting States shall provide for regular training of their search and rescue personnel and arrange appropriate search and rescue exercises.

Draft version

Annexe 2. EXAMPLE OF GENERAL INSTRUCTIONS
(WHITE Document)

Conventional name : SAREX 50-05

Period : from “dd/mm/yyyy” to “dd/mm/yyyy” (week in which exercise takes place)

Type of exercise : “Communication,” “Co-ordination” or “Full-Scale”

Reference : In accordance with planning for a SAR annual or bi-annual exercise

RECIPIENTS

- Local administration (prefecture, province, governorat / governance…)
- National SAR Office
- Participating departments
- Air traffic control agencies
- Participating SAR units, as applicable
- Associated COSPAS-SARSAT MCC
- RCC archives

N.B.: All times are expressed in coordinated universal time (UTC)

GENERAL

The SAREX 50-05 search and rescue exercise is scheduled for the period from “dd/mm/yyyy” to “dd/mm/yyyy” [usually a week] in the RRR department / area.

It will implement the alert – search – rescue chain in accordance with the conditions defined by the RCC and the RRR local administration.

The procedures applied will be those defined in the following documents:

- National SAR manual

Draft version

- Interministerial text on air-land rescue plan
- Departmental / regional air-land rescue plan

[See relevant national documents]

PURPOSE AND OBJECTIVES

The purpose of the SAREX 50-05 exercise is

- **To verify** the provisions of the air-land rescue plan in effect and to modify it as necessary
- **To train** participants, local administration services, air resources and the rescue co-ordination centre (RCC), in the execution of a search and rescue operation following an air accident
- **To assess** the transmission, as promptly as possible, to the RCC assuming responsibility, of all information collected in the field, so that the RCC can implement the most appropriate measures
- **To test** procedures and means of transmission

The exercise scenario will involve:

- Declaration of emergency phases
- Gradual implementation of SATER
- Implementation of an air-land search system
- Application of a rescue phase

STORYLINE

A light civil aircraft disappears while flying over the RRR region.

Note: Other examples of storylines are provided in Annexe 3.

PARTICIPANTS

Exercise Preparation Team (EPT)
Exercise director, [SAR office / civil aviation (if different from SAR office),
RCC head, operators – to be completed / specified as appropriate].

Operational Actors
RCC
RRR local administration
Public Safety
Health
RRR law enforcement services
Defence (land, air and /or maritime resources),
Air traffic control agencies

Draft version

Associated COSPAS-SARSAT MCC
Ham radio associations

Other Actors
Extras
Witnesses…

Co-ordinators
[List of co-ordinators and their respective positions – example: RCC field co-ordinator, at site of accident]

Observers
[List of observers and their respective positions – example: observers positioned at RCC or at rescue command post]

Video Operators
[List of video operators and their respective positions]

Dummy Object
[Examples: the wreckage will be simulated by a white streamer, with the code for the downed aircraft in black letters (X-XXSAR), and a tricolour parachute symbolising the plane.

A 406 MHz radio distress beacon (identification: XXXX, help XXX), also emitting on the 121.500 and 243.000 MHz frequencies, will be set up by RCC personnel and considered that of the downed aircraft]

CONDUCTING OF THE EXERCISE

Exercise perimeter

Land searches: The entire RRR region when the emergency is declared.

Air searches:

Vertical limits	:	surface / 2000 FT surface.
Horizontal limits	:	see NOTAM **NN50-05.**

The air crews will respect the rules of the air, particularly those for controlled air space.

Possible damage
Repairing damage that occurs during an exercise is, unless otherwise stipulated, normally assumed by the author of the damage, the administration the author belongs to or its insurance.

Visitors
To date, the following persons have indicated they plan to attend the exercise as visitors:
Person 1

Draft version

Person 2 …

Visitor accompaniment will be co-ordinated by Ms / Mr X.

Identification signs / Dress code
The following identification signs will be used [for example]:

- Exercise director and control team: CCC colour armbands
- Extras: each extra will bear a photo and a description for the use of the search and rescue teams and / or may wear a badge / armband issued by the EPT, as applicable
- Visitors: each visitor will wear a badge / armband issued by the EPT
- Video operators: each video operator will wear a badge / armband issued by the EPT
- Logistical support personnel: logistical support personnel (drivers, cooks, hosts…) will be identified by a badge / armband issued by the EPT.

Transportation
Provide concrete details about transportation services (locations, schedules, routes, co-ordinator).

Meal services (if required)
Provide concrete details about meal services (locations, schedules, co-ordinator).

Aeronautical restrictions / information
NOTAM **NN50-05** was issued on "dd/mm/yyyy" along with the "XXX" flight restriction message issued on "dd/mm/yyyy" by the RRR local administration.

Working language of exercise
The working language of the exercise administration is "XXX." The operational actors will use their usual working language.

Note: If the working language of some operational actors is different from the working language of the exercise administration, any communication problems related to the use of different working languages will be specifically and thoroughly evaluated in relation to the exercise.

Other instructions (examples)
Land searches: instructions regarding the maps / types of coordinates used.

Air searches: the search areas will be defined by characteristic geographic features and eventually a preferred entry point.

The pilots will announce the "dummy object discovered," and send its coordinates to the RCC on the appropriate frequency. The landing and winching are left to the discretion of the pilots, who will be aided by smoke markers activated by exercise control personnel.

A stationary aircraft may be requested to mark the position.

Draft version

EXERCISE CONVENTIONS

Example 1: The distress beacon will be stopped after the arrival of the last audit team or air search resource, and in the event of a real operation, by exercise personnel in the field.

Example 2: Search areas will be located only in the RRR government region.

Example 3: There will be no evacuation of the injured from the field medical post to hospitals.

MEETINGS

The preparatory meeting for the exercise will be held on "dd/mm/yyyy." The hot debriefing meeting will be held in the offices of "XXX" immediately after the exercise terminates.

The final meeting will be held in the offices of "XXX" on "dd/mm/yyyy."

INSTRUCTIONS ON DOCUMENT PROTECTION

Documentation for the SAREX 50-05 exercise includes the following:

- General instructions – WHITE
- Storyline – WHITE
- Specific narrations – BLUE
- Specific messages – PINK
- Instructions to control personnel – GREEN

Documents on green paper are classified "Exercise – Confidential" and are only distributed to exercise control personnel (exercise director, observers and co-ordinators).

Documents on pink and blue paper are classified "Exercise – Confidential" and are only distributed to exercise control personnel (exercise director, observers and co-ordinators) and the actors concerned.

Documents on white paper can be read by all exercise participants.

Exercise reports are forwarded to the exercise director. Conditions for the distribution of these reports are set at the discretion of each author.

SPECIFIC MEANS OF COMMUNICATION USED IN THE EXERCISE

Telegraphic links

The usual operational links will be used.

Draft version

Operational messages transmitted by telegraph will include the words, at the beginning and end of the message:

EXERCISE – EXERCISE – EXERCISE – SAREX 50-05

Radio links

Primary frequency : [for example 123.100 MHz]
Secondary frequency : [for example 119.700 MHz]

Radio call signs for air and ground resources [examples]

[BALAFON SAR : RCC "Town X"]
[KILIMANDJARO SAR : DUMMY OBJECT]
[ICARE SAR : FENNEC "XXX"]

The other aircraft involved will use the term RESCUE followed by the last two letters of their international indicator.

A specific directory for the exercise is appended to this document.

SAFETY RULES

The following safety measures will be taken before and during the exercise:

- Issuance by the "XX" aeronautical information bureau of NOTAM NN50-05 regarding the air search area
- Spacing of aircraft by search area (horizontally or vertically) established by RCC
- Exclusive use of the primary frequency (for example 123.100 MHz)
- Eventual use of a radio relay if contact is lost between air resources and RCC

In addition, crews will:

- Follow their usual procedures
- Respect the rules of the air
- Maintain VMC conditions for the search area
- Assure their auto information is on the primary frequency (for example 123.100 MHz).

During the exercise, each participants will pay attention to their own personal safety and the safety of other participants.

MEDIA RELATIONS

A media room will be open from "hh/mm" to "hh/mm" from "dd/mm/yyyy" to "dd/mm/yyyy" in the offices of "XX" and under the responsibility of "Mr / Ms XX,", who will handle all contact with the media regarding the organisation and conduct of the exercise.

Note: The media room is separate from the structures that the SAR system must set up during a real SAR operation to deal with media pressure, and may also be evaluated during the exercise.

Draft version

REPORTS FROM PARTIES INVOLVED AND FINAL REPORT

In accordance with the national SAR manual, each participant will submit a report to the RCC within "n" days of the exercise termination. The RCC will forward these reports to the exercise director within "n" days of the exercise.

Participants' reports shall state the number of persons and resources engaged, along with comments and lessons learned.

END OF EXERCISE

In conjunction with the local administration, the exercise director will decide when the SAR exercise has ended. The RCC will send the following message to all participants:

FINEX – FINEX – FINEX – EXERCISE SAREX 50-05

APPENDIXES

Example: TELEPHONE DIRECTORY

XXX RCC - Tel: XXX, Fax XXX …

"RRR" local administration command post – Tel XXX…

Draft version

Annexe 3. EXAMPLES OF STORYLINES

Example 1:

EXERCISE – EXERCISE – EXERCISE SAREX 50-05

A medium-size aircraft is flying under VFR with a flight plan from “town1” to “town2.” It has not filed an arrival report to close its flight plan.

Example 2:

EXERCISE – EXERCISE – EXERCISE SAREX 50-05

Flight “VV WW” took off under IFR from “town1” heading for “town2.” Just after takeoff it contacted air traffic control on “FFF” MHz. It was climbing toward flight level “FL”. No contact has been established since then. It was supposed to contact “town3” regional control centre on “FFF’” MHz when it flew over the VOR “VVV” – start exercise.

Example 3:

EXERCISE – EXERCISE – EXERCISE SAREX 50-05

The control tower at “town1” receives a message from flight VV – SAR about a serious problem. The pilot mentions the loss of part of a wing and engine vibration. He says he’ll try to make a forced landing in a field in …… (inaudible). End of radio transmission – start exercise.

Example 4:

EXERCISE – EXERCISE – EXERCISE SAREX 50-05

RCC receives a Cospas-Sarsat message with unconfirmed position– start exercise.

Example 5:

EXERCISE – EXERCISE – EXERCISE SAREX 50-05

A witness calls the police to say he has been waiting for an hour for a client who was supposed to arrive by plane at the “town1” aerodrome – start exercise.

Draft version

Annexe 4. EXAMPLES OF NARRATIONS / SPECIFIC MESSAGES

1. Report from a controlling agency that had contact with the craft in order to narrow down field of investigations

"The VV – SAR you're looking for contacted us at hh:mm to cross our area. It closed out of the area at hh:mm + 8 minutes. He was headed to "town1". It estimated beacon "BBB" at hh:mm + t"
Upon request only, add:
"IFF: 3/A flight level "FL" last position "PPP""

2. Report from an aerodrome member indicating a change in initial elements

"This morning I saw VV – SAR getting ready to leave, he was waiting for Mr. X, who didn't fly with him." "The pilot was worried; the plane had just come out of maintenance the day before. After taking off, he came back and landed again and raised the hood, did something inside and then took off again. I filled up the gas tank on the plane but its endurance was only about t".

3. Police report from eyewitness

(Don't provide name or phone number, to test the reactions of the person who takes the call)
"At hh:mm I saw a plane that seemed to be having engine trouble and that was flying very low between "town1" and "town2"."
"I was on a boat in the lake at "town3" when a plane with a flames coming from the engine flew over us. It disappeared over the horizon, and then we heard an explosion. We didn't have a cell phone with us so we were only able to contact you now."

4. Cell phone contact with a passenger on a plane

(can't be contacted to test information and transmission of information)
"We just crashed into a forest. I'm trapped in the plane and the people in front are no longer responding ……I don't know where we are but about two minutes ago we flew over a large body of water ……; my battery is running out; come quick…." end of communication.

5. Initial elements (PLN, departure message, MTO)

Available upon request at the start of the exercise because they are normally held by control services, but communicated at the request of the parties concerned; they will generate reactions but are not given to all participants at the start of the exercise.

6. Radio transcripts

Available at the control centre level at the start of the exercise (specific narration) or at a time chosen by the control team (specific message), a transcript of air / ground communications on the control frequency will be communicated to the RCC upon request, after a certain technical delay.

7. Radar trajectory transcriptions

Available at the control centre level (civil or military) at the start of the exercise (specific narration) or at a time chosen by the control team (specific message), the radar plots for the downed aircraft will be communicated to the RCC upon request, after a certain technical delay.

Draft version

Annexe 5. EXAMPLE OF EXCERPTS FROM SEQUENCE OF EVENTS

"H". Activation INCERFA phase

Time	Event	Actor	Expected Actions
H	Activate INCERFA phase	Controlling agency 1	Contact from the RCC, activation of INCERFA phase
H1	Receive message INCERFA phase activated	RCC	Collect initial information, especially from controlling agencies [depends on specific procedures]
H1		RCC	Notify COSPAS-SARSAT
H2	Request information received by RCC	Controlling agency 1	Ask for info from other controlling agencies
		Controlling agency 1	Ask aerodromes about route
		Controlling agency 1	Ask aerodrome(s) about diversions
		Controlling agency 1	Transmit initial elements to RCC (PLN….)

.
.
.

"Hn". Activate DETRESFA phase

Time	Event	Actor	Expected Actions
Hn	Activate DETRESFA phase	RCC	Assign search areas to SAR units
			Brief SAR units
			Send scramble order
			Activate CP local administration
Hn+1	RCC receives scramble order	SAR air units	Scramble
Hn+2	RCC receives activation request	CP local administration	Activate ground units
Hn+3	CP local administration receives activation request	Ground units	Deployment

Draft version

Annexe 6. EXAMPLE OF EVALUATION FORMS

(One sheet per agency controlled)

Date: dd/mm/yyyy **Name of exercise**: SAREX 50-05

Observer's name: Mr / Ms X **Location of observation:** RCC town1

Expected Time of Event	Event	Actor	Expected Reactions	Real Time (amount of time)	Observed Reactions	Observations / Comments / Suggestions
H1	Activate INCERFA phase	SMC 1	Collect initial information, particularly from control agencies [depend on specific procedures]	H1 + Δt	Call controlling agency 1 to request info from aerodromes 1, 2 and 3	
H1		SMC 1	Notify COSPAS-SARSAT	H1 + Δt'	Send message to MCC town2	Time it took operator to respond considered too long
. . .						
Hn	Activate DETRESFA phase	SMC 1	Assign search areas to SAR units	Hn + Δt	Call local administration CP	Lost time looking for new phone number of contact person / update directory

Draft version

Expected Time of Event	Event	Actor	Expected Reactions	Real Time (amount of time)	Observed Reactions	Observations / Comments / Suggestions
Hn		SMC 1	Assign search areas to SAR units	Hn + Δt'	Call air base town4	
Hn		SMC 1	Brief SAR units	Hn + Δt1	Call air base town4	Forgot to transmit info about colour of downed craft
Hn		SMC 1	Send scramble order	Hn + Δt2	Call air base town4	
Hn		SMC 1	Activate local administration CP	Hn + Δt3	Call local administration CP	Lost time because contact was unfamiliar with SAR procedures

Draft version

Annexe 7. EXAMPLE OF PLAN FOR FINAL REPORT ON EXERCISE

1 CONDUCTING OF THE EXERCISE

1.1 Alert
1.1.1 Origin of alert
1.1.2 Agencies alerted

1.2 Information Gathering
1.2.1 Initial information
1.2.2 First investigations

1.3 Searches
1.3.1 SAR agency assuming responsibility
1.3.2 Associated agencies
1.3.3 Establishment of search plan
Limits of search area
Type of search (land, air, sea)
1.3.4 Brief description of searches
Time searches started (land, air, sea)
Weather in the area
1.3.5 Locating of object
Position
Time
Mode of location
1.3.6 Stop search
Date and time
Reason

1.4 Rescue
1.4.1 Agency delegated to rescue
1.4.2 Resources used
1.4.3 Steps taken to guide rescue teams at the site
1.4.4 Steps taken to evacuate, identify victims and inform competent authorities
1.4.5 Steps take to evacuate the injured
1.4.6 Nature of site
1.4.7 Condition of wreckage
1.4.8 Date and time rescue ended

2 ASSESSMENT OF EXERCISE

2.1 Application of procedures
Alert phase
Research phase
Rescue and evacuation phase
2.2 Overall co-ordination
2.3 Transmissions
2.4 Comments and suggestions

Draft version

3 APPENDIXES

APPENDIX A
STATISTICAL INFORMATION

1 Mode of location
- visual contact:
  - immediate location
  - by aircraft
  - by ground team
  - by ship
- radar contact:
  - by aircraft
  - by building
- radio contact
- reception of distress beacon signal
  - by COSPAS-SARSAT
  - by aircraft
  - by ground team
  - by building

2 Air resources engaged
- Number of missions
- Aircraft used (identification, flight time: transit, searches, rescues)

3 Maritime resources engaged

4 Ground forces engaged
- Number of persons involved
- Number of vehicles involved
- Number of hours of operation
- Number of hours of walking per person

5 Time elapsed between activation of the alert and
- departure of first search resources
- discovery of the dummy object

6 Total number of persons involved

Draft version

APPENDIX B

SAREX 50-05 EXERCISE CHRONOLOGY
(All times UTC)

APPENDIX C

BEACON USAGE INFORMATION

Builder
Frequencies
Model
SARSAT certification number
Serial No.
Identification

Draft version