



**GOVERNMENT OF THE PEOPLE'S REPUBLIC OF
BANGLADESH**



Search and Rescue (SAR) Manual

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Preamble

This Manual is issued by the Chairman, Civil Aviation Authority, Bangladesh (CAAB) in pursuance of the power vested on him under the Civil Aviation Authority, Bangladesh Rule 4 (Ref: CAR-84) and ANO (SAR) A-1, Chapter 4, Para 4.2.1.

The purpose of this Manual is to provide specifications/requirements for the establishment and operation of Search and Rescue (SAR) services and allied matters in the territory of The People's Republic of Bangladesh and over the high seas where provision of SAR services is the responsibility of Bangladesh in accordance with the regional Air Navigation Agreements.

Scope

The Standards and Recommended Practices contained in this Manual are in line with requirements of Annex 12 to ICAO Convention and Doc 9731, IAMSAR Manual Vol I, II & III shall be applicable to all authorities, service providers and agencies responsible for the provision of SAR services to aircraft.

Objectives

To describe guidelines for Search and Rescue incidents, that will:

- Give the appropriate high priority to the protection of human life;
- Locate, provide necessary care, including emergency medical care, and evacuate persons in distress:
 - using the most effective methods;
 - with the least elapsed time;
 - in the safest and most economical way; and
 - with the least impact on the resources and on the normal, day to day operations of Bangladesh.



FOREWORD

The prompt provision of Search and Rescue (SAR) Services is paramount to the assistance rendered to persons in distress and the term SAR refers to a process of searching for and providing rescue service to persons who are or are believed to be in imminent danger of losing their lives or limb. The SAR function is a State's responsibility with respect to obligations that Bangladesh has accepted under Article-25 of the Convention of International Civil Aviation. This Manual has been issued by Civil Aviation Authority Bangladesh under Rule 4, (Ref: CAR-84) to give effect to the Standard and Recommended Practices to be met by the provider or coordinator of SAR services within Bangladesh Search and Rescue Region (SRR) to meet SAR obligations of Contracting States to the Convention. The Standard and Recommended Practices in this Manual are based on those stipulated in Annex-12 to the Convention and other relevant ICAO documents and with such modifications as may be determined by CAAB to be applicable in Bangladesh.

I wish to thank all involved in developing this Manual, which was a long felt need of Search and Rescue Officers and staff of ATS and Aerodromes Division of CAAB.

This Document is issued and amended under the authority of the Chairman of Civil Aviation Authority, Bangladesh. Amendments to this Manual are the responsibility of the Director ATS & Aerodromes. Readers should forward advice of errors, inconsistencies or suggestions for improvement to this Manual to the addressee stipulated below.

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III

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Approved





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Amendments to this “SAR MANUAL” FOR AIR TRAFFIC SERVICES (ATS) in Bangladesh are issued by Chairman of Civil Aviation Authority, Bangladesh.

Amendment Records

The amendments listed below have been incorporated into this copy of the SAR Manual.

Amendment no	Version no	Subject	Source	Sections affected	Entered by(date)	Approved by(date)	Effective date
1.							
2.							
3.							
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INTENTIONALLY KEPT VACANT



Definitions

Alerting post

Any facility intended to serve as an intermediary between a person reporting an emergency and a rescue coordination centre or rescue subcentre.

(ALERFA) Alert phase

A situation wherein apprehension exists as to the safety of an aircraft and its occupants.

Crew member

A person assigned by an operator to duty on an aircraft during flight time.

COSPAS-SARSAT System

A satellite system designed to detect distress beacons transmitting on frequencies 121.5 MHz and 406 MHz.

(DETRESSFA) Distress phase

A situation wherein there is a reasonable certainty that an aircraft and its occupants are threatened by grave and imminent danger and require immediate assistance.

Ditching

The forced landing of an aircraft on water.

(ELT) Emergency locator Transmitter

Aeronautical radio distress beacon for alerting and transmitting homing signals.

Emergency phase

A generic term meaning, as the case may be, uncertainty phase, alert phase or distress phase.

False Alert

Distress Alert received from any source, including communications equipment intended for alerting, when no distress situation actually exists, and a notification of distress should not have resulted.

(GADSS) Global Maritime Distress and Safety System

A global communication systems, both satellite-based and terrestrial, to provide distress alerting and promulgation of maritime safety information for mariners.

(GPS) Global Positioning System

A specific satellite-based system used in conjunction with mobile equipment to determine the precise position of the mobile equipment.

(JRCC) Joint rescue coordination centre

A rescue coordination centre responsible for both aeronautical and maritime search and rescue operations.

(LUT) Local User Terminal

An earth receiving station that receives beacon signals relayed by Cospas-Sarsat satellites processes them to determine the location of the beacons and forwards the signals.

(MCC) Mission Control Centre

Part of the Cospas-Sarsat system that accepts alert messages from the local user terminal(s) and other mission control centres to distribute to the appropriate rescue co-ordination centres or other search and rescue points of contact.



Spoken International distress signal, repeated three times.

Operator

A person, organization or enterprise engaged in or offering to engage in an aircraft operation.

(OSC) On-Scene Coordinator

A person temporarily designated to coordinate Search and Rescue operation within a specified area.

Pan Pan

The International radio telephony urgency signal, when repeated three times, includes uncertainty or alert, followed by urgency.

(P-in-C) Pilot-in-command

The pilot designated by the operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight.

Rescue

An operation to retrieve persons in distress, provide for their initial medical or other needs, and deliver them to a place of safety.

(RCC) Rescue coordination centre

A unit responsible for promoting efficient organization of search and rescue services and for coordinating the conduct of search and rescue operations within a search and rescue region.

(RSC) Rescue sub centre

A unit subordinate to a rescue coordination centre, established to complement the latter according to particular provisions of the responsible authorities.

Rescue action plan.

A plan for rescue operations normally prepared Search mission coordinator (SMC) for implementation by the on-Scene coordinator (OSC) and facilities on-Scene.

(RU) Rescue Unit

A unit composed of trained personnel and provided with equipment suitable for the expeditious conduct of Search and Rescue.

Search

An operation normally coordinated by a rescue coordination centre or rescue sub centre using available personnel and facilities to locate persons in distress.

Search and Rescue (SAR) aircraft

An aircraft provided with specialized equipment suitable for the efficient conduct of search and rescue missions.

(SC) SAR Co-ordinator

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

SAR facility

Any mobile resource, including designated search and rescue units, used to conduct search and rescue operations.

SAR organization

The provider of search and rescue services within the search and rescue region.

**SAR service**

The performance of distress monitoring, communication, coordination and search and rescue functions, initial medical assistance or medical evacuation, through the use of public and private resources, including cooperating aircraft, vessels and other craft and installations.

(SRR) Search and rescue region

An area of defined dimensions, associated with a rescue coordination centre, within which search and rescue services are provided.

SAR Unit

A mobile resource composed of trained personnel and provided with equipment suitable for the expeditious conduct of search and rescue operations.

(SMC) SAR Mission coordinator

An officer temporarily designated by the RCC chief to conduct and supervise a Search and Rescue.

Search action plan

Message normally developed by the SMC, for passing instructions to SAR facilities and agencies participating in a SAR mission.

SAR Area

An area in which the coordination of Search and Rescue is integrated by a single rescue coordination centre.

SAR Aircraft

An aircraft provided with specialized equipment suitable for the efficient conduct of SAR mission.

State of Registry

The State on whose register the aircraft is entered.

Uncertainty phase

A situation wherein uncertainty exists as to the safety of an aircraft and its occupants.



Abbreviations

AIP	Aeronautical Information Publication
AIS	Aeronautical Information Services
ATC	Air Traffic Control
ATS	Air Traffic Services
ARCC	Aeronautical Rescue Coordination Centre
COSPAS	Cosmicheskeya sistema poiska avariynich sudop (Space System for Search of Vessels in Distress)
ELT	Emergency Locator Transmitter
FIR	Flight Information Region
IMO	International Maritime Organisation
IAMSAR	International Aeronautical and Maritime Search and Rescue
ICAO	International Civil Aviation Organisation
JRC	Joint Rescue Coordination Centre
LUT	Local User Terminal
MRCC	Maritime Rescue Co-ordination Centre
MOS	Manual of Standards
MCC	Mission Control Centre
OSC	On-scene co-ordinator
RCC	Rescue Coordination Centre
RSC	Rescue Sub Centre
RU	Rescue Unit
SAR	Search and Rescue
SARSAT	Search and Rescue Satellite-Aided Tracking
SC	SAR Co-ordinator
SRR	Search and Rescue Region
SITREP	Situation Report
SMC	SAR Mission Co-ordinator
SPOC	Search and Rescue point of contact
SRU	Search and Rescue Unit

**Distribution List**

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2. Member (Operations & Planning), Civil Aviation Authority, Bangladesh. Headquarters, Kurmitola, Dhaka-1229.	8901405 8901904-13/3370 Mob: 01913503809, 01708167002 E-mail: mopscaab@bracnet.net mops@caab.gov.bd	9113963
3. Director (FSR), CAAB, HQ, Dhaka.	8901406 Extn-8901904-13/3375 E-mail: dfscaab@bracnet.net	
4. Director ATS/Aero. CAAB, HQ. Dhaka.	8901404 Extn-8901904-13/3369 Mob: 01708167012 E-mail: datsaero@caab.gov.bd	8958988
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6. Director Hazrat Shahjalal International Airport (HSIA), Dhaka.	8901449 Extn-8901904-13/3377 E-mail: 01708167090 E-mail: dhsia@caab.gov.bd	
7. Director, CATC, Kurmitola, Dhaka.	8901047 Extn-8901904-13/3386 Mob: 01708167228 E-mail: dcac@caab.gov.bd	
8. Deputy Director Hazrat Shahjalal International Airport, Kurmitola, Dhaka.	8901451 Mob: 01708167094 E-mail: ddhaia@caab.gov.bd	
9. Station Air Traffic Officer (SATO) Hazrat Shahjalal International Airport, Dhaka.	8901460 Extn- 8901904-13/3412, Mob: 01708167096 satohsia@caab.gov.bd	
10. Area Control Centre (ACC),HSIA.	8901462,8901463 8901904-13/3465, 3410	
11. Rescue Coordination Centre (RCC), HSIA.	8901464, 8901904-13/3589	



12. Control Tower, HSIA.	7914462, 8901904-13/3513	
13. Airport Manager, Shah Amanat International Airport, Chittagong.	APM : 031-2500900, Mob: 01708167272 E-mail: apmctg@caab.gov.bd	031-2500900
14. Airport Manager, Osmani International Airport, Sylhet	APM; 0821-714243 Mob: 01708167286 E-mail: apmaylhet@caab.gov.bd	0821-714243
15. Airport Manager, Cox's Bazar Airport, Cox's Bazar.	0341-52353 Mob: 01708167294 E-mail: apmcox@caab.gov.bd	0341-64075
16. Airport Manager, Jessore Airport, Jessore.	0421-64033 APM: 01708167298 E-mail: apmjessore@caab.gov.bd	0421-64033
17. Airport Manager, Saidpur Airport, Saidpur.	05526-72384 Mob: 01708167307 E-mail: apmsaidpur@caab.gov.bd	05526-72384
18. Airport Manager, Barisal Airport, Barisal.	04327-73362 Mob: 01708167315 E-mail: apmbarisal@caab.gov.bd	04327-73362
19. Airport Manager, Shah Makhdum Airport, Rajshahi.	0721-800153 Mob: 01708167303 E-mail: apmrajshahi@caab.gov.bd	0721-800153
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Chapter-1

1. Introduction

1.1 General

1.1.1 Search and Rescue (SAR) comprises the search for and provision of aid to persons who are, or are believed to be in imminent danger of loss of life. The two operations – Search and Rescue – may take many forms, depending on whether they are both required or not, on the size and complexity of the operation and on the available staff and facilities.

1.1.2 This SAR Manual provides Standards and requirements for the establishment, maintenance and operation of SAR services within Bangladesh Search and Rescue Region (SRR). The primary purpose of the SAR is to ensure that the SAR organization meets the SAR needs and obligations under the Convention on International Civil Aviation.

1.1.3 The SAR organization should develop and improve its SAR services, co-operate with neighboring States and to consider the SAR services to be part of a global system.

1.2 SAR Manual

1.2.1 This Manual should be read in conjunction with:

- a) ICAO Annex 12 – Search and Rescue
- b) ICAO Annex 13 – Aircraft Accident and Incident Investigation
- c) ICAO Annex 6
- d) ICAO Annex 10
- e) ICAO Annex 11
- f) ICAO Annex 14
- g) IAMSAR Manuals Vol. i, ii, & iii

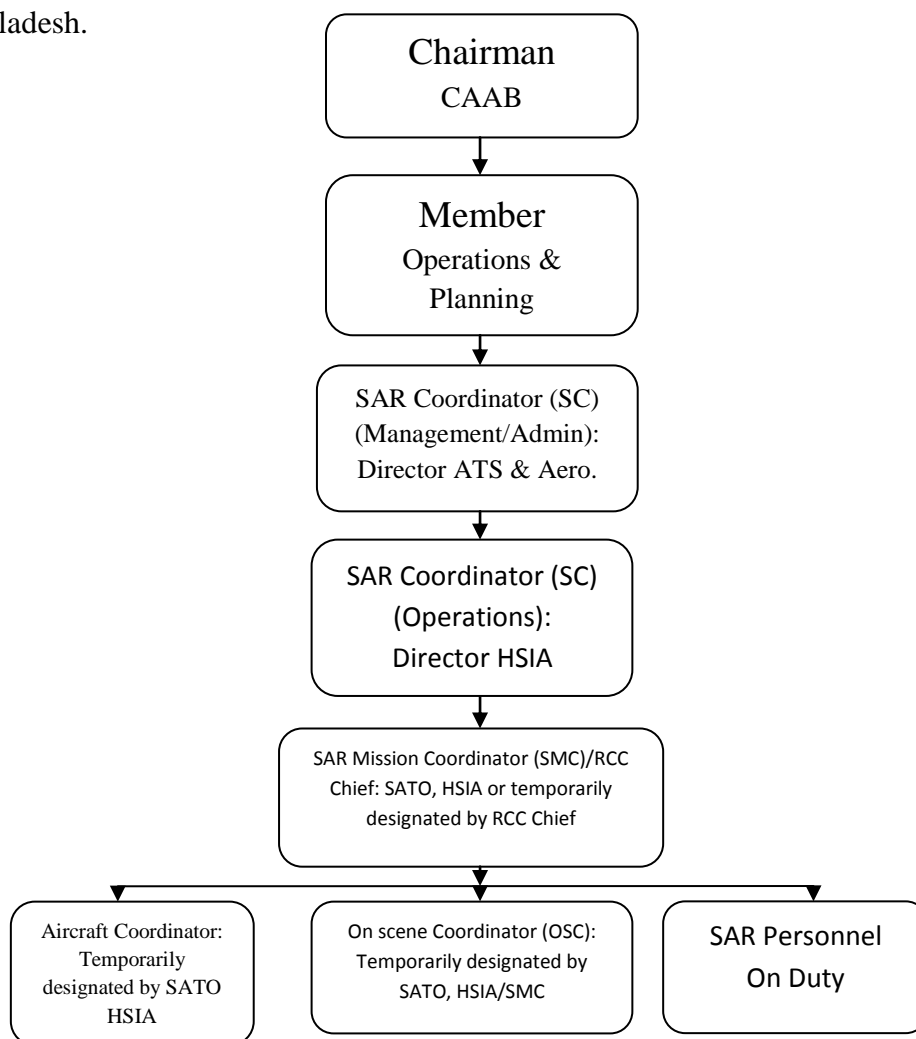


Chapter- 2

2. Organisation

2.1 SAR Co-ordinating Organisation of CAAB

The following chart shows the positions of the SAR Organisations in CAA Bangladesh.



2.2 SAR Services

2.2.1 The SAR organization shall, individually or in cooperation with other States, arrange for the establishment and prompt provision of SAR services within Bangladesh SRR to ensure that assistance is rendered to persons in distress. Such services shall be provided on a 24-hour basis.

2.2.2 The SAR Procedures shall be prepared taking into consideration available resources within the country of various organisation for example, Defense Forces, Marine Authority, Fire Brigade, Hospitals, Police and other Organisations as may be applicable. The relevant



Organisations shall render appropriate assistance and services as per the detailed role & procedures agreed upon and required for SAR Organisation.

2.2.3 Those portions of the high seas or areas of undetermined sovereignty for which SAR services will be established shall be determined on the basis of regional air navigation agreements. The SAR organization, having accepted the responsibility to provide SAR services in such areas shall thereafter, individually or in cooperation with other States, arrange for the services to be established and provided in accordance with the provisions of this SAR manual.

2.2.4 Basic elements of SAR services shall include a legal framework, a responsible authority, organized available resources, communication facilities and a workforce skilled in coordination and operational functions.

2.2.5 SAR services shall establish processes to improve service provision, including the aspects of planning, domestic and international cooperative arrangements and training.

2.2.6 In providing assistance to aircraft in distress and to survivors of aircraft accidents, the SAR organization shall do so regardless of the nationality or status of such persons or the circumstances in which such persons are found.

2.2.7 The SAR organization having accepted responsibility to provide SAR services shall use SAR units and other available facilities to assist any aircraft or its occupants that are or appear to be in a state of emergency.

2.2.8 The SAR organisation shall ensure that the Rescue Coordination Centre and if applicable Rescue Sub Centre develops written Job Descriptions for each of their technical staff.

2.2.9 Where separate aeronautical and maritime RCC serve the same area, the SAR organization shall ensure the closest practicable coordination between the centres. The SAR organization should facilitate consistency and cooperation between their aeronautical and maritime SAR services. Joint Rescue Coordination Centres (JRCC) should be established to coordinate aeronautical and maritime SAR operations, where practical.

2.3 Search and Rescue Region (SRR)

2.3.1 The Dhaka SRR is coincident with the boundaries of Dhaka Flight Information Region (FIR) covering the whole territory of Bangladesh and adjacent waters.

2.4 Rescue Coordination Centre (RCC)

- i. The SAR Co-ordinator shall establish an RCC within the SRR;
- ii. RCC and as appropriate, Rescue Sub Centre (RSC) shall be arranged to be Staffed 24 hours a day by trained personnel and they should be proficient in the use of the English Language for radiotelephony communications;



- iii. In case Dhaka RCC is not staffed on a 24-hour basis, provision must be made for standby RCC staff to be mobilized rapidly and RCC shall be activated without delay.

As the Dhaka ACC has been designated as Search and Rescue Point of Contact (SPOC) and is available for 24-hour basis, arrangements shall be made so that anybody requiring contacting Dhaka RCC can get Dhaka ACC instantaneously whenever Dhaka RCC is unmanned.

- iv. RCC shall be employed with sufficient workforce skilled in coordination and operational functions;
- v. RCC should have job descriptions for each of its technical staff;
- vi. SAR personnel (SC, SMC, OSC,) shall be trained regularly and that appropriate exercises are arranged;
- a) Desktop/Communications Exercise (May be repeated regularly)
 - b) Co-ordination Exercise (At least once in a year)
 - c) Full-Scale Exercise or a Field Exercise (At least once in two years)
- vii. Training programmes (Initial, Recurrent and Specialized) should be established for RCC staff and maintain Training Records;
- viii. Any authority or any element of Search and Rescue organisation having to believe that an aircraft is in an emergency shall give immediately all available information to the RCC concerned.
- ix. The RCC is located in the Operation Building, 3rd Floor, Room No. 417,
- x. Dhaka ACC has been designated as the Search and Rescue (SAR) point of contact (SPOC) for the receipt of COSPAS-SARSAT distress data. Flight Information Officer (FIO) on duty shall act as an RCC in charge before activation of RCC.

The address and telephone numbers for SAR point of contact are:

Dhaka Area Control Centre 3rd Floor

Control Tower Building,

Hazrat Shahjalal International Airport,

Kurmitola, Dhaka-1229

Bangladesh

AFTN; VGHSZQZX

Tel: + 88-02-8901462, 8901463, 8901464

Fax: + 88-02-8901924

E-mail: rcc_dhaka@caab.gov.bd



A fully capable RCC's capability is described as below:

Required	Desired
<ul style="list-style-type: none"> ▶ 24-hour availability duty officer on call basis; ▶ Trained persons; ▶ Persons with a working knowledge of the English Language; ▶ Charts which apply to the SRR (aeronautical, nautical, topographical and hydrographical); ▶ Means of plotting; ▶ Ability to receive distress alerts ,e.g., from MCCs; ▶ Immediate communication with : <ul style="list-style-type: none"> - associated ATS units; - associated RUs or SARUs on 121.5 , 123.1, MHz & 2187.5, 2182 KHz; ▶ Rapid and reliable communications with: <ul style="list-style-type: none"> - Parent agencies of SRUs - alerting posts; - adjacent RCCs (Kolkata, Yangon) - designated meteorological offices ▶ Plans of operation; ▶ Ability to Coordinate provision of medical advice; ▶ Ability to Coordinate provision of medical assistance or evacuation. 	<ul style="list-style-type: none"> ▶ Legal documents such as: <ul style="list-style-type: none"> - ICAO Annex 12,13, SAR Manual, Sunrise/ Sunset tables and AIP Bangladesh; ▶ Wall chart depicting : <ul style="list-style-type: none"> - SRR, SRSs, and neighboring SRRs; ▶ SAR resources; and ▶ Computer resources Databases.

2.5 Names, locations and telephone numbers of RCC and Rescue Sub Centers are given below:

RCC and SAR point of contact:

Sl No.	Name of the Airport.	ACC and RCC Tel. No.	Director/ APM, & SATO
1	Hazrat Shahjalal International Airport, Dhaka.	ACC : 8901462, 8901463. 8901904-13/3465, 3410. RCC : 8901464, 8901904-13/3589. Control Tower : 7914462; 8901904-13/3513.	Tel: 8901449 Fax: 8901450 SATO: 02-8901460, 8901904-13/3412. Mob: 01708167096 E-mail: dhsia@caab.gov.bd



The following Civil Airports Control Towers are established as Rescue Sub Centres and point of contact on 24 hour on call basis:

2.	Shah Amanat International Airport, Chittagong.	Control Tower: 031-2500982,	APM: 031-2500900. Mob: 01708167272 SATO: 031-2500954, apmctg@caab.gov.bd
3.	Osmani International Airport, Sylhet.	Control Tower: 0821-718459 Mob:01746355500	APM: 0821-714243 Mob: 01708167286 apmsylhet@caab.gov.bd
4.	Cox's Bazar Airport, Cox's Bazar.	Control Tower: 0341-62530	APM: 0341-52353 APM: 01708167294 apmcox@caab.gov.bd
5.	Ishurdi Airport, Ishurdi.	Control Tower 07326-63961	APM: 07326-63569 Mob: 01708167311
6.	Jessore Airport, Jessore.	Control Tower: 0421-65032	APM: 0421-64033 Mob: 01708167298 apmjessore@caab.gov.bd
7.	Saidpur Airport, Saidpur.	Control Tower: 05526-72044	APM: 05526-72384 Mob: 01708167307 apmsaidpur@caab.gov.bd
8.	Shah Makhdum Airport, Rajshahi.	Control Tower: 0721-800157	APM: 0721-800153 Mob: 01708167303 apmrajshahi@caab.gov.bd
9.	Barisal Airport, Barisal.	Control Tower: 0427-73373	APM: 0427-73362 Mob: 01708167315 apmbarisal@caab.gov.bd
10	Comilla Airport, Comilla.	-	APM: 081-76119 Mob: 01708167316

2.6 Alerting Posts

The following authorities, agencies, aerodromes and their associated units are designated alerting posts in Bangladesh:

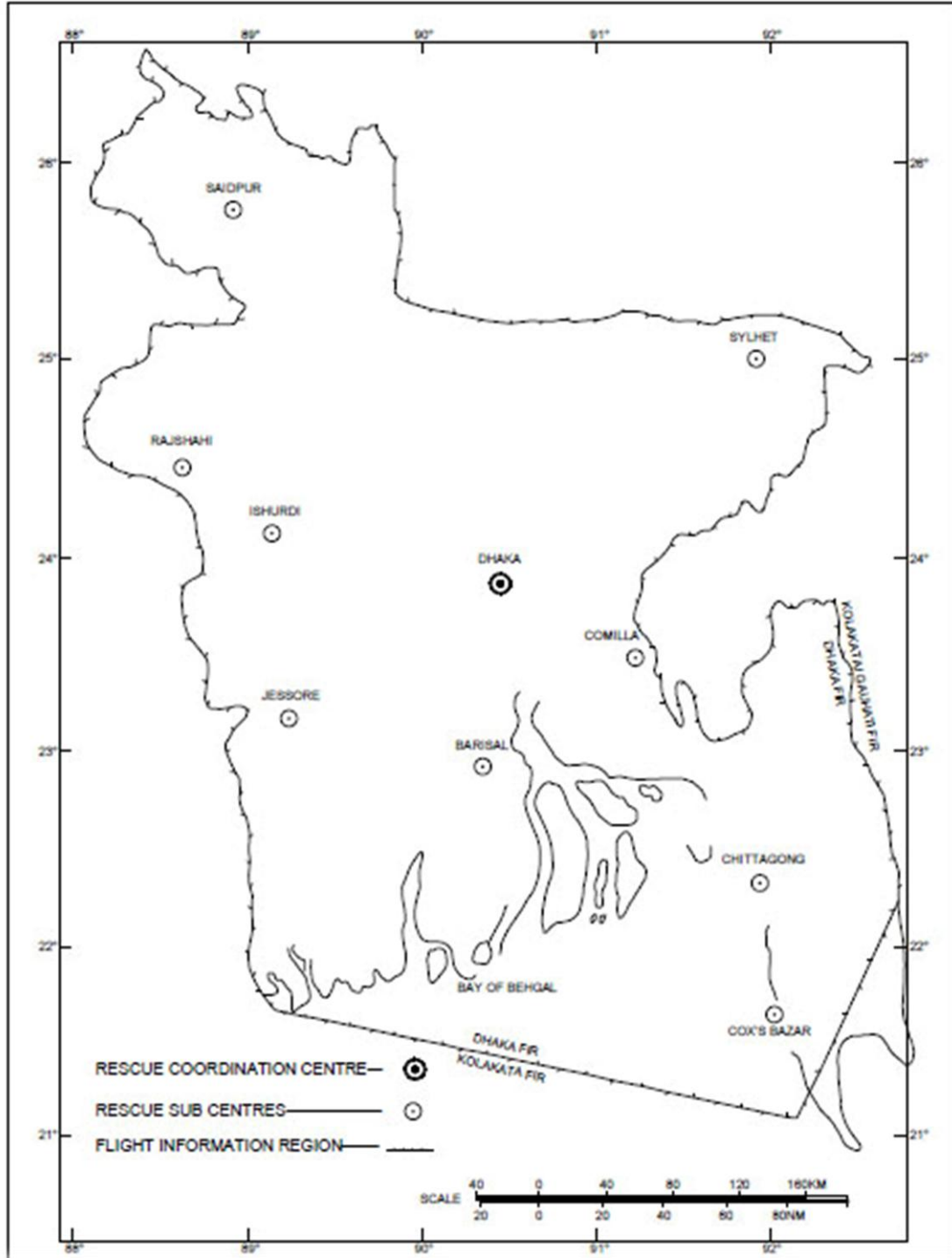
- a) All Civil Airports and Aerodrome ;`
- b) All Army Units ;
- c) All Air Force Units ;
- d) All Naval & Coast Guard Units ;
- e) All Police-stations ;
- f) All Border Guard Units;
- g) All Railway Stations ;
- h) All Forest department Units located in different forest ranges ;
- i) All BIWTA and BIWTC Offices ;
- j) Mercantile Marine and Port Authorities;
- k) All other establishments and offices having communication and broadcasting facilities;
- l) All RAB Units including RAB HQ ;



- m) Meteorological Department;
- n) Telephone and telegraph department;
- o) Health Department;
- p) Fire Services and Civil Defense Headquarters, Dhaka (all fire stations may act as alerting post).
- q) ATS units, aircraft, vessels or other persons or facilities which may receive and relay alerts.



RESCUE COORDINATION CENTRE AND RESCUE SUB CENTRES





2.7 SAR Communications

- 2.7.1 The RCC shall have means of rapid and reliable two-way communication with:
- associated Air Traffic Services units;
 - associated RU;
 - associated alerting post;
 - the Headquarters of SAR Units in the Region;
 - maritime RCCs in the region if appropriate;
 - a designated Meteorological office or Meteorological watch office; and
 - the Cospas- Sarsat Mission Control Centre(MCC) servicing the SRR.

2.8 SAR Units

2.8.1 The SAR organization shall designate as SAR units elements of public or private services suitably located and equipped for SAR operations.

2.8.2 As parts of the SAR plan of operation, the SAR organization shall designate elements of public or private services that do not qualify as SAR units but are nevertheless able to participate in SAR operations.

2.9 SAR equipment

2.9.1 Rescue units and SAR units shall be provided with equipment for locating promptly, and for providing adequate assistance at the scene of an accident.

2.9.2 Each Rescue unit and SAR unit should have means of rapid and reliable two-way communication with other SAR facilities engaged in the same operation.

2.7.3 Each SAR aircraft shall be equipped to be able to communicate on the aeronautical distress and on-scene frequencies and on such other frequencies as may be prescribed.

2.9.4 Each SAR aircraft shall be equipped with a device for homing on distress frequencies. (121.5 MHz, 123.1 MHz, 2182 KHz and 2187 KHz)

Note 1: Emergency locator transmitter (ELT) carriage requirements are available in Annex 6, Parts I, II, and III and relevant Air Navigation Orders.

Note 2: Specification for ELTs is available in Annex 10, Volume III and relevant Air Navigation Orders.

2.9.5 Each SAR aircraft, when used for SAR over maritime areas, shall be equipped to be able to communicate with vessels on 2182 KHz (survival craft radio).156.8MHz (Channel 16) is the International VHF maritime voice Distress, safety and calling frequency and 156.3 MHz Channel 16 and 70 respectively) or 123.1 MHz may be used for communication on scene as applicable.

2.9.6 Each SAR aircraft, when used for SAR over maritime areas shall carry a copy of the *International Code of Signals* to enable it to overcome language difficulties that may be experienced in communicating with ships.

2.9.7 Unless it is known that there is no need to provide supplies to survivors by air, at least



one of the aircraft participating in a SAR operation should carry droppable survival equipment.

2.9.8 The SAR organization should locate, at appropriate aerodromes, survival equipment suitably packed for dropping by aircraft. (the basic pack items are Ration, Signaling equipments, Medical items, Covering items, Fire and lighting items, Sundries etc.)

2.9.9 The SAR organisation shall:

- a) keep the SAR Plan and procedures in a readily accessible form;
- b) amend the SAR Plan whenever necessary to keep its contents up-to-date.

2.9.10 Each SAR Unit shall:

- a) be cognizant of all parts of the plans of operation prescribed in (2.9) that are necessary for the effective conduct of its duties; and
- b) keep the RCC informed of its preparedness

2.9.11 The SAR organisation shall:

- a) keep the SAR Manual, SAR plans of operation or Organisation and procedure for SAR of aircraft in distress in a readily accessible form;
- b) amend the SAR Manual, SAR plans of operations or Organisation and procedure for aircraft in distress whenever necessary to keep its content up to date.

2.9.12 The SAR organisation shall submit a copy of the most current SAR Plan to the Chairman CAAB.



Chapter-3

3. Cooperation

3.1 Cooperation between States

3.1.1 The SAR organization shall arrange coordination of their SAR efforts with those of neighboring States.

3.1.2 RCC when necessary coordinates their SAR operations with those of neighboring States especially when these operations are proximate to adjacent SRR.

3.1.3 Subject to the SAR agreements that had been concluded between Civil Aviation Authority of Bangladesh and the SAR authorities or agencies of neighboring States, the SAR organization shall permit immediate entry into its territory of SAR units of other States for the purpose of searching for the site of aircraft accidents and rescuing survivors of such accidents or provided the approval of entry is obtained from the higher authority.

3.1.4 SAR units entering the territory of neighboring States for SAR purposes shall transmit a request with prior approval from the higher authority, giving full details of the projected mission and the need for it, to the RCC of the neighboring State concerned or to such other authority as had been designated by the State.

3.1.5 Agreements with neighboring states should be made to strengthen SAR cooperation and coordination, setting forth the conditions for entry of each other's SAR units into their respective territories. These agreements should also provide for expediting entry of such units with the least possible formalities.

3.1.6 Requests for the entry of aircraft, equipment and personnel from other States to engage in search for aircraft in distress or to rescue survivors of aircraft accidents should be transmitted to the RCC.

The RCC shall:

- a) immediately acknowledge the receipt of such a request,
- b) forward the request, to the concerned authorities, and
- b) as soon as possible, indicate the conditions, if any, under which the projected mission may be undertaken.

3.1.7 Instructions as to the control which will be exercised on entry of such aircraft and/or personnel shall be given by the RCC in accordance with the standing plan for the conduct of SAR in the area.

3.1.8 The SAR organization with prior approval from higher authority shall:

- a) when request from other RCCs, provide assistance including assistance in the form of aircraft, vessels, persons or equipment, as may be needed;
- b) grant any necessary permission for the entry of such aircraft, vessels, persons or equipment into its territory; and
- c) make the necessary arrangements with the appropriate customs, immigration or other authorities with a view to expediting such entry.



3.1.9 The SAR organization shall make arrangement for joint training exercises involving its SAR units, those of neighboring States and operators, if possible, to promote search and rescue efficiency.

3.1.10 The SAR organization should make arrangements for periodic liaison visits by personnel of its RCC to the centres of neighboring States.

3.2 Cooperation with other Services

3.2.1 The SAR organization shall arrange for all aircraft, vessels and local services and facilities which do not form part of the SAR organization to cooperate fully with the latter in SAR and to extend any possible assistance to the survivors of aircraft accidents.

3.2.2 To provide for the most effective and efficient SAR services, the SAR organization should maintain the closest practicable coordination between the relevant aeronautical and maritime authorities.

3.2.3 The SAR organization shall ensure that their SAR services cooperate with those responsible for investigating accidents and with those responsible for the care of those who suffered from the accident. To facilitate accident investigation, rescue units should, when practicable, be accompanied by persons qualified in the conduct of aircraft accident investigations.

3.2.4 Any authority, organisation or element of the SAR organisation having reason to believe that an aircraft is in an emergency shall give immediately all available information to the RCC.

3.3 SAR Point of Contact (SPOC)

3.3.1 The SAR organization shall designate a SAR point of contact for the receipt of COSPAS-SARSAT distress data.

3.3.2 Dhaka ACC/RCC has been designated as the SAR point of contact for receipt of COAPAS-SARSAT distress data.

3.3.3 National regulations shall be available or SAR organisation shall arrange for carriage of ELTs and arrangements for registration of the 406 MHz beacon and rapid access to the beacon registration database.

3.4 Dissemination of Information:

3.4.1 The SAR organization shall publish and disseminate all information necessary for the entry of SAR units of other States into its territory or, alternatively, include this information in SAR service arrangements.

3.4.2 When such information could benefit the provision of SAR services, the SAR organization should make available, through the RCC or other agencies, information regarding their SAR plans of operation.

3.4.3 The SAR organization should, to the extent desirable and practicable, disseminate information to the general public and emergency response authorities regarding actions to be taken when there is reason to believe that an aircraft's emergency situation may become cause for public concern or require a general emergency response.

3.4.4 Information necessary for SAR services shall be published in AIP Bangladesh.



Chapter-4

4. Preparatory Measures

4.1 Preparatory Information

4.1.1 The RCC shall have readily available at all times up-to-date information concerning the following in respect of its SRR:

- a) SAR units, Rescue units and alerting posts;
- b) air traffic services units;
- c) means of communication that may be used in SAR operations;
- d) addresses and telephone numbers of all operators, or their designated representatives, engaged in operations in the region; and
- e) any other public and private resources including medical and transportation facilities that are likely to be useful in SAR.

4.1.2 In addition, the RCC should have readily available all other information related to SAR, including information regarding:

- a) the locations, call signs, hours of watch, and frequencies of all radio stations likely to be employed in support of SAR operations;
- b) the locations and hours of watch of services keeping radio watch, and the frequencies guarded;
- c) locations where supplies of droppable emergency and survival equipment are stored; and
- d) objects which it is known might be mistaken for un located or unreported wreckage, particularly if viewed from the air.

4.1.3 The RCC whose SRR includes maritime areas should have ready access to information regarding the position, course and speed of ships within such areas that may be able to provide assistance to aircraft in distress and information on how to contact them.

Note: This information may either be kept in the RCCs or be readily accessible.

4.1.4 The SAR organisation, should, make arrangements for communication/coordination with maritime authorities to facilitate SAR operation at sea.

4.2 SAR Plans of Operation

4.2.1 The RCC shall prepare detailed plans of operation for the conduct of SAR operations within its search and rescue region.

4.2.2 SAR plans should be developed jointly with representatives of the operators and other public or private services that may assist in providing SAR services or benefit from them, taking into account that the number of survivors could be large.

4.2.3 The plans of operation shall specify arrangements for the servicing and refueling, to the extent possible, of aircraft, vessels and vehicles employed in SAR operations, including those made available by other States.



4.2.4 SAR plans of operation should be integrated with Airport Emergency Plans to provide for Rescue Services in the vicinity of aerodromes including coastal aerodromes, areas of water.

4.2.5 The SAR plans of operation shall contain details regarding actions to be taken by those persons engaged in SAR, including:

- a) the manner in which SAR operations are to be conducted in the SRR;
- b) the use of available communication systems and facilities;
- c) the actions to be taken jointly with other rescue coordination centres ,as appropriate;
- d) the methods of alerting en-route aircraft and ships at sea;
- e) the duties and prerogatives of persons assigned to SAR;
- f) the possible redeployment of equipment that may be necessitated by Meteorological or other conditions;
- g) the methods for obtaining essential information relevant to SAR operations, such as weather reports and forecasts, appropriate NOTAM, etc.;
- h) the methods for obtaining, from other rescue coordination centres, such assistance, including aircraft, vessels, persons or equipment, as may be needed;
- i) the methods for assisting distressed aircraft being compelled to ditch to rendezvous with surface craft;
- j) the methods for assisting SAR or other aircraft to proceed to aircraft in distress; and
- k) cooperative actions to be taken in conjunction with air traffic services units and other authorities concerned to assist aircraft known or believed to be subject to unlawful interference.

4.2.5 Search planning involves following

- a) evaluating the situation, including the results of any previous searching;
- b) estimating the distress incident location and probable error of that location;
- c) estimating the survivors' post-distress movements and probable error of that estimate;
- d) using these results to estimate the most probable location (datum) of survivors and the uncertainty (probable error of position) about that location;
- e) determining the best way to use the available search facilities so the chances of finding the survivors are maximized (optimal search effort allocation);
- f) defining search sub-areas and search patterns for assignment to specific search facilities;
- g) providing a search action plan that includes a current description of the situation, search object description(s), specific search responsibilities to search facilities, on-scene co-ordination instructions, and



- h) search facility reporting requirements.

These steps are repeated until either the survivors are located or evaluation of the situation shows that further searching would be futile.

4.2.6 Determination of search areas

The many diverse criteria involved in estimating the likely location(s) and condition(s) of the survivors make it impossible to give detailed, step-by-step instructions on how to make such estimates. Sound judgment and careful analysis of all available clues are therefore required to produce a valid assessment on which to base a search.

4.2.7 General

The following factors should be considered for their possible effect on the probability area:

- errors in navigation by missing aircraft;
- drift (if applicable) to include currents and wind effect;
- last known position;
- weather in the area;
- elapsed time from last known position;
- aircraft endurance;
- known hazards along the aircraft's route.

Computer programs giving aid in search planning may be used to:

- a) calculate drift;
- b) calculate probability of detection;
- c) evaluate many different scenarios with a range of incident times, positions, situations and environmental factors; and
- d) propose locations and areas most likely to contain the search object.

4.2.8 The possibility area

The possibility area is displayed as a circle drawn round the last known position of the aircraft. The radius is determined by the endurance at that time, expressed in terms of distance and taking into account the wind velocity. It is assumed that the aircraft may have proceeded in any direction, even opposite to that of the flight plan, until the fuel was exhausted. Determination of the possibility area will enable the SMC to filter incoming reports to identify those geographically irrelevant.

4.2.9 The probability area

Systematic search of a large area is normally not practicable, and concentrating the Search in the area where the search object is most likely to be located (the probability area) will make better use of the search Units available. Unless the position of an aircraft in distress is accurately known, the most Probable location of the missing aircraft should be calculated. This location, corrected for surface movements over time, is known as the datum. Determination of the probability area is based on the navigational accuracy of the last known position of the aircraft.

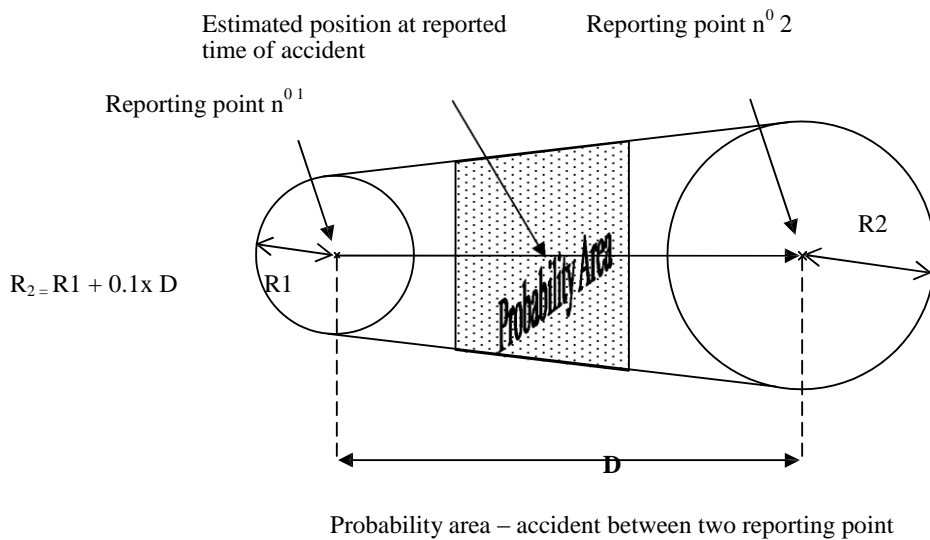


Basic determination of the probability area;

The probability area is determined as follows:

- draw a circle with a radius R_1 (e.g 10 NM) around the last position ;
- draw a circle around the next reporting point with a radius of R_1 plus 10% of the distance between the two points R_2 ; and
- draw straight lines tangential to the circle.

The datum area will be centered on the probable location of the aircraft based on the reported time of crash. (Probability area – accident between two reporting points)



When an aircraft disappears en-route, the first theory is that the aircraft is located on or the intended track or that it has experienced a communication failure and is proceeding in accordance with the flight plan. In this case, the search will be confined to the immediate vicinity of the track.

4.3 Equipage of RCC

RCC should be equipped with the following:

- Legal Documents such as ICAO Annex 10, 11, 12, & 13;
- Organization and procedure for SAR of aircraft in distress,;
- SAR Manual,
- ANO on SAR;
- Sunrise/ Sunset Tables;
- AIP Bangladesh;
- Maps and Charts (Aeronautical, Topographical, and Hydrographical) of; different scales;
- Computer Facilities so as to retrieve and display of information previously stored;



- i Log books pertaining to RCC;
- j RCC & RUs location charts;
- k Rapid and Reliable SAR Communications systems with various units/agencies;
- l Distress frequencies ; 121.5MHZ
- m Plotting Equipments;
- n HF/RT;
- o VHF/Walkie Talkie, Official Cell Phone;
- p Satellite communication system for reception of COSPAS-SARSAT Distress Alert (406 MHZ) and data base from ELT.

4.4 Necessary Information & Preparedness

Each SAR units, shall;

- a) having knowledge of all parts of the plans of operation that are necessary for the effective conduct of its duties; and
- b) keep the rescue coordination centre informed of its preparedness.

4.5 SAR Facilities & Logistics

The SAR organisation shall:

- a) maintain in readiness the required number of SAR facilities;
- b) maintain adequate supplies of rations, medical stores, signaling devices and Other survival and rescue equipment.

4.6 Training Policies & Programs

The Director (ATS & Aerodromes) shall ensure the development of detailed Training Policies & Programs and Annual Periodic Training Plans for SAR personnel to maintain a basic level of competency that includes Initial, Recurrent/Refresher, Specialized training, and knowledge about updates in ICAO provisions.

4.6.1 The following training should be included as Initial Training

- a) Basic ATC Course
- b) Basic SAR course;
- c) SAR Administrators course;
- d) SAR Management course;
- e) SAR Mission coordinator course;
- f) SAR Team leadership course;
- g) SAR Operations course.

4.6.2 All SAR officers/staff shall undergo Refresher/Recurrent, Specialized training on the above mentioned fields/topics.

4.6.3 Training in aeronautical SAR shall consist of theoretical and practical knowledge of aeronautical SAR operations. The following subject areas should be included to demonstrate a level of knowledge appropriate to conduct aeronautical SAR operations in the RCC:

- a) General SAR procedures
 - ICAO Annex 12 and International provisions
 - SAR organization
 - SAR resources



- SAR communications
 - SAR operating procedures
 - RCCs and rescue sub-centres, as appropriate;
 - Meteorological information for SAR
 - Conduct of search and air search patterns
 - Rescue of survivors
- b) Aeronautical SAR procedures
- Aeronautical SAR organization
 - Aeronautical RCC administration
 - Basic navigation
 - Search areas (sea and land)
 - Search techniques (sea and land)
 - Plotting exercises

4.7 Foreign Training

The Chief of SAR Service/Director ATS shall, after the assessment, authorize trainings in the foreign institutions, if so required. While doing so, the Chief of SAR Services will ensure the quality of the training provided.

4.8 SAR Training and Exercise

SAR services, to achieve and maintain maximum efficiency in SAR shall provide regular training of their SAR personnel and arrange appropriate SAR Exercise.

- a) Simple type/Desktop/Communications Exercise: (May be repeated regularly), 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) Co-ordination Exercise: (At least once in a year), involves simulated response to a crisis based on a series of scenarios. All levels of SAR services are involved but do not deploy. This type of exercise requires considerable planning, and usually one to three days to execute.
- c) Full-Scale Exercise or a Field Exercise: (At least once in two years), 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.

4.9 Maintaining Training Records and Files

The SAR organization shall maintain training records and files for their SAR officers and staff.

4.10 Wreckage

The SAR organisation should ensure that wreckage resulting from aircraft accidents within its SRR or, in the case of accidents on the high seas or in areas of undetermined sovereignty, within the SRR for which it is responsible, is removed, obliterated or charted following completion of the accident investigation, if its presence might constitute a hazard or confuse subsequent search and rescue operations.



Chapter- 5

5. Job descriptions of SAR/RCC Officers and Staff

5.1 SAR Coordination

The SAR system has three general levels of co-ordination:

General Levels	General Functions	Designation of SAR Services in CAAB
1(a) SAR Co-ordination	Management/Admin	Director (ATS & Aerodromes)
1(b) SAR Co-ordination	Operation	Director HSIA
2.SAR Mission Coordination	Mission Planning	SATO (HSIA) or temporarily designated by RCC Chief/ SMC from the trained ATS personnel.
3.On-Scene Coordination	Operational Oversight	Temporarily designated by SATO (HSIA) from ATS personnel.

5.2 Duties and Responsibilities of SAR Coordinator (SC) (Management/Admin)

SAR Coordinator (SC) is the top level SAR manager under the Chairman & Mem. Operations of CAAB. He is overall responsible for;

- a) establishing, staffing, equipping and managing the SAR system;
- b) establishing RCCs;
- c) providing or arranging for SAR facilities;
- d) coordinating SAR training;
- e) developing SAR policies;
- f) ensuring that the SAR personnel engaged in all SAR units are properly trained and maintained a high level of competence as regards of their functions in the SAR organisation.
- g) ensuring that their SAR services cooperate with those responsible for investigating accidents and with those responsible for the care of those who suffered from accident. To facilitate accident investigation, RCC or RSC personnel should, when practicable, be accompanied by persons qualified in the conduct of aircraft accident investigations.

5.3 Qualifications of Search and Rescue Mission Coordinator (SMC)

The SMC must be from Air Traffic Services with at least 10 years experience in Air Traffic Control and have completed appropriate SAR training and must keep proficiency as per the organizational procedure. The SMC must be capable of performing all SAR functions



required by the SAR authority. To fulfill the foregoing requirements, the SMC must have a good knowledge of the communications available, the geographical features of the region, and the capabilities and limitations of SAR assets. The SMC must use initiative and be inquisitive in the search for information, cross-checking the sources in doubtful cases.

5.4 Duties and Responsibilities of SMC

- a) arrange briefing and debriefing for SAR personnel.
- b) maintain RCC equipment, including primary lines of communication, in good operational order;
- c) Take measures to ensure that RCC receives timely notification from providers;
- d) Ensure that information of serviceability, readiness and other particular facilities is suitably recorded in RCC;
- e) Ensure that all operations are entered in a log and that they are reviewed and appraised;
- f) Submit a report to the SAR Coordinator upon the termination of a SAR incident. Each SAR operation is carried out under the guidance of SMC. This function exists only for the duration of a specific SAR incident and is normally performed by the SMC. The SMC may have assisting staff.
- g) gather information about distress situations
- h) develop accurate and workable SAR action plans
- i) dispatch and co-ordinate the resources to carry out SAR missions.
- j) obtain and evaluate all data on the emergency
- k) develop the search action plan and rescue action plan as appropriate
- l) ascertain the type of emergency equipment carried by the missing or distress Aircraft.
- m) plot the areas to search and decide methods and facilities to be used.
- n) coordinate the operation with adjacent RCCs when appropriate.
- o) evaluate all reports and modify search action plan as necessary.
- p) arrange for delivery of supplies to sustain survivors.
- q) issue progress report.
- r) determine when to suspend or terminate the search.
- s) notify accident investigation authorities.
- t) prepare a final report.

The SMC guides a SAR operation until a rescue has been effected or it becomes apparent that further efforts would be no avail. The SMC should be well trained in all SAR process, be thoroughly familiar with the applicable SAR plans.

5.5 Qualifications of On Scene Coordinator (OSC)

To assume the duties as OSC, the incumbent shall have a minimum of 5 years experience as an Air Traffic Control Officer in ATC Units and shall satisfactorily have passed an established basic SAR course or SMC Course or SAR Administrator course. The basic SAR course for RCC personnel shall include those mentioned in the document of ICAO Manual IAMSAR Volume-I, which is guidance material for the establishment of SAR organisation and management.



5.6 Duties and Responsibilities of OSC:

- a) When two or more SAR facilities are working together on the same mission, one person on-scene may be needed to co-ordinate the activities of all participating facilities.
- b) The SMC designates an OSC, who may be the person in charge of a Search and Rescue unit.
- c) The person in charge of the first facility to arrive at the scene will normally assume the OSC function until the SMC arranges for that person to be relieved.

5.7 Duties & Responsibilities of RCC /RSC staff

(Temporarily designated by SMC for RCC from ATS & Airport Manager (APM) and other ATS staff of each Airport shall be responsible for RSC functions)

The RCC staff/APM shall:

Performs duties in the event of SAR operations as per direction of SMC. In addition they have responsibility for maintaining the RCC/RSC in a continuous state of preparedness, and shall:

- a) remain informed on weather situation throughout the SRR;
- b) make sure all the communication facilities are available;
- c) keep the records of all SAR telephone directories up-to-date;
- d) Initiate documentation/Maintain Log Book
- e) Prepare material, maps, etc. for plotting;
- f) Check up on SAR resources; and
- g) Obtain information on;
 - i. Origin of alert;
 - ii. Type of incident;
 - iii. Possibility to contact alerting person;
 - iv. Position and/or route, flight plan, last reported position and radio frequency used.
 - v. Time of incident;
 - vi. Aircraft (Reg, Type and other particulars);
 - vii. Persons on board;
 - ix. Type of cargo;
 - x. Assistance requested if any;
 - xi. Intentions of the pilot;
 - xii. Communications;
 - xiii. Verify weather (previous, present, prognosis);
 - xiv. Rescue equipment required;
 - xv. Clothing required for land parties; and verifies information received:

5.7.1 The RCC/RSC staff shall consist of personnel who are experienced in ATC and/or trained in SAR operations.



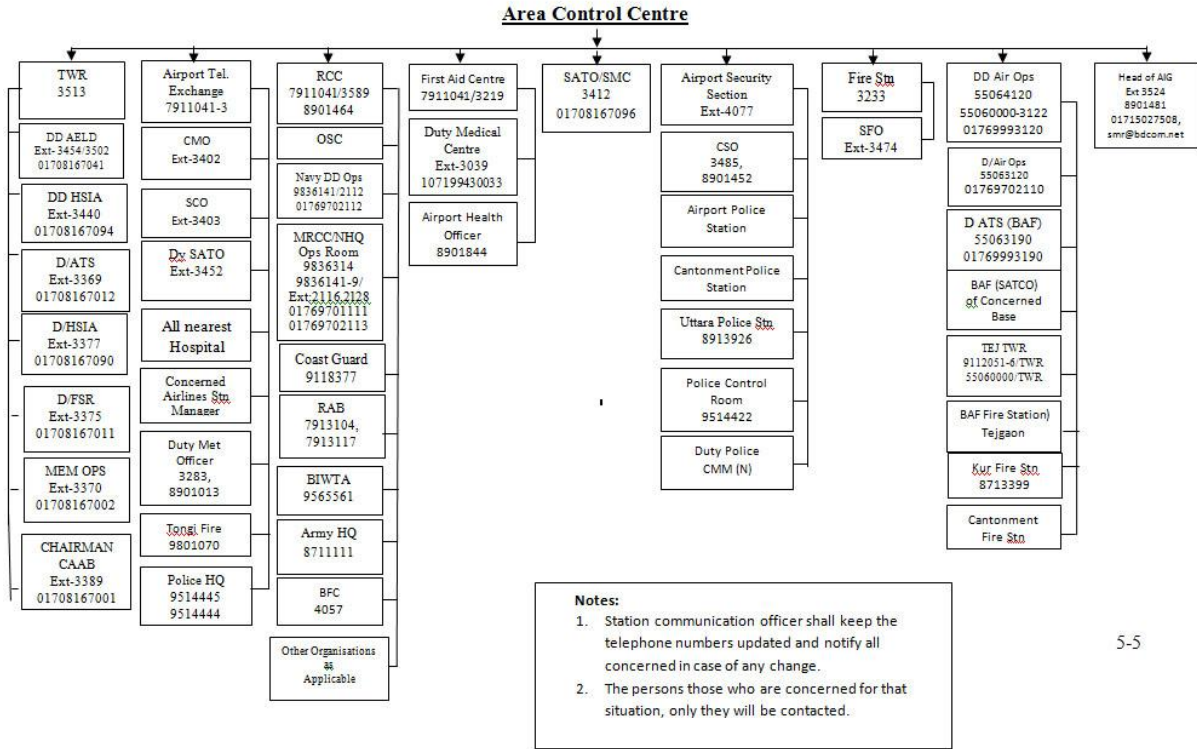
5.7.2 When a period of heavy activity is anticipated or during major SAR incidents, the regular staff may be supplemented as required.

5.7.3 Agencies and authorities that may be involved in providing SAR services to an RCC in the event of an incident are to be alerted as early as practicable so that staffing can be managed.

5.7.4 The number of personnel required to staff an RCC will vary with local requirements, such as traffic density, seasonal conditions etc.



5.8 SAR Information Flow Chart:





Chapter-6

6. SAR System

6.1 Procedure for Rescue Co-ordination Centre

The procedure given below is intended to provide guidance to the authorities in charge of Rescue Co-ordination Centers, Rescue Sub Centre and Alerting Posts. These are only basic procedures normally adopted and should be interpreted with a measure of flexibility because no two search and rescue situations are identical. The sequence of action indicated may have to be modified to suit the particular situation. Notification of emergency Rescue Sub Centers, Alerting posts and/or Air Traffic Services Units shall notify the Rescue Coordination Center concerned immediately an aircraft is believed or reported to be in a state of emergency and also the phase of emergency.

6.2 Information Concerning Emergencies

6.2.1 Any authority or any element of the SAR organization having reason to believe that an aircraft is in an emergency shall give immediately all available information to the RCC.

6.2.2 RCC shall, immediately upon receipt of information concerning aircraft in emergency, evaluate such information and assess the extent of the operation required.

6.2.3 When information concerning aircraft in emergency is received from other sources than air traffic services units, the RCC shall determine to which emergency phase the situation corresponds and shall apply the procedures applicable to that phase.

6.3 Procedures for RCC during Emergency Phases

Three phases of emergencies are:

a) Uncertainty phase, when

- i) no communication has been received from an aircraft within a period of thirty (30) minutes after the time a communication should have been received or from the time an unsuccessful attempt to establish communication with such an aircraft was first made, whichever was earlier.
- ii) an aircraft fails to arrive within thirty(30) minutes of the estimated time of arrival last notified to or estimated by air traffic service units, whichever is the later, except when no doubt exist as the safety of the aircraft and its occupants.

Upon the occurrence of an uncertainty phase, the RCC shall cooperate to the utmost with Air Traffic services units and other appropriate agencies and services in order that incoming reports may be speedily evaluated.

**b) Alert phase, when:**

- i) following the uncertainty phase, subsequent attempts to establish communication with aircraft or enquiries from other sources have failed to reveal any news of the aircraft, or when;
 - ii) an aircraft has been cleared to land and fails to land within five minutes of the estimated time of landing and communication has not been re-established with the aircraft, or when;
 - iii) information has been received which indicates that the operating efficiency of the aircraft has been impaired, but not to the extent that a forced landing is likely, except when evidence exists that would allay apprehension as to the safety of the aircraft and its occupants, or when;
 - iv) an aircraft is known or believed to be the subject of unlawful interference.
- Upon the occurrence of an alert phase the Rescue Coordination Centre shall immediately alert Search and Rescue units and initiate any necessary action.

c) Distress phase, when :

- i) following the alert phase, further unsuccessful attempts to establish communication with aircraft and more widespread enquiries point to the probability that the aircraft is in distress; or when:
- ii) the fuel on board is considered to be exhausted or to be insufficient to enable the aircraft to reach safety; or when:
- iii) information is received which indicates that the operating efficiency of the aircraft has been impaired to the extent that a forced landing is likely ; or when:
- iv) information is received or it is reasonably certain that the aircraft is about to make or has made forced landing or has crashed.

6.3.1 Notification by ATS Units:

The notification from an ATS unit to RCC or by RCC to RCCs of adjacent countries and to AIG-BD will contain the following information in the order listed:

- a) INCERFA, ALERFA or DETRESFA, as appropriate to the phase of the emergency;
- b) agency and person calling;
- c) nature of the emergency;
- d) significant information from the flight plan (call sign & registration marking of aircraft/owner/type/fuel/place of departure/destination etc.);
- e) time of last communication, by whom received and frequency used;
- f) last position report and how determined;
- g) colour and distinctive marks of aircraft;
- h) any action taken by the reporting officer including details of information when received through a reporting aircraft;
- i) other information.



6.3.2 Notification by informants other than ATS Unit

All persons are encouraged to report abnormal occurrences they have witnessed or may have heard of. Notification that an aircraft has crashed, is overdue or in a state of emergency, etc; may therefore reach to RCC from any source, either directly or relayed through ATS units and/or alerting posts.

6.3.3 Evaluation of Report and action by RCC

After evaluating the information, the RCC will declare the appropriate emergency Phases & will immediately inform:

- a) Dhaka ACC/FIC;
- b) Details of information received shall be entered in a log book which shall also be used for recording subsequent developments. The initial notification of an incident should be entered on a standard “Initial Report Form” (Appendix-III) supplies of which should be available at RCC, ATS units and alerting posts(where applicable). Its use will be preclude the possible loss of certain important details because this was not called to the attention of the information;
- c) Initial action to obtain full details of the aircraft in case of Dep. /Plan. Message not received;
- d) Inform concerned ATS units, Rescue Sub Centres and Alerting posts for necessary search and rescue action and AIG Office;
- e) Inform SATO, Director (ATS & Aero), Director HSIA/Airport Manager, Chairman, Civil Aviation Authority, Member (Operation), Civil Aviation Authority, Director (Flight Safety & Regulations Division), Chief of Flight Inspection, CAAB, Director of Air Operation, Bangladesh Air Force, SATCO BAF Base Basher, Director Operations, Bangladesh Navy, Coast Guard, Owner of the Aircraft, Honorary Secretary Bangladesh Flying Club Limited, Police HQ, Bangladesh Railways, Head of Postal and BTCL, Biman Operation, Harbor master & Port Authorities(if necessary), BIWTA, Deputy Commissioner, Upazila Executive concerned, Radio Bangladesh & Bangladesh Television(if necessary), RAB & BGB Authorities, Fire Service & Civil Defense HQ, Dhaka and any other organization or person if required;
- f) Plot the probable estimated position of the aircraft on the map.

6.4 Initiation of SAR action in respect of an aircraft whose position is unknown

6.4.1 In the event that an emergency phase is declared in respect of an aircraft whose position is unknown and may be in one of two or more Search and Rescue regions, the following shall apply:



- a) When a Rescue Coordination Centre is notified of the existence of an emergency phase and is unaware of other centres taking appropriate action, it shall assume responsibility for initiating suitable action in accordance with 5.3 and confer with neighbouring Rescue Coordination Centres with the Objective of designating one Rescue Coordination Centre to assume responsibility forthwith.
- b) Unless otherwise decided by common agreement of the rescue coordination centres concerned, the rescue coordination centre to coordinate Search and Rescue action shall be centre position for:
 - i. the region in which the aircraft last reported its position; or
 - ii. the region to which the aircraft was proceeding when its last reported position was on the line separating two Search and Rescue regions; or
 - iii. the region to which the aircraft was destined when it was not equipped with suitable two- way radio communication or not under obligation to maintain radio communication; or
 - iv. the region in which the distress site is located as identified by the Cospas-Sarsat system.
- c) After declaration of the distress phase, the Rescue Coordination Centre with overall coordination responsibility shall inform all Rescue Coordination Centres that may become involved in the operation of all the circumstances of the emergency and subsequent developments. Likewise, all Rescue Coordination Centres becoming aware of any information pertaining to the emergency shall inform the Rescue Coordination Centre that has overall responsibility.

6.4.2 Passing of information to aircraft in respect of an emergency phase which has been declared:

- i. Whenever applicable, the RCC responsible for SAR action shall forward to the air traffic services unit serving the flight information region in which the aircraft is operating, information of the SAR action initiated, in order that such information can be passed to the aircraft.

6.5 Procedures where responsibility for operations extends to two or more Contracting States

6.5.1 When the conduct of operations over entire Search and Rescue region is the responsibility of more than one Contracting State, each involved State shall take action in accordance with the relevant plan of operations when so requested by the Rescue Coordination Centre of the region.

6.6 Procedures for Authorities in the Field

- 6.6.1 The authority immediately directs to conduct of operations or any part thereof shall:
 - a) give instructions to the units under their direction and inform the RCC of such instructions; and



- b) keep the RCC informed of developments.

6.7 Search

6.7.1 Aerial Search

RCC, Hazrat Shahjalal International Airport, Dhaka shall be responsible

to organize and co-ordinate aerial search of the entire Search and Rescue Region (SRR) of Bangladesh. Director of Air Operation, Air Headquarters, Bangladesh Air Force, Telephone No: 55063120, 55060000/3120 or Exc-9112052-6 will be requested to assist in conducting aerial search in co-ordination with Hazrat Shahjalal International Airport, Dhaka RCC. SATO, HSIA; SATCO, BAF Base Bashar/ Zahurul Haque/ Matiur Rahman/Bangabandhu/ DATCO (as applicable) will assist RCC to arrange BAF aircraft for SAR flight. Arrangement may be made on top priority basis consisting safety of human life. In addition, co-operation may be sought from the following organization for aerial search, if required:

- (a) Duty Operation Officer, Biman Bangladesh Airlines Limited.
(b) Honorary Secretary, Bangladesh Flying Academy & General Aviation Limited.

RCC Hazrat Shahjalal International Airport, Dhaka may advise any aircraft in flight to conduct aerial search provided, search area is on its route and there is sufficient fuel on board to conduct the search without hampering its own safety.

Note: - BAF having suitable aircraft like AN-32, C-130, L410 Helicopter Bell-212, AW-139 and BAF RADAR units can play major role in SAR, and Bangladesh Navy having Two Aircraft of Short Rang Group (SRG), Helicopter (Hel-L), Rescue Vessel (RV) and Rescue Boat (RB).

6.7.2 Land Search

RCC/Rescue Sub Centre shall co-ordinate with available Civil Administration, Military/Para Military Service, Police, Forest Department, Fire Services and Civil Defense, Railway, BTCL and other organization within its own area as necessary for manpower and equipment and conduct land Search of its own area. For the purpose of expeditious land search the Search and Rescue Region (SRR) of Bangladesh is divided into following area as shown against RCC and each RSC. All RSC will work under the instruction of Dhaka RCC:

SL No.	RCC/RSC	AREA OF RESPONSIBILITY
1.	Dhaka RCC	Entire area covered by Dhaka SRR.
2.	Chittagong RSC	Entire area covered by the Division of Chittagong except falling South of Latitude 21 ⁰ 45N.



3.	Cox's Bazar RSC	Entire area covered by the Division of Chittagong except falling North of Latitude 2145N.
4.	Comilla RSC	Entire area covered by the District of Comilla, Chandpur and Brahmanbaria.
5.	Sylhet RSC	Entire area covered by the Division of Sylhet.
6.	Saidpur RSC	Entire area covered by the Division of Rangpur.
7.	Rajshahi RSC	Entire area covered by the Division Rajshahi except Pabna and Nator District.
8.	Ishurdi RSC	Entire area covered by the District of Pabna and Natore .
9.	Jessore RSC	Entire area covered by the Division of Khulna.
10.	Barisal RSC	Entire area covered by the Division of Barisal.
11.	Comilla RSC	Entire area covered by Comilla District.

6.8 Duties of RCC for land Search

RCC shall inform/ request:

- a) Rescue Sub Centre concerned for Search and Rescue action;
- b) Border Guard Bangladesh, Dhaka to alert their outposts, which are in the vicinity of the route/ position of the emergency aircraft. They should also be requested to carry out search and rescue action;
- c) Railway control at Bhairab Bazar/ Paksey/ Chittagong/ Lalmonirhat, whichever of these controls cover the areas of the emergency aircraft for alerting all the railway station within the concerned area for news of that ill-fated aircraft and onward transmission of the information if any, to RCC, Hazrat Shahjalal International Airport, Dhaka;
- d) Army Headquarters at Dhaka in case assistance of the army is required;
- e) BIWTA, Fire Service and Civil Defense, Dhaka for search and rescue action;
- f) General Manager, BTCL Dhaka to advise all his telephone offices located in the vicinity of the ill-fated aircraft to collect information of the aircraft for onward transmission to RCC, Hazrat Shahjalal International Airport, Dhaka;
- g) DC/SP/UNO/RAB of the concerned area for search and rescue action directly or through rescue units;
- h) Navy, Coast Guard, Port Authorities, Mercantile & Marine Authorities if SAR over sea is involved;

6.9 Duties of Rescue Sub Centres for Land Search

On receipt of the information about an emergency aircraft through any source, all Rescue Sub Centres will take following action:

- a) Inform RCC, Hazrat Shahjalal International Airport, Dhaka;



- b) Request aircraft in flight to carry out search if possible while flying over the concerned SAR area;
- c) Request the DC/UNO concerned to assist in Search and Rescue action through the agencies under him;
- d) Request the superintendent of Police/ Police Station Officer concerned to alert all police post and outpost in the vicinity of the affected aircraft to assist in search and rescue;
- d) Request the concerned District traffic superintendent of Bangladesh Railway to instruct the Railway station in the vicinity of the affected aircraft to assist in search and rescue and to inform RCC at Hazrat Shahjalal International Airport/ nearest aerodrome authority when any information received about the distressed aircraft;
- f) Request help of concerned Army units/ Border Guard Bangladesh units/ Police station to alert their outpost in the vicinity of the affected aircraft;
- g) All information either passed to or help sought from any individual/ agency regarding the distressed aircraft should consist of type, colour, size, markings, persons on board etc. (as much information available) which will facilitate the search. Similarly individual/ agencies thus involved shall be requested to send back as much information as can be gathered about the aircraft and as expeditiously as possible;
- h) Maintain a chronological record of the action taken;
- i) Request Deputy Director of concerned of Fire Service & Civil Defense Division to alert all Fire station in the vicinity of the ill fated aircraft to assist in search and rescue;

6.10 Specific Duties of Rescue Sub Centres

In addition to the general duties listed before Rescue Sub Centre shall also take specific action as listed below:

6.10.1 Chittagong Rescue Sub Centre Shall:

- a) Keep liaison with the Harbour Master and Naval Officer Commanding and Coast Guard Chittagong in organizing Search & Rescue at sea, if necessary;
- b) Inform Padma Oil Company Ltd, Meghna Petroleum Ltd and Fire Service & Civil Defense Chittagong to assist in search and rescue with their available water-vessels;
- c) Assist Cox's Bazar Rescue Sub Centre, if Search and Rescue action is taken by Cox's Bazar Rescue Sub Centre, in maintaining liaison with RCC, Dhaka and other concerned units located at Chittagong;
- e) Obtain help and assistance from Army and Air force units located at Chittagong.



6.10.2 Jessore Rescue Sub Centre:

- a) Request Harbour master/ Naval unit at Mongla and Coast Guard unit in Khulna to take search and Rescue action when necessary;
- b) Request Army and Air force units for land & aerial search by BAF, Jessore should be coordinated with BAF, Base Basher, and Dhaka.

6.10.3 Sylhet Rescue Sub Centre:

- a) Request Fenchuganj Fertilizer Factory to lend all possible assistance;
- b) Request the Tea Estates of the concerned area to assist.

6.10.4 Cox's Bazar Rescue Sub Centre:

If direct liaison with RCC Dhaka & concerned agencies in Chittagong is not possible due to lack of speedy and reliable means of communication, liaison will be maintained through the Chittagong Rescue Sub Centre;

6.11 Functions of Air Traffic Services Units

All Air Traffic Services (ATS) units will function as an alerting post in the SAR system. They shall be responsible for the declaration of SAR phases to classify the severity of emergency and alert Dhaka RCC. It is likely that the ACC will receive a COSPAS-SARSAT distress alert from MCC of neighbouring countries on AMHS/ATN or by any other means. These alerts shall immediately be communicated to the RCC. ATS units are responsible for providing in-flight emergency response (IFER) services.

ATS units, subject to their primary duties are required to provide communications between the Search Aircraft and the responsible SAR Authority. This normally involves the relay of requests, instructions and information between the responsible RCC and the aircraft. The appropriate ATS authority is responsible for the declaration of Restricted or Danger Areas and issue NOTAM during SAR operations when appropriate. Distress alert may be received by the RCC through other sources, e.g.

- a) direct communication from the public or the distress craft; or
- b) another RCC or SAR authority.

6.12 Search Action Plan

6.12.1 The SMC typically provides the Search action plan, the OSC and facilities on-Scene implement the Search action plan.

Considerations in developing a Search plan include:

- a) estimating the most probable position of a distressed craft or survivors, taking drift effect into consideration;
- b) determining the Search area;
- c) selecting the SAR facilities and equipment to be used;
- d) selecting the Search pattern;
- e) planning on-scene coordination.



6.13 Rescue Action Plan

6.13.1 A Rescue action plan is normally prepared by the SMC for implementation by the OSC and facilities on-scene.

Considerations in developing a Rescue plan include:

- a) risk of SAR personnel;
- b) number, location and disposition of the survivors;
- c) condition of survivors and medical considerations;
- d) current meteorological conditions;
- e) current Sea conditions, as appropriate;
- f) time of day;
- g) survival equipment on hand;
- h) type of Rescue craft, etc.

6.14 Suspension or Termination of SAR Operation

SAR operations shall normally continue until all reasonable hope of rescuing survivors has passed.

6.14.1 The SAR Coordinator (Admin) shall normally decide in consultation with higher authority when to discontinue the SAR operation.

6.14.2 When the Appropriate authority considers, on the basis of reliable information that a rescue operation has been successful, or that the emergency no longer exists, it shall terminate the SAR operation and promptly so inform any authority, facility or service which has been activated or notified.



APPENDIX -I

Search and Rescue Signals

1.1 Signals with Surface Craft:

1.1.1 The following manoeuvres performed in sequence by an aircraft mean that the aircraft wishes to direct a surface craft towards an aircraft or a surface craft in distress:

- a) circling the surface craft at least once;
- b) crossing the projected course of the surface craft close ahead at low altitude and:
 - i. rocking the wings; or
 - ii. opening and closing the throttle; or
 - iii. changing the propeller pitch.
- c) heading in the direction in which the surface craft is to be directed.
Repetition of such manoeuvres has the same meaning.

1.1.2 The following manoeuvres by an aircraft means that the assistance of the surface craft to which the signal is directed is no longer required:

- a) crossing the wake of the surface craft close astern at a low altitude and:
 - i. *rocking the wings; or*
 - ii. *opening and closing the throttle; or*
 - iii. *changing the propeller pitch.*
- b) The following replies may be made by surface craft to the signal in 1.1.1: for acknowledging receipt of signals:
 - i. *the hoisting of the “code pennant” (vertical red and white stripes) close up (meaning understood);*
 - ii. *the flashing of a succession of “T’s” by signal lamp in the Morse code;*
 - iii. *the changing of heading to follow the aircraft.*
- c) for indicating inability to comply:
 - i. *the hoisting of the international flag “N” (a blue and white checkered square);*
 - ii. *the flashing of a succession of “N’s” in the Morse code.*

1.2 Ground-Air Visual Signal Codes

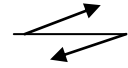
1.2.1 Ground-air visual signal code for use by survivors .

- 1 Require assistance **V**
- 2 Require medical assistance **X**
- 3 No or Negative **N**
- 4 Yes or Affirmative **Y**
- 5 Proceeding in this direction **↑**



1.2.2 Ground-air visual signal code for use by rescue units No Message Code Symbol

- 1 Operation completed **L L L**
- 2 We have found all personnel **L L**
- 3 We have found only some personnel **L**
- 4 We are not able to continue, returning to base **X X**
- 5 Have divided into two groups. Each proceeding in direction indicated
- 6 Information received that aircraft is in this direction → →
- 7 Nothing found. Will continue to search **N N**
- 8 We are not able to continue returning to base **XX**



1.2.3 Symbols shall be at least 2.5 meters (8 feet) long and shall be made as conspicuous as possible.

Note 1.—symbols may be formed by any means such as: strips of fabric, parachute material, pieces of wood, stones or such like material; marking the surface by tramping, or staining with oil.

Note 2.—Attention to the above signals may be attracted by other means such as radio, flares, smokes and reflected light.

1.3. Air-to-Ground Signal codes

1.3.1 The following signals by aircraft mean that the ground signals have been understood:

- a) during the hours of daylight:
 - i. by rocking the aircraft's wings;
- b) during the hours of darkness:
 - i. flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights.

1.3.2 Lack of the above signal indicates that the ground signal is not understood.

**APPENDIX- II****Address and Telephone numbers of Search and Rescue Services**

Name:	Aeronautical Address:	Telephone Nos:
1. Chairman Civil Aviation Authority, Bangladesh. Headquarters, Kurmitola, Dhaka -1229.	VGHQYAYX	Tel: 8901400 Mob: 01755556658, 01708167001 Fax: 8901411 E-mail: caab@bracnet.net chairman@caab.gov.bd
2. Member (Operations & Planning) Civil Aviation Authority, Bangladesh, Headquarters, Kurmitola, Dhaka-1229.	VGHQYAYO	Tel: 8901405 Mob: 01913503809, 01708167002 Fax: 8901428 E-mail: mopscaab@bracnet.net mops@caab.gov.bd
3. Director Air Traffic Services & Aero. Search & Rescue Coordinator(SC) (Admn.)	VGHQYAYS	Tel. 8901404 Mob: 01708167012 Fax: 8901411 E-mail: datsaero@caab.gov.bd
4. Director Hazrat Shahjalal International Airport, Kurmitola, Dhaka-1229 Search and Rescue Coordinator (SC)(Operation)	VGHSYDYX	Tel: 8901449 Mob: 01708167090 Fax: 8901450 E-mail: dhsia@caab.gov.bd
2. Deputy Director Hazrat Shahjalal International Airport. Kurmitola, Dhaka-1229	VGHSYDYX	Tel: 8901451 Fax: 8901450 Mob: 01708167094 E-mail: ddhsia@caab.gov.bd
2. Station Air Traffic Officer(SATO) Hazrat Shahjalal International Airport Dhaka(Chief of Rescue Co- ordination centre/SAR Mission Coordinator)	VGHSYHYX	Off : 8901460, 8901904-13/3412, Mob: 01708167096 E-mail: satohsia@caab.gov.bd
3. Rescue Co-ordination Centre, Hazrat Shahjalal International Airport, Dhaka.	VGHSYCYX	ACC-8901462,8901463, 8901904-13/Ext.- 3465/3410 RCC- 8901464, 8901904-13/3589 FAX:8901924 E-mail: rcc_dhaka@caab.gov.bd
4. Control Tower, Shah Amanat International Airport, Chittagong, Duty Controller or (SATO)	VGEGZTZX	TWR: 031-2500982(TWR) APM: 031-2500900 APM: 01708167272 SATO: 031-2500954 E-mail: apmctg@caab.gov.bd



5. Control Tower Osmani. International Airport, Sylhet. (Duty Controller or Airport Manager)	VGSYZTZX	0821-718459(TWR) Mob: 01746355500 (TWR) APM 0821-714243(Off.) & (Res.) APM: 01708167286, E-mail: apmsylhet@caab.gov.bd
6. Control Tower Cox's Bazar Airport(Duty Controller Or Airport Manager)	VGCBZTZX	0341-62530(TWR) 0341-52353 APM (Off.) 0341-64075 APM(Res.) APM: 01708167294, E-mail: apmcox@caab.gov.bd
7. Control Tower Saidpur Airport(Duty Controller Or Airport Manager)	VGSDZTZX	05526-72044(TWR) 05526-72384 APM (Off.) 05526-72533 APM(Res.) APM: 01708167307, E-mail: apmsaidpur@caab.gov.bd
8. Control Tower Ishurdi Airport (Duty Controller Or Airport Manager)	VGISZTZX	07326-63569(Off.) APM: 01708167311, E-mail: apmishurdi@caab.gov.bd
9. Control Tower Jessore Airport(Duty Controller Or Airport Manager)	VGJRZTZX	0421-65032(TWR) 0421-64033 APM (Off.) 0421-64033 APM(Res.) APM: 01708167298, E-mail: apmjessore@caab.gov.bd
10. Control Tower Rajshahi Airport(Duty Controller Or Airport Manager)	VGRJZTZX	0721-800157(TWR) 0721-800153 APM (Off.) APM: 01708167303, E-mail: apmrajshahi@caab.gov.bd
11. Control Tower Barisal Airport(Duty Controller Or Airport Manager)	VGBRZTZX	04327-73073(TWR) 04327-73062(Off.) APM: 01708167315 E-mail: apmbarisal@caab.gov.bd
12. Comilla Airport, Comilla.		APM : 081-76119 Mob: 01708167316

**APPENDIX-III****Address and Telephone numbers of Alerting Posts**

Name of Agencies Office/Designation	Telephone Numbers	
	Office	Residence
Director Operations & Plan Armed Forces Division Dhaka Cantonment.	9834332, Fax: 9834399 E-mail: gsol_jtops@afd.gov.bd	
Director Operations Army Headquarters, Dhaka Cant. Dhaka.	8711111/2100, nac3216@gmail.com	
Director Operations Naval Headquarters, Banani, Dhaka.	9834041/2110, 9836512 01769702110 E-mail: dno@navy.mil.bd ddno@navy.mil.bd	
Director Operations, Air Headquarters, Dhaka Cant. Dhaka. DD Air Operation, Air Headquarters.	55063120, 55060000/3121 9112051-6, dao@baf.mil.bd Cell:01769993120, Cell:01769993122, 3122	55064120 55064122
Maritime Rescue Coordination Centre (MRCC), Naval Headquarters, Banani, Dhaka - 1213	9836314 9836141-9,Ext:2116, 2128 Cell:01769701111 01769702113 E-mail: nhqmso@navy.mil.bd ddno@navy.mil.bd	
Coast Guard HQ. PA to DG	8181761, 9118377	
Naval Officer-in-Charge, Khulna.	Exc-041-760200-2/24 Exc-041-761001,761000	
Naval Officer-in-Charge, Mongla.	Exc-01713080138/24	01713080138
BAF Base, Zahur, Chittagong.	031-2501000-7	
BAF Base, Motiur, Jessore.	0421-68601-9	
Director General, Boarder Guard Bangladesh (BGB), Dhaka	9650100, 965101,	9650200
I.G Police, Police Headquarters, Fulbaria, Dhaka.	9514445,9514444	8362553, 8357088
MD. BTCL, Tele Communication Building, 37/E Eskaton Garden, Dhaka.	8311500 8651800	9891780
Postmaster-General, Dhaka.	9568978	9332026
Chairman, BIWTA Bangladesh Inland Water Transport Authority.	9565561	

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Chairman, BIWTC Bangladesh Inland Water Transport Corporation, Dhaka.	9554100 9567780	
Director, Bangladesh Meteorological Department (BMD), Agargaon, Dhaka- 1207.	8116534, 8119832	8126257
Director General , Bangladesh Railway	9561200	9358522
Managing Director, Bangladesh Biman, Dhaka.	8901700, Exc-8901500/2210	9853222
Director General, Bangladesh Television, Dhaka	9334110, Exc-9330131-9	58317224
Director General, Radio Bangladesh, Dhaka	9660003,9660836,9667226	8055325
Director General, Shipping	9513305	
Chairman, Port Authority, Chittagong	031-2510870	031-2854066
Chairman, Port Authority, Mongla, Bagerhat.	04662-75215	
Harbour Master, Chittagong	031-2510873,031-2510854	
Chairman, National Board of Revenue, Segun Bagicha, Dhaka.	9355959, 9348344	
Directorate of Agriculture	9117030, 9115791, 58153103	
Chief Conservator of Forest, Bangladesh Bon Bhaban, Agargaon, Sher-e-Bangla Nagar, Dhaka.	9357132,8833700	
Director General, RAB RAB HQ	7913101 Control Room: 9555555	
Director (Admn), RAB,HQ	7913104,Ops Con 9555555,7913117	
Director General of Bangladesh Fire Service & Civil Defense	9558880, Control Room- 9555555	
Managing Director, Bangladesh Shipping Corporation, Dhaka	9553568	
Hony. Secretary, Bangladesh Flying Club Ltd	8901904-13/4057	
Chief Engineer ,PWD,Dhaka	9562795	
Chief Eng. Roads & High way,Dhaka.	8879299	
Director, Centre for Medical Education	8821809	



APPENDIX-IV
CONTACT LIST: FOR SAR RESPONSE
Bangladesh Air Force

Appointment	E-mail Add.	BAF Exchange Civil No		Civil No		Mobile No
		Office	Res	Office	Res	
DAO	dao@baf.mil.bd	3120	4120	0255063120	0255064120	01769993120
DDAO(A&T)	ddaotpt@baf.mil.bd	3122	4122	0255063122	0255064122	01769993122
D ATS	dats@baf.mil.bd	3190	4190	0255063190	0255064190	01769993190
OC Ops BSR	ocopsbsr@baf.mil.bd	5010	6010	0255065010	0255066010	01769995010
OC Ops BBD	ocopsbbd@baf.mil.bd	5010	6010	029836003	029836004	01769985010
OC Ops ZHR	ocopszhr@baf.mil.bd	5010	6010	0312502002	0312502003	01769505010
OC Ops MTR	ocopsmtr@baf.mil.bd	5010	6010	042168707	042168707	01769965010
OC Ops PKP	ocopskp@baf.mil.bd	5010	6010	-	-	01769965010
OC Ops CXB	ocopscxb@baf.mil.bd	5010	6010	-	-	01769955010



CONTACT LIST: FOR SAR RESPONSE

Bangladesh Navy

MRCC AND MRCS

SL No	Area	Name of the Centre with address	Contact Details		
1.	Dhaka	Maritime Rescue Coordination Centre (NHQ Ops Room Naval Headquarters, Banani, Dhaka, Bangladesh)	Primary:		
			Telephone	Direct	+88-02-9836314
				PABX	+88-02-9836141-9, Ext: 2116, 2128
			Mobile	Duty Officer	+8801769701111
				Staff Officer	+8801769702113
			FAX		+88-02-8871254
			Email		+mrccdhk@navy.mil.bd
			Web Address		www.navy.mil.bd
			Secondary:		
			Maritime Rescue Coordination Centre (COMCEN Dhaka Naval Headquarters Banani, Dhaka, Bangladesh)	Telephone	Direct
		PABX			+88-02-9836141-9 Ext: 2521, 2522
		Mobile		Staff Officer	+8801769712520
		FAX			+88-02-9836270,+88-02-8712243
		Email		cmcmdhk@navy.mil.bd	
2.	Chittagong	Maritime Rescue Sub Centre Chittagong (Commander Chittagong Naval Area Ops Room New Mooring, Chittagong, Bangladesh)	Primary:		
			Telephone	Direct	+88-031-741989
				PABX	+88-031-740391-9,+88-031-740400-9, Ext: 4108-9
			Mobile	Duty Officer	+8801769721111
				Staff Officer	+8801769724131
			FAX		+88-031-741162
			Email		cmcnctg@navy.mil.bd
			Secondary:		
		Maritime Rescue Sub Centre Chittagong (COMCEN Chittagong, New Mooring, Chittagong,	Telephone	Direct	+88-031-741642
				PABX	+88-031-740391-9, +88-031-740400-9, +88-031-741770-9, Ext: 4137,6137
			Mobile	Staff Officer	+ 8801769724131
			FAX		+88-031-741162



APPENDIX-V

Initial Report Form

Date/ Time.....

1.1 Emergency Phase: INCERFA/ALERFA/DETRESFA

- 2. Agency or person calling.....
Occupation.....
Address, Homes.....Phone No.....
Address, Business.....Phone No.....
- 3 Nature and location of emergency.....
.....
- 4. Observation time and location.....
Departure Point.....Time.....
Expected route.....Cruising Speed.....
Intended destination.....ETA.....
Fuel endurance.....
Fuel endurance remaining at last known position.....
Alternates or possible alternates.....
- 5. Communication : Call RTF.....RTG.....SELCALL
Last Communication receive at.....(Time) by.....
(Station) on.....(Freq).....
- 6. Last Position report.....(Place, time) How determined.....
- 7. Aircraft: Type.....Registration.....
Colour and distinctive markings.....
Owner or operating agency.....
Emergency equipment carried.....
- 8. Local action taken.....
- 9. If survival stores are to be dropped type and quantity likely to required.....
- 10. Persons involved in incident:
Name of
pilot.....
Crew.....
Passengers.....
Number of uninjured.....injured.....Casualties...
- 11. Weather conditions in distress area, including sea condition if applicable, as reported by informant.....
- 12. Action taken by person receiving report.....

Signature.....

APP-V/1



APPENDIX-VI

1.1 International SITREP FORMET

A SITREP format has been adopted internationally which is intended for use, along with the standard codes for international communications between RCCs.

- TRANSMISSION (Distress/Urgency)
- DATE AND TIME (UTC or Local Date time Group)
- FORM: (Originating RCC)
- TO:
- SAR SITREP (NUMBER) (To indicate nature of message and completeness of sequence of SITREPs concerning the casualty)

- A. IDENTITY OF CASUALTY (Name/call sign, flag of state)
- B. POSITION (Latitude/Longitude)
- C. SITUATION (Type of message, e.g., distress/urgency; Date/time; nature of distress /urgency,e.g. fire, collision, medico)
- D. NUMBER PERSONS
- E. ASSISTANCE REQUIRED
- F. COORDINATING RCC

- Full form- To pass amplifying or updating information during SAR operations, the following additional sections should be used as necessary:

- G. DESCRIPTION OF CASUALTY (physical description owner/charterer Cargo carrier, passage form/to, Life-saving equipment carried)
- H. WEATHER ON SCENE (Wind, sea/swell state, air/sea Temperature, visibility, cloud Cover/ceiling, barometric pressure)
- I. INITIAL ACTIONS TAKEN (By casualty and RCC)
- J. SEARCH AREA (As planned by RCC)
- K. COORDINATING INSTRUCTIONS (OSC designated units Participating, communication)



APPENDIX- VII

1.1 Sample of Search Action Message-1

FROM.....

TO.....

DISTRESS C/SIGN..... POSITION.....

SEARCH ACTION PLAN FOR DATE..... YEAR

1. SITUATION:

A. C/SIGN REGN TEXT OF THE MSG (US REGISTERED AIRCRAFT N999J REPORTED ENGINE FAILURE AND INTENTIONS TO FORCED LANDING NEAR.....)

B. TYPE OF ACFT..... COLOUR OF THE ACFT.....

C. NO OF POB.....

D. PRIMARY SEARCH OBJECTS.....

2. ACTION: (REQUESTTO PROCEED TO.....TO SEARCH FOR SURVIVORS)

3. SEARCH AREAS.....

4. EXECUTION.....

5. CO-ORDINATION.....

6. COMMUNICATIONS.....

7. REPORTS.....



1.2 Sample of Search Action Message-2

FROM

TO.....

DISTRESS C/Sign.....DITCHED.....EASTERN BAY OF BENGAL
SEARCH ACTION PLAN FOR 10 APRIL 2013

1. SITUATION.....

- A. BANGLADESH REGISTERED AIRCRAFT ...S2AAA REPORTED ENGINE FAILURE AND INTENTION TO DITCH NEAR TEKNUF 50NM WEST OF TECNUF AT 1522UTC
- B. CESSNA-150, WHITE WITH BLUE TRIM
- C. TWO PERSONS ON BOARD
- D. PRIMARY SEARCH OBJECT: 7-PERSONS ORANGE RAFT WITH CANOPY ,FLAYERS.
SECONDARY: PERSONS IN THE WATER, DEBRIS, MIRROR, ORANGE SMOKE.

2 ACTION: REQUEST.....CAPT..... DIVERT TO SEARCH FOR SURVIVORS

3 SEARCH AREAS : (RED IN COLUMNS)

AREA CORNER POINTS

A-1 COORDINATES.....

A-2 COORDINATES.....

4. EXECUTION:(READ IN FIVE COLUMNS)

AREA..... FACILITY..... PATERN..... CREEP..... CSP

A-1 MR...X..... .. COORDINATES.....

A-2 CAPT..... .. - DO-

5 CO-ORDINATION:

- A. MR...X.....SAR CO-ORDINATOR IS SMC.
- B. MR...Y.....DESIGNATED OSC.
- C. COMMENCE SEARCH UPON ARRIVAL ON-SCENE.
- D. TRACK SPACING 3 NM DESIRED.

6. COMMUNICATIONS:

A. CONTROL:

B. ON-SCENE:	PRIMARY	SECONDARY
VHF-FM	CH-3	CH-4

7 REPORTS:

- A. OSC SEND SITREP TO SMC UPON ARRIVAL ON-SCENE, THEN HOURLY THEREAFTER INCLUDE WEATHER, SEAS, ETC.FOR EACH AREA IN ALL SITREPS.
- B. OSC REPORT ACTUAL AREA SEARCHED (SQUARE NAUTICAL MILES)



HOURS SEARCHED, TRACK SPACING USED, CORNER POINTS OF ACTUAL AREAS SEARCHED IF DIFFERENT FROM THOSE ASSIGNED. SEND REPORTS VIA MOST RAPID MEANS.



APPENDIX-VIII

1.1 SAR Capability Elements Descriptions

Training: The appropriate level and type of training for SAR coordinator, SAR mission coordinator, on-scene coordinator, and operational facilities.

Alerting: Fast and reliable means for the rescue coordination center to receive distress alerts.

Legislative: Statutes and related provisions that establish a legal foundation for establishing a SAR organization and its resources, policies, and procedures.

SAR committee: Typically established under a national SAR plan, the SAR coordinating committee is comprised of SAR system stakeholders.

Agreements: States should enter into agreements with neighboring States to strengthen SAR cooperation and coordination.

Relationships: Close cooperation between services and organizations which may contribute to improving SAR service in areas such as operations, planning, training, exercises and research and development.

Communications: Communication capability for receipt of distress alerts and operational coordination among the SAR mission coordinator, the on-scene coordinator and SAR facilities.

Quality Control: Procedures to focus on improving the quality of SAR services so as to improve results and reduce costs.

Civil/Military: Close cooperation between the various civilian and military organizations.

Resources: The primary operational facilities made available to the national SAR system by various authorities and arrangements with others.

SAR Exercise: Exercise to test and improve operational plans, provide learning experience and improve liaison and coordination skills.

Library: Quick access to the applicable international, national, and agency SAR publications that provide standards, policy, procedures and guidance.

Computerization: Use of or access to output of various computer resources including databases, computer aids for SAR system management, search planning software, etc.

SAR programme: National structure to establish, manage and support the provision and coordination of SAR services.



Supply dropping: Supplies and survival equipment carried by air and maritime SAR facilities to aid survivors and facilitate their rescue, as appropriate.

Special equipment: Equipment created for specific rescue scenarios (such as mountain or desert rescue) and equipment typically carried on designated SAR units to support coordination and locating functions as well as special supplies and survival equipment to aid survivors and facilitate their rescue.

SAR aircraft: An aircraft provided with specialized equipment suitable for the efficient conduct of SAR missions.

Navigation: Suitable means provided within the SAR region to determine position, and the responding SAR facilities have the appropriate equipment on board to determine their position in the SAR region they are likely to operate.

ELT: National regulations for carriage of ELTs, and arrangements for registration of the 406 MHz beacon and rapid access to the beacon registration database.

Cospas-Sarsat Distress Alerts: A SAR Point of Contact (SPOC) designated for receipt of Cospas-Sarsat distress data, and arrangements for efficient routing of the distress data to the appropriate SAR authority (the aeronautical emergency locator transmitter ELT), maritime emergency position-indicating beacon (EPIRB), and personal locator beacon (PLB)).



APPENDIX-IX

AIRPORT EMERGENCY PLAN AIRCRAFT ACCIDENT ON/OFF THE AIRPORT

1.1 Functions of RCC

THE PERSON RECEIVING THE ACCIDENT REPORT

SHALL;

Obtain the following information, if possible;

- Location of the aircraft
- Identification of the aircraft
- Fire/Explosion/buildings involved;
- Condition of occupants in and out of the

Aircraft;

- Best possible route to reach the crash site
- Name, Telephone numbers and address

of Person calling.

- Any other useful information.
- Pass all information to rescue organisations.
- Inform SAR Coordinator (SC)/ (D/ATS)

SAR MISSION COORDINATOR (SMC)/SATO HSIA

On receipt of the Emergency message;

- Arrange to dispatch Emergency Rescue

Equipments and resources to the site as

Required.

- Gather information about distress situation
- Pass all information to rescue organisations as required.

- Maintain liaison with all rescue

Organisations and assist those organisation as required.

- Evaluate all reports and modify rescue

Action plan as necessary

- Make sure all the communication facilities are available
- Keep records of all SAR telephone Conversation.
- Prepare a final report upon termination of Rescue operation

APP-IX/1



END